SAFETY DATA SHEET
LANASET® BLACK B GR

SECTION 1. IDENTIFICATION

Product name : LANASET® BLACK B GR

Manufacturer or supplier’s details
Company name of supplier : Huntsman International LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America
Telephone : Cust ser: (888) 514 4558
E-mail address of person responsible for the SDS : MSDS@huntsman.com
Emergency telephone : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use
Recommended use : Textile dyes, finishing and impregnating products; including bleaches and other processing aids

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Eye irritation : Category 2A
Skin sensitization : Category 1
Chronic aquatic toxicity : Category 2

GHS Label element
Hazard pictograms : ⚠ ▪️
Signal Word : Warning
Hazard Statements : H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : Prevention:
P280 Wear eye protection/ face protection.
Recommended:
Tightly fitting safety goggles
P273 Avoid release to the environment.
P261 Avoid breathing dust.
P264 Wash hands thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

Response:
P391 Collect spillage.
P302 IF ON SKIN:
P352 Wash with plenty of soap and water.
P362 Take off contaminated clothing and wash before reuse.
P305 IF IN EYES:
P337 If eye irritation persists:
P313 Get medical advice/attention.

Storage:
P422 Store contents under inert gas.

Disposal:
ENVT12 Dispose of waste product or used containers according to local regulations.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
</table>

SECTION 4. FIRST AID MEASURES

General advice: Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled: If breathed in, move person into fresh air.
Keep respiratory tract clear.
If breathing is irregular or stopped, administer artificial respiration.
If symptoms persist, call a physician.
If unconscious place in recovery position and seek medical advice.

In case of skin contact: In case of skin contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

In case of eye contact:
Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

If swallowed:
Do not induce vomiting without medical advice. If a person feels unwell or symptoms of skin irritation appear, consult a specialist.

Most important symptoms and effects, both acute and delayed:
May cause an allergic skin reaction. Causes serious eye irritation.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media:
High volume water jet

Specific hazards during fire fighting:
No data is available on the product itself. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products:
No hazardous combustion products are known

Specific extinguishing methods:
No data is available on the product itself.

Further information:
Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters:
Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Use personal protective equipment. Avoid dust formation. Avoid breathing dust.
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Environmental precautions:
- Prevent product from entering drains.
- Prevent further leakage or spillage if safe to do so.
- If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up:
- Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion:
- Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Advice on safe handling:
- Avoid formation of respirable particles.
- Do not breathe vapors/dust.
- Avoid contact with skin and eyes.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- Dispose of rinse water in accordance with local and national regulations.
- Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage:
- Keep container tightly closed in a dry and well-ventilated place.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid:
- No hazardous decomposition products are known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Personal protective equipment

Respiratory protection: P1 filter

Hand protection
Material: Neoprene gloves
Break through time: < 1 h

Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

**Skin and body protection**
- Dust impervious protective suit
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**
- When using do not eat or drink.
- When using do not smoke.
- Wash hands before breaks and at the end of workday.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>granules</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>black</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>odorless</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>7.5 - 8.5, Concentration: 1 g/l (20 °C)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Burning rate</strong></td>
<td>Fire will spread by smoldering or slow decomposition.</td>
</tr>
<tr>
<td><strong>Upper explosion limit</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Lower explosion limit</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Relative vapor density</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>0.69 g/cm³ (20 °C)</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Bulk density</td>
</tr>
<tr>
<td><strong>Water solubility</strong></td>
<td>&gt;= 65 g/l (90 °C)</td>
</tr>
<tr>
<td><strong>Solubility in other solvents</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>No data is available on the product itself.</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>No data is available on the product itself.</td>
</tr>
</tbody>
</table>
Decomposition temperature: > 200 °C

Viscosity: No data is available on the product itself.

Oxidizing properties: None.

Self-Accelerating decomposition temperature (SADT): No data is available on the product itself.

Impact sensitivity: Not impact sensitive.

SECTION 10. STABILITY AND REACTIVITY

Reactivity: No decomposition if stored and applied as directed.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: None known. Stable under normal conditions.

Conditions to avoid: None.

Hazardous decomposition products: Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure: No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product: LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity - Product: Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute toxicity (other routes of administration): No data available

Skin corrosion/irritation

Product:
Species: Rabbit
Assessment: No skin irritation
Result: No skin irritation

**Serious eye damage/eye irritation**

**Product:**
Species: Rabbit
Result: Irritating to eyes.
Assessment: Irritant
Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitization**

**Product:**
Routes of exposure: Skin
Species: Guinea pig
Assessment: May cause sensitization by skin contact.
Method: OECD Test Guideline 406
Result: Causes sensitization.
Remarks: Causes sensitization.
Assessment: No data available

**Germ cell mutagenicity**

**Ingredients:**
Genotoxicity in vitro: Metabolic activation: with and without metabolic activation
  Method: OECD Test Guideline 471
  Result: Not classified due to inconclusive data.
  Metabolic activation: with and without metabolic activation
  Method: OECD Test Guideline 476
  Result: negative

**Ingredients:**
Genotoxicity in vivo: Cell type: Somatic
  Application Route: Intraperitoneal injection
  Dose: 150 mg/kg
  Method: OECD Test Guideline 474
  Result: negative

**Carcinogenicity**
No data available

Carcinogenicity - Assessment: No data available
Reproductive toxicity
Effects on fertility : No data available

Ingredients:
Effects on fetal development : Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 1,000 mg/kg body weight
Method: OECD Test Guideline 422
Result: No teratogenic effects.

Reproductive toxicity - Assessment : No data available

STOT-single exposure
No data available

STOT-repeated exposure
No data available

Repeated dose toxicity
Ingredients:
Species: Rat
NOAEL (No observed adverse effect level): 1000 mg/kg
Application Route: Ingestion
Exposure time: 672 h
Method: Subacute toxicity

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity
No data available

Experience with human exposure
General Information: No data available
Inhalation: No data available
Skin contact: No data available
Eye contact: No data available
Ingestion: No data available

Toxicology, Metabolism, Distribution
No data available

Neurological effects
No data available

Further information

Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxicity to fish - Product: LC50: 6 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 203

Ingredients:
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 2.3 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 10 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 79 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Ingredients:
Toxicity to algae: ErC50: 103 mg/l
Exposure time: 168 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 221

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : No data available

M-Factor (Chronic aquatic toxicity) : No data available

Toxicity to bacteria - Product : IC50: > 300 mg/l
Exposure time: 3 h

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information: No data available

Persistence and degradability
Biodegradability - Product : Biodegradation: ca. 40 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

Biochemical Oxygen Demand (BOD) - Product : 0 mgO2/g

Chemical Oxygen Demand (COD) - Product : 950 mgO2/g
BOD/COD : No data available
ThOD : No data available
BOD/ThOD: No data available
Dissolved organic carbon (DOC): No data available
Physico-chemical removability: No data available
Stability in water: No data available
Photodegradation: No data available
Impact on Sewage Treatment: No data available

Bioaccumulative potential
Bioaccumulation: No data available

Ingredients:
Partition coefficient: n-octanol/water: log Pow: < 3 (20 °C)
Method: No information available.

Partition coefficient: n-octanol/water: log Pow: < 3 (20 °C)
Method: No information available.

Partition coefficient: n-octanol/water: log Pow: -1.74 (20 °C)

Mobility in soil
Mobility: No data available
Distribution among environmental compartments: No data available
Stability in soil: No data available

Other adverse effects
Environmental fate and pathways: No data available
Results of PBT and vPvB assessment: No data available
Endocrine disrupting potential: No data available
Adsorbed organic bound: .1 %
halogens (AOX) - Product: Test substance: Chlorine

Hazardous to the ozone layer
Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

Additional ecological information - Product: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP): No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation
IATA
UN/ID No.: UN 3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
(CHROMIUM COMPLEX MONOAZO DYESTUFF)
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956

IMDG
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CHROMIUM COMPLEX MONOAZO DYESTUFF)

Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

DOT Classification
UN/ID/NA number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (CHROMIUM COMPLEX MONOAZO DYESTUFF)
Class: 9
Packing group: III
Labels: CLASS 9
ERG Code: 171
Marine pollutant: yes

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 311/312 Hazards: Acute Health Hazard

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):


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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Pennsylvania Right To Know

Sulfuric acid sodium salt (1:2) 7757-82-6 20 - 30 %

California Prop 65: This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

TSCA: On the inventory, or in compliance with the inventory
DSL: On the inventory, or in compliance with the inventory
AICS: On the inventory, or in compliance with the inventory
ENCS: Not in compliance with the inventory
ENCS: LANASET® BLACK B BPG
ISHL: Not in compliance with the inventory
ISHL: LANASET® BLACK B BPG
KECI: Not in compliance with the inventory
KECI: LANASET® BLACK B BPG
PICCS: On the inventory, or in compliance with the inventory
PICCS: LANASET® BLACK B BPG
IECSC: On the inventory, or in compliance with the inventory

Inventories:
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)
SECTION 16. OTHER INFORMATION

Further information

**NFPA:**

- Flammability
- Instability
- Health
  - 0 = not significant
  - 1 = Slight
  - 2 = Moderate
  - 3 = High
  - 4 = Extreme

**HMIS III:**

- Health: 2
- Flammability: 1
- Physical Hazard: 0

Revision Date: 06/24/2015

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
SECTION 1. IDENTIFICATION

Product name: LANASET® BROWN B

Manufacturer or supplier's details
Company name of supplier: Huntsman International LLC
Address: P.O. Box 4980
The Woodlands, TX 77387
United States of America
Telephone: Cust ser: (888) 514 4558
E-mail address of person responsible for the SDS: MSDS@huntsman.com
Emergency telephone: Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use
Recommended use: Textile dyes, finishing and impregnating products; including bleaches and other processing aids

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Skin sensitization: Category 1
Chronic aquatic toxicity: Category 2

GHS Label element
Hazard pictograms:

Signal Word: Warning
Hazard Statements: H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements: Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P272 Contaminated work clothing must not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture**: Mixture

**Hazardous ingredients**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>paraffin oils</td>
<td>8012-95-1</td>
<td>&gt;= 1 - &lt;= 3</td>
</tr>
<tr>
<td>disodium [2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-hydroxy-4-[(2-hydroxy-1-naphthyl)-azo]phenol]</td>
<td>70236-60-1</td>
<td>&gt;= 30 - &lt;= 60</td>
</tr>
<tr>
<td>disodium [3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-4-hydroxybenzenesulphonato(3-)][1-[(2-hydroxy-5-(phenylazo)ph</td>
<td>52587-68-5</td>
<td>&gt;= 13 - &lt;= 30</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

**General advice**: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.

- **If inhaled**: If inhaled
  - Move to fresh air.
  - Keep respiratory tract clear.
  - If symptoms persist, call a physician.

- **In case of skin contact**: In case of skin contact
  - Wash off with soap and plenty of water.
  - If skin irritation persists, call a physician.
  - Wash contaminated clothing before re-use.

- **In case of eye contact**: In case of eye contact
  - Flush eyes with water as a precaution.
  - Remove contact lenses.
  - If eye irritation persists, consult a specialist.

- **If swallowed**: If swallowed
  - Do not induce vomiting without medical advice.
  - If a person feels unwell or symptoms of skin irritation appear, consult a physician.

- **Most important symptoms and effects, both acute and**: May cause an allergic skin reaction.
SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : No data is available on the product itself.

Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : No hazardous combustion products are known

No data is available on the product itself.

Specific extinguishing methods : No data is available on the product itself.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing dust.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Advice on safe handling : Avoid formation of respirable particles.
Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid: No hazardous decomposition products are known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>paraffin oils</td>
<td>8012-95-1</td>
<td>TWA (Mist)</td>
<td>5 mg/m3</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>64742-54-7</td>
<td>TWA (Inhalable fraction)</td>
<td>5 mg/m3</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.

Hand protection

Material: Gloves

Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Eye wash bottle with pure water

Tightly fitting safety goggles.

Skin and body protection: Dust impervious protective suit

Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures: Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: granules
Color: black
Odor: odorless
Odor Threshold: No data is available on the product itself.
pH: 9 - 10, Concentration: 20 g/l
Flash point: No data is available on the product itself.
Evaporation rate: No data is available on the product itself.
Flammability (solid, gas): No data is available on the product itself.
Burning rate: Product resists ignition and does not promote flame spread.

Upper explosion limit: No data is available on the product itself.
Lower explosion limit: No data is available on the product itself.
Vapor pressure: No data is available on the product itself.
Relative vapor density: No data is available on the product itself.
Relative density: No data is available on the product itself.
Density: 0.98 g/cm³
Bulk density

Solubility(ies)
Water solubility: 100 g/l (30 °C)

Solubility in other solvents: No data is available on the product itself.
Partition coefficient: n-octanol/water
Autoignition temperature: No data is available on the product itself.
Decomposition temperature: > 200 °C

Viscosity: No data is available on the product itself.
Oxidizing properties: None.
Self-Accelerating: No data is available on the product itself.
decomposition temperature (SADT)
Impact sensitivity : Not impact sensitive.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : No decomposition if stored and applied as directed.
Possibility of hazardous reactions
Stable under normal conditions.
No decomposition if stored and applied as directed.
Dust may form explosive mixture in air.

Conditions to avoid : None.

Hazardous decomposition products : Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity
Acute oral toxicity - Product : LD50 (Rat): > 5,000 mg/kg

Ingredients:
paraffin oils:
Acute inhalation toxicity : LC50 (Rat): 2,062 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : No data available

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation

Product:
Species: Rabbit
Assessment: No skin irritation
Result: No skin irritation
Remarks: May cause skin irritation and/or dermatitis.
**Serious eye damage/eye irritation**

**Product:**
Species: Rabbit
Result: No eye irritation
Assessment: No eye irritation

Remarks: Product dust may be irritating to eyes, skin and respiratory system.

**Respiratory or skin sensitization**

**Product:**
Routes of exposure: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Causes sensitization.

Remarks: Causes sensitization.
Assessment: No data available

**Germ cell mutagenicity**
Genotoxicity in vitro: No data available
Genotoxicity in vivo: No data available

**Carcinogenicity**
No data available
Carcinogenicity - Assessment: No data available

- **IARC**
  Group 1: Carcinogenic to humans
  - paraffin oils

- **ACGIH**
  Suspected human carcinogen
  - paraffin oils

- **OSHA**
  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

- **NTP**
  Known to be human carcinogen
  - paraffin oils

**Reproductive toxicity**
Effects on fertility: No data available
Effects on fetal development: No data available
Reproductive toxicity: No data available
Assessment

**STOT-single exposure**
No data available

**STOT-repeated exposure**
No data available

**Repeated dose toxicity**
No data available

Repeated dose toxicity - Assessment: No data available

**Aspiration toxicity**
No data available

**Experience with human exposure**
General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**
No data available

**Neurological effects**
No data available

**Further information**

**Product:**
Remarks: No data available

---

**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**
Toxicity to fish - Product: LC50: 5 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Ingredients:
disodium [2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)]3-hydroxy-4-[(2-hydroxy-1-naphthyl)];
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: no

disodium [3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-4-hydroxybenzenesulphonato(3-)][1-[[2-hydroxy-5-(phenylazo)ph:
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 15.6 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae: No data available

M-Factor (Acute aquatic toxicity): No data available

Toxicity to fish (Chronic toxicity): No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): No data available

M-Factor (Chronic aquatic toxicity): No data available

Toxicity to bacteria - Product: IC50: > 300 mg/l
Exposure time: 3 h

Toxicity to soil dwelling organisms: No data available

Plant toxicity: No data available

Sediment toxicity: No data available

Toxicity to terrestrial organisms: No data available

Ecotoxicology Assessment
Acute aquatic toxicity: No data available
Chronic aquatic toxicity: No data available
Toxicity Data on Soil: No data available
Other organisms relevant to the environment: No data available

Further information: No data available
Persistence and degradability

Biodegradability - Product: Biodegradation: 10 - 20 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

Biochemical Oxygen Demand (BOD) - Product:
- 15 mgO2/g

Chemical Oxygen Demand (COD) - Product:
- 1120 mgO2/g
- BOD/COD: No data available

ThOD: No data available

BOD/ThOD: No data available

Dissolved organic carbon (DOC): No data available

Physico-chemical removability: No data available

Stability in water: No data available

Photodegradation: No data available

Impact on Sewage Treatment: No data available

Bioaccumulative potential

Bioaccumulation: No data available

Ingredients:

disodium [2,4-dihydro-4-[2-hydroxy-5-nitrophenyl]azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)]
Partition coefficient: n-octanol/water: log Pow: < 3

disodium [3-[4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl]azo]-4-hydroxybenzenesulphonato(3-)][1-][2-hydroxy-5-(phenylazo)ph:
Partition coefficient: n-octanol/water: log Pow: < 3 (20 °C)
Method: No information available.

Mobility in soil

Mobility: No data available

Distribution among environmental compartments: No data available

Stability in soil: No data available

Other adverse effects
Environmental fate and pathways : No data available
Results of PBT and vPvB assessment : No data available
Endocrine disrupting potential : No data available
Adsorbed organic bound halogens (AOX) - Product : 0 %

**Hazardous to the ozone layer**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

---

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

---

**SECTION 14. TRANSPORT INFORMATION**

**International Regulation**

**IATA**

UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (MONOAZO METAL COMPLEX DYESTUFF)
Class : 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956

IMDG
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MONOAZO METAL COMPLEX DYESTUFF)
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

DOT Classification
UN/ID/NA number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (MONOAZO METAL COMPLEX DYESTUFF)
Class: 9
Packing group: III
Labels: CLASS 9
ERG Code: 171
Marine pollutant: yes

SECTION 15. REGULATORY INFORMATION

TSCA - 5(a) Significant New Use Rule List of Chemicals
Not relevant

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM HEXAMETAPHOSPHATE</td>
<td>10124-56-8</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards: Chronic Health Hazard
SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

- disodium [2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-hydroxy-4-{(2-hydroxy-1-naphthyl)disodium [3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-4-hydroxybenzenesulphonato(3-)][1-[(2-hydroxy-5-(phenylazo)phenyloxy)]

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

- Distillates (petroleum), hydrotreated heavy paraffinic 64742-54-7

The ingredients of this product are reported in the following inventories:

- TSCA: On the inventory, or in compliance with the inventory
- DSL: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)
SECTION 16. OTHER INFORMATION

Further information

NFPA:

Hazard
  Health: 2
  Flammability: 0
  Instability: 0

HMIS III:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

Revision Date: 08/14/2015

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
SAFETY DATA SHEET
LANASET® GREEN B

Section 1. Identification

GHS product identifier : LANASET® GREEN B
Product code : 00041695
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

<table>
<thead>
<tr>
<th>Identified uses</th>
<th>Uses advised against</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textile dye</td>
<td>Not available.</td>
<td>-</td>
</tr>
</tbody>
</table>

Supplier's details

Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387

Customer service telephone: (888) 514-4558

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms

Signal word : Warning

Hazard statements : Very toxic to aquatic life with long lasting effects.
Section 2. Hazards identification

Precautionary statements : Avoid release to the environment. Collect spillage. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium [(9,10-dihydro-9,10-dioxo-1,4-anthrylene)bis(imino-4,1-phenylenoxy)]bis(benzenesulfonate)</td>
<td>60 - 100</td>
<td>70161-19-2</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>1 - 3</td>
<td>8012-95-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water; occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Section 4. First aid measures

**Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact**: No known significant effects or critical hazards.

**Ingestion**: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact**: No specific data.

**Inhalation**: No specific data.

**Skin contact**: No specific data.

**Ingestion**: No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Flash point**: Closed cup: Not applicable.

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**: This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- metal oxide/oxides

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark**: Not explosive
Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits
Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAFFIN OILS</td>
<td>ACGIH TLV (United States, 3/2012). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction. OSHA PEL (United States, 6/2010). TWA: 5 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

### Appropriate engineering controls
- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

### Environmental exposure controls
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

#### Hand protection
- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene

#### Body protection
- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Other skin protection
- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Respiratory protection
- Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P1

#### Thermal hazards
- Not available.
## Section 9. Physical and chemical properties

### Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid. [granules]</td>
</tr>
<tr>
<td>Color</td>
<td>Navy blue</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>pH</td>
<td>9 to 9.5 [Conc. (% w/w): 2%]</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water Solubility Result</td>
<td>30 g/l</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>200°C (392°F)</td>
</tr>
<tr>
<td>Ignition Temperature (Deg C): SIT &gt; 450 °ASTM-D1929B</td>
<td>420 °C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Dynamic (room temperature): Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Kinematic (room temperature): Not applicable.</td>
</tr>
</tbody>
</table>

### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>
**LANASET® GREEN B**

**Section 11. Toxicological information**

**Information on toxicological effects**

### Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate) PARAFFIN OILS</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>-</td>
<td>LC50 Inhalation Dducts and mists</td>
<td>Rat</td>
<td>2062 mg/l</td>
</tr>
<tr>
<td>Lanaset Green B</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>22000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

**Conclusion/Summary**

**Skin**

: Non-irritant. Rabbit

Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate) PARAFFIN OILS

No additional information.

**Eyes**

: Non-irritant. Rabbit

Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate) PARAFFIN OILS

No additional information.

**Respiratory**

: Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate) PARAFFIN OILS

No additional information.

**Sensitization**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate) Lanaset Green B</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td></td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
</tbody>
</table>

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.
Section 11. Toxicological information

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Not available.

Potential acute health effects

Eye contact: No known significant effects or critical hazards.
Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.
Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Other information : Not available.

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate)</td>
<td>OECD 201 Alga, Growth Inhibition Test</td>
<td>Acute EC50</td>
<td>72 hours</td>
<td>Algae</td>
<td>9.6 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>&gt;34 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>48 hours</td>
<td>Fish</td>
<td>0.6 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td>LANASET GREEN B</td>
<td>OECD 201 Alga, Growth Inhibition Test</td>
<td>Acute EC50</td>
<td>72 hours</td>
<td>Algae</td>
<td>9.6 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>&gt;34 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;300 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC0</td>
<td>48 hours</td>
<td>Fish</td>
<td>0.2 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>48 hours</td>
<td>Fish</td>
<td>0.6 mg/l</td>
</tr>
</tbody>
</table>

Conclusion/Summary : Very toxic to aquatic organisms if run directly to surface waters

Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate)</td>
<td>OECD 303A Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units</td>
<td>28 days</td>
<td>10 to 20 %</td>
</tr>
<tr>
<td>LANASET GREEN B</td>
<td>OECD 303A Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units</td>
<td>28 days</td>
<td>10 to 20 %</td>
</tr>
</tbody>
</table>

Conclusion/Summary : Poorly eliminated by adsorption on effluent treatment sludge.
Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET GREEN B</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate)</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium [(9,10-dihydro-9, 10-dioxo-1,4-anthrylene)bis (imino-4,1-phenyleneoxy)]bis (benzenesulfonate)</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

Not available.

**Other adverse effects**

No known significant effects or critical hazards.

**Other ecological information**

- **BOD<sub>5</sub>** : 0 mgO<sub>2</sub>/g
- **COD** : 1270 mgO<sub>2</sub>/g
- **TOC** : 43 %
- **Organohalogen content** : 0 %
- **Phosphorus Content** : 0 %
- **Nitrogen Content** : 3.4 %
- **Metal Content** : Metal content under the ETAD recommended limits.

Section 13. Disposal considerations

**Disposal methods**

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal should be in accordance with applicable regional, national and local laws and regulations.
Section 14. Transport information

Proper shipping name

**DOT**: Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF). Marine pollutant
**TDG**: Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF). Marine pollutant
**IMDG**: Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF). Marine pollutant
**IATA**: Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF)

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td></td>
<td>- Only regulated in Bulk.</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td></td>
<td>Emergency schedules (EmS)</td>
</tr>
<tr>
<td>IATA Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td></td>
<td>Passenger and Cargo Aircraft Quantity limitation: 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 956</td>
</tr>
</tbody>
</table>

PG*: Packing group
Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.
TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.
TSCA 5(e) substance consent order : No ingredients listed.
TSCA 12(b) export notification : No ingredients listed.
SARA 311/312 : Not classified.
Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.
SARA 313 : No ingredients listed.
CERCLA Hazardous substances : No ingredients listed.

State regulations

PENNSYLVANIA - RTK : Sodium sulfate, Mixture of hydrocarbons ex petroleum
California Prop 65 : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL : All components are listed or exempted.

WHMIS Classes

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

Classification system used : Norma ABNT-NBR 14725-2:2012

International lists

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.
Section 16. Other information

Hazardous Material Information System (U.S.A.)

- Health: 0
- Flammability: 1
- Physical hazards: 0
- Personal protection: X

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

- Health: 1
- Flammability: 0
- Instability: 0
- Special hazards: 0

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Date of issue: 1/7/2014.
Date of previous issue: No previous validation.
Version: 1

Indicates information that has changed from previously issued version.

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

1/7/2014. 00041695
Section 16. Other information

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULLY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
Section 1. Identification

GHS product identifier : LANASET® GREY G GR
Product code : 00041728
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Textile dye

Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387
Customer service telephone: (888) 514-4558

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms : !

Signal word : Warning

Hazard statements : May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

Precautionary statements : Wear protective gloves: < 1 hour (breakthrough time): butyl or neoprene. Avoid release to the environment. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Collect spillage. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.
Section 2. Hazards identification

Other hazards which do not result in classification: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>13-30</td>
<td>84145-95-9</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>13-30</td>
<td>75314-27-1</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>7-13</td>
<td>68541-71-9</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>1-3</td>
<td>64611-73-0</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>1-3</td>
<td>51147-75-2</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>1-3</td>
<td>36290-04-7</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>1-3</td>
<td>8012-95-1</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>0.1-1</td>
<td>70851-34-2</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects
Section 4. First aid measures

**Eye contact**
No known significant effects or critical hazards.

**Inhalation**
Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact**
May cause an allergic skin reaction.

**Ingestion**
No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact**
No specific data.

**Inhalation**
No specific data.

**Skin contact**
Adverse symptoms may include the following:
- irritation
- redness

**Ingestion**
No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**
No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

**Protection of first-aiders**
No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Flash point**
Closed cup: Not applicable.

**Extinguishing media**

**Suitable extinguishing media**
Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
None known.

**Specific hazards arising from the chemical**
This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- halogenated compounds
- metal oxide/oxides

**Special protective actions for fire-fighters**
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Section 5. Fire-fighting measures

Remark: Not explosive

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010). TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010). TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010). TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>ACGIH TLV (United States, 3/2012). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 6/2010). TWA: 5 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Environmental exposure controls

- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
- Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Hand protection

- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene

Body protection

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Section 8. Exposure controls/personal protection

**Respiratory protection**
- Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P2

**Thermal hazards**
- Not available.

---

Section 9. Physical and chemical properties

**Appearance**
- **Physical state**: Solid [granules]
- **Color**: Black.
- **Odor**: Odorless.
- **Odor threshold**: Not applicable.
- **pH**: 7.5 to 8 [Conc. (% w/w): 2%]

**Melting point/Freezing point**: Not available.
**Boiling/condensation point**: Not available.
**Flash point**: Closed cup: Not applicable.
**Evaporation rate**: Not applicable.
**Flammability (solid, gas)**: Non-flammable.
**Lower and upper explosive (flammable) limits**: Not available.
**Vapor pressure**: Not available.
**Vapor density**: Not available.
**Relative density**: Not available.
**Solubility in water**: Not available.
**Water Solubility Result**: 80 g/l

**Partition coefficient: n-octanol/water**: Not available.
**Auto-ignition temperature**: Not available.
**Decomposition temperature**: >200°C (>392°F)
**Ignition Temperature (Deg C)**: SIT > 450 °C

**Explosive properties**: Not explosive
**Oxidizing properties**: None.
**Density**: 0.6 to 0.7 g/cm³ [20°C (68°F)]
**Viscosity**: Dynamic (room temperature): Not applicable.
**VOC**: 2.1 % (w/w)

---

Section 10. Stability and reactivity

**Reactivity**: No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**: The product is stable.
Section 10. Stability and reactivity

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: No specific data.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Mouse</td>
<td>4880 mg/kg</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>2062 mg/l</td>
<td></td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>22000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3900 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET GREY G GR</td>
<td>OECD 404 Acute Dermal Irritation/Corrosion</td>
<td>Rabbit</td>
<td>Skin - Non-irritant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rabbit</td>
<td>Eyes - Non-irritant.</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Non-irritating to the skin.

Chromium as Cr(III) organo-metal complex: No additional information.

Cobalt as organo-metal complex: No additional information.

Chromium as Cr(III) organo-metal complex: No additional information.

Chromium as Cr(III) organo-metal complex: No additional information.

Chromium as Cr(III) organo-metal complex: No additional information.

2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt: No additional information.
## Section 11. Toxicological information

**Eyes**
- Non-irritating to the eyes.
- Chromium as Cr(III) organo-metal complex
- Cobalt as organo-metal complex
- Chromium as Cr(III) organo-metal complex
- Chromium as Cr(III) organo-metal complex

**Respiratory**
- Chromium as Cr(III) organo-metal complex
- Cobalt as organo-metal complex
- Chromium as Cr(III) organo-metal complex
- Chromium as Cr(III) organo-metal complex
- 2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt

**Sensitization**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

**Mutagenicity**

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Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>Subject: bacteria/yeast</td>
<td>Negative</td>
</tr>
</tbody>
</table>

**Carcinogenicity**
Not available.

**Carcinogenic class**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.

**Specific target organ toxicity (single exposure)**
Not available.

**Specific target organ toxicity (repeated exposure)**
Not available.

**Aspiration hazard**
Not available.

**Information on the likely routes of exposure**
Not available.

**Potential acute health effects**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: May cause an allergic skin reaction.
- **Ingestion**: No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: Adverse symptoms may include the following: irritation, redness
- **Ingestion**: No specific data.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

- **Potential immediate effects**: Not available.
Section 11. Toxicological information

Potential delayed effects
- Not available.

Long term exposure
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

Potential chronic health effects
- General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity: No known significant effects or critical hazards.
- Mutagenicity: No known significant effects or critical hazards.
- Teratogenicity: No known significant effects or critical hazards.
- Developmental effects: No known significant effects or critical hazards.
- Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
- Not available.

Other information
- Not available.

Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>LC50</td>
<td>48 hours</td>
<td>Fish</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute</td>
<td>IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>LC50</td>
<td>48 hours</td>
<td>Fish</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute</td>
<td>IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>NOEC</td>
<td>48 hours</td>
<td>Daphnia</td>
</tr>
</tbody>
</table>
## Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 203 Fish, Acute Toxicity Test Unknown guidelines</td>
<td>Acute IC50</td>
<td>3 hours</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD 203 Fish, Acute Toxicity Test Unknown guidelines</td>
<td>Acute EC50</td>
<td>48 hours</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>OECD OECD 202 screening OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute EC50</td>
<td>48 hours</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute EC50</td>
<td>48 hours</td>
</tr>
<tr>
<td>LANASET GREY G GR</td>
<td>OECD OECD 202 screening OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute EC50</td>
<td>48 hours</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD OECD 202 screening OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute IC50</td>
<td>3 hours</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 203 Fish, Acute Toxicity Test Unknown guidelines</td>
<td>Acute LC50</td>
<td>96 hours</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute LC0</td>
<td>96 hours</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute LC50</td>
<td>96 hours</td>
</tr>
<tr>
<td>LANASET GREY G GR</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test OECD 209 Activated Sludge, Respiration Inhibition Test Unknown guidelines</td>
<td>Acute LC50</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

### Conclusion/Summary

Toxic to aquatic organisms if run directly to surface waters.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 302C Inherent Biodegradability: Modified MITI Test (II)</td>
<td>28 days</td>
<td>0 %</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 302C Inherent Biodegradability: Modified MITI Test (II)</td>
<td>21 days</td>
<td>0 %</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>22.9 %</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>&lt;60 %</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 302C Inherent Biodegradability: Modified MITI Test (II)</td>
<td>28 days</td>
<td>&lt;5 %</td>
</tr>
<tr>
<td>LANASET GREY G GR</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>0.3 %</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>70 to 80 %</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

**Conclusion/Summary**: Eliminated by adsorption onto effluent treatment sludge. Partially eliminated by adsorption onto effluent treatment sludge.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET GREY G GR</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>2-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

Not available.

**Other adverse effects**

No known significant effects or critical hazards.

**Other ecological information**

- **BOD5**: 25 mgO2/g
- **COD**: 1000 mgO2/g
- **TOC**: 34.4 %
- **Organohalogen content**: 0.28 % Chloro
- **Phosphorus Content**: < 0.1 % as phosphate
- **Nitrogen Content**: 5.7 %
- **Metal Content**: 0.79 % Cobalt as organo-metal complex
  : 2.5 % Chromium as Cr(III) organo-metal complex
Section 13. Disposal considerations

**Disposal methods**: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

**Proper shipping name**

- **DOT**: Environmentally hazardous substance, solid, n.o.s. (METAL COMPLEX DYESTUFF). Marine pollutant
- **TDG**: Environmentally hazardous substance, solid, n.o.s. (METAL COMPLEX DYESTUFF). Marine pollutant
- **IMDG**: Environmentally hazardous substance, solid, n.o.s. (METAL COMPLEX DYESTUFF). Marine pollutant
- **IATA**: Environmentally hazardous substance, solid, n.o.s. (METAL COMPLEX DYESTUFF)

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Marine Pollutant Only regulated in Bulk.</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Only regulated in Bulk. Marine pollutant</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Emergency schedules (EmS) F-A, S-F</td>
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</table>

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Section 14. Transport information

<table>
<thead>
<tr>
<th>IATA Classification</th>
<th>UN3077</th>
<th>9</th>
<th>III</th>
<th>Passenger and Cargo Aircraft</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Quantity limitation:</strong> 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Packaging instructions:</strong> 956</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Cargo Aircraft Only</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Quantity limitation:</strong> 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Packaging instructions:</strong> 956</td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

**Safety, health and environmental regulations specific for the product**

**United States Regulations**

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard

**Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)**

Product name |
---|
Chromium as Cr(III) organo-metal complex | 19.556 |
Cobalt as organo-metal complex | 17.347 |
Chromium as Cr(III) organo-metal complex | 12.277 |
Chromium as Cr(III) organo-metal complex | 2.9755 |
Chromium as Cr(III) organo-metal complex | 1.5346 |
Chromium as Cr(III) organo-metal complex | 1.5346 |

**Clean Air Act - Ozone Depleting Substances (ODS)**

Product name |
---|
Chromium as Cr(III) organo-metal complex | 19.556 |
Cobalt as organo-metal complex | 17.347 |
Chromium as Cr(III) organo-metal complex | 12.277 |
Chromium as Cr(III) organo-metal complex | 2.9755 |
Chromium as Cr(III) organo-metal complex | 1.5346 |
Chromium as Cr(III) organo-metal complex | 1.5346 |

This product does not contain nor is it manufactured with ozone depleting substances.
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CERCLA Hazardous Substance</th>
<th>CERCLA Reportable Quantity (Lbs)</th>
<th>Product Reportable Quantity (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>19.5564</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>17.34717</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>12.27672</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>2.9755</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>1.53459</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>0.3009</td>
<td>Listed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>0.09439</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
</tbody>
</table>

State regulations

PENNSYLVANIA - RTK: Chromium as Cr(III) organo-metal complex, Chromium as Cr(III) organo-metal complex, Chromium as Cr(III) organo-metal complex, Chromium as Cr(III) organo-metal complex, Cobalt as organo-metal complex, Chromium as Cr(III) organo-metal complex, Sodium sulfate, PARAFFIN OILS

California Prop 65: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL: All components are listed or exempted.

WHMIS Classes: Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

Classification system used: Norma ABNT-NBR 14725-2:2012

International lists

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): At least one component is not listed.
Taiwan inventory (CSNN): Not determined.
Section 16. Other information

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not; anyone using the 704 systems to classify chemicals does so at their own risk.

Indicates information that has changed from previously issued version.

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Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

1/2/2014.
Section 16. Other information

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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**SECTION 1. IDENTIFICATION**

<table>
<thead>
<tr>
<th>Product name</th>
<th>:</th>
<th>LANASET® NAVY R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer or supplier’s details</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company name of supplier</td>
<td>:</td>
<td>Huntsman International LLC</td>
</tr>
</tbody>
</table>
| Address                    | : | P.O. Box 4980  
The Woodlands,  
TX    77387  
United States of America |
| Telephone                  | : | Cust ser: (888) 514 4558 |
| E-mail address             | : | MSDS@huntsman.com |
| Emergency telephone        | : | Chemtrec: (800) 424-9300 or (703) 527-3887 |

**Recommended use of the chemical and restrictions on use**

| Recommended use | : | Textile dyes, finishing and impregnating products; including bleaches and other processing aids |

**SECTION 2. HAZARDS IDENTIFICATION**

<table>
<thead>
<tr>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin sensitization</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GHS Label element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard pictograms</td>
</tr>
<tr>
<td>Signal Word</td>
</tr>
</tbody>
</table>
| Hazard Statements | : | H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects. |
| Precautionary Statements | : | Prevention:  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves.  
Response:  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. |
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

<table>
<thead>
<tr>
<th>Hazardous ingredients</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>disodium [4-hydroxy-3-[(2-hydroxy-4-nitrophenyl)azo]naphthalene-1-sulphonato(3-)][1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphtholato(2-)</td>
<td>68541-71-9</td>
<td>13 - 30</td>
</tr>
<tr>
<td>paraffin oils</td>
<td>8012-95-1</td>
<td>1 - 3</td>
</tr>
<tr>
<td>sodium 1-amino-4-[[3,5-bis[[chloroacetyl]amino]methyl]-2,4,6-trimethylyphenyl][amino]-9,10-dihydro-9,10-dioxoanthracene-2-sulphonate</td>
<td>80010-51-1</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice :
Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled :
Move to fresh air.
Keep respiratory tract clear.
If symptoms persist, call a physician.

In case of skin contact :
Wash off immediately with plenty of water for at least 15 minutes.
If symptoms persist, call a physician.
Take off contaminated clothing and shoes immediately.

In case of eye contact :
Flush eyes with water as a precaution.
Remove contact lenses.
If eye irritation persists, consult a specialist.

If swallowed :
Do not induce vomiting without medical advice.
If a person feels unwell or symptoms of skin irritation appear, consult a physician.

Most important symptoms and effects, both acute and delayed :
May cause an allergic skin reaction.
SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: High volume water jet

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: No hazardous combustion products are known

Specific extinguishing methods: No data is available on the product itself.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing dust.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up: Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Advice on safe handling: Avoid formation of respirable particles. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma,
Conditions for safe storage: Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid: No special restrictions on storage with other products.

SECTION 8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.

Hand protection
Material: Neoprene gloves
Break through time: < 1 h

Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Eye wash bottle with pure water
Tightly fitting safety goggles.

Skin and body protection: Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: granules
Color: dark blue
Odor: odorless
Odor Threshold: No data is available on the product itself.

pH: 7.5 - 8, Concentration: 20 g/l
Flash point: No data is available on the product itself.
Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Burning rate : Fire will spread by smoldering or slow decomposition.

Upper explosion limit : No data is available on the product itself.

Lower explosion limit : No data is available on the product itself.

Vapor pressure : No data is available on the product itself.

Relative vapor density : No data is available on the product itself.

Relative density : No data is available on the product itself.

Density : 0.47 g/cm³

Solubility(ies)
Water solubility : 100 g/l (30 °C)

Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Autoignition temperature : > 240 °C

Decomposition temperature : No data is available on the product itself.

Viscosity : None.

Oxidizing properties : None.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : The product is chemically stable.

Possibility of hazardous reactions : Dust may form explosive mixture in air. Stable under normal conditions.

Conditions to avoid : Avoid dust formation.

Hazardous decomposition products : None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of : No data is available on the product itself.
exposure

**Acute toxicity**
Acute oral toxicity - Product: LD50 (Rat): 4,770 mg/kg

**Ingredients:**
paraffin oils:
Acute inhalation toxicity: LC50 (Rat): 2,062 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity: No data available
Acute toxicity (other routes of administration): No data available

**Skin corrosion/irritation**

**Product:**
Remarks: May cause skin irritation and/or dermatitis.

**Serious eye damage/eye irritation**

**Product:**
Remarks: Product dust may be irritating to eyes, skin and respiratory system.

**Respiratory or skin sensitization**

**Product:**
Routes of exposure: Skin
Species: Guinea pig
Assessment: May cause sensitization by skin contact.
Method: OECD Test Guideline 406
Result: Causes sensitization.

Remarks: Causes sensitization.
Assessment: No data available

**Germ cell mutagenicity**

**Ingredients:**
disodium [4-hydroxy-3-[(2-hydroxy-4-nitrophenyl)azo]naphthalene-1-sulphonato(3-)][1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphtholato(2-)]:
Genotoxicity in vitro: Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo: No data available

**Carcinogenicity**
No data available
**Carcinogenicity - Assessment**
- IARC: Group 1: Carcinogenic to humans
- ACGIH: Suspected human carcinogen
- OSHA: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
- NTP: Known to be human carcinogen

**Reproductive toxicity**
- Effects on fertility: No data available
- Effects on fetal development: No data available
- Reproductive toxicity - Assessment: No data available

**STOT-single exposure**
No data available

**STOT-repeated exposure**
No data available

**Repeated dose toxicity**
No data available
- Repeated dose toxicity - Assessment: No data available

**Aspiration toxicity**
No data available

**Experience with human exposure**
- General Information: No data available
- Inhalation: No data available
- Skin contact: No data available
- Eye contact: No data available
Ingestion: No data available

Toxicology, Metabolism, Distribution
No data available

Neurological effects
No data available

Further information
Product: Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxicity to fish - Product: LC50: 17 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 203

Ingredients:
disodium [4-hydroxy-3-[(2-hydroxy-4-nitrophenyl)azo]naphthalene-1-sulphonato(3-)][1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphtholato(2-)]:
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 146 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
  GLP: yes

NOEC (Daphnia magna (Water flea)): 39 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
  GLP: yes

sodium 1-amino-4-[[3,5-bis[[chloroacetyl]amino]methyl]-2,4,6-trimethylphenyl]amino]-9,10-dihydro-9,10-dioxoanthracene-2-sulphonate:
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 100 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
  GLP: yes

Toxicity to algae: No data available

M-Factor (Acute aquatic toxicity): No data available

Toxicity to fish (Chronic toxicity): No data available

Toxicity to daphnia and other aquatic invertebrates: No data available
**Ecotoxicology Assessment**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Acute aquatic toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Toxicity Data on Soil</td>
<td>No data available</td>
</tr>
<tr>
<td>Other organisms relevant to the environment</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Further information:**
No data available

**Persistence and degradability**

- **Biodegradability - Product**: Result: Not readily biodegradable.
  - Biodegradation: 50 - 60 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 302B

- **Biochemical Oxygen Demand (BOD) - Product**: 0 mgO₂/g

- **Chemical Oxygen Demand (COD) - Product**: 530 mgO₂/g

- **BOD/COD**: No data available

- **ThOD**: No data available

- **BOD/ThOD**: No data available

- **Dissolved organic carbon (DOC)**: No data available

- **Physico-chemical removability**: No data available

- **Stability in water**: No data available
Photodegradation: No data available

Impact on Sewage Treatment: No data available

**Bioaccumulative potential**

Bioaccumulation: No data available

**Ingredients:**

disodium [4-hydroxy-3-[(2-hydroxy-4-nitrophenyl)azo]naphthalene-1-sulphonato(3-)][1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphtholato(2-)]

Partition coefficient: n-octanol/water: log Pow: < 3

sodium 1-amino-4-[[3,5-bis[[[chloroacetyl]amino]methyl]-2,4,6-trimethylphenyl]amino]-9,10-dihydro-9,10-dioxoanthracene-2-sulphonate

Partition coefficient: n-octanol/water: log Pow: < 3 (20 °C) Method: No information available.

**Mobility in soil**

Mobility: No data available

Distribution among environmental compartments: No data available

Stability in soil: No data available

**Other adverse effects**

Environmental fate and pathways: No data available

Results of PBT and vPvB assessment: No data available

Endocrine disrupting potential: No data available

Adsorbed organic bound halogens (AOX) - Product: < .1 % Test substance: Chlorine

**Hazardous to the ozone layer**

Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

Global warming potential (GWP): No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA
Not regulated as a dangerous good

IMDG
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

DOT Classification
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

TSCA - 5(a) Significant New Use Rule List of Chemicals: Not relevant

EPCRA - Emergency Planning and Community Right-to-Know

SARA 311/312 Hazards: Acute Health Hazard

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

- disodium [4-hydroxy-3-[(2-hydroxy-4-nitrophenyl)azo]napththalene-1-sulphonato(3-)][1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphtholato(2-)]
  - 68541-71-9
  - 18.3024 %
- sodium bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphtholato(2-)chromate(1-)]
  - 64611-73-0
  - 2.2878 %
- trisodium bis[4-hydroxy-3-[(2-hydroxy-4-nitrophenyl)azo]napthalene-1-sulphonato(3-)chromate(3-)]
  - 68541-70-8
  - 2.2878 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

California Prop 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:
- TSCA: On the inventory, or in compliance with the inventory
- DSL: This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
- AICS: On the inventory, or in compliance with the inventory
- NZIoC: On the inventory, or in compliance with the inventory
- ENCS: On the inventory, or in compliance with the inventory
- ISHL: On the inventory, or in compliance with the inventory
- KECl: On the inventory, or in compliance with the inventory
- PICCS: On the inventory, or in compliance with the inventory
- IECSC: On the inventory, or in compliance with the inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)
SECTION 16. OTHER INFORMATION

Further information

NFPA:

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
<td>2</td>
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</table>

HMIS III:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

Revision Date: 09/29/2015

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Section 1. Identification

GHS product identifier: LANASET® ORANGE RN
Product code: 00041906
Other means of identification: Not available.
Product type: Solid.
Material uses: Textile dye
Supplier's details: Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387
Customer service telephone: (888) 514-4558
E-mail address of person responsible for this SDS: MSDS@huntsman.com
Emergency telephone number (24h/7day): Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture: RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements: Hazard pictograms:

Signal word: Danger
Hazard statements: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Very toxic to aquatic life with long lasting effects.

Precautionary statements: Wear protective gloves: < 1 hour (breakthrough time): butyl or neoprene. In case of inadequate ventilation wear respiratory protection: Recommended: Respiratory protection, filter P3. Avoid release to the environment. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Collect spillage. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. Dispose of contents and container in accordance with all
Section 2. Hazards identification

local, regional, national and international regulations.

Other hazards which do not result in classification: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromate(2-) [(2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)]][3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)], disodium</td>
<td>13 - 30</td>
<td>56819-40-0</td>
</tr>
<tr>
<td>Sodium 4-[(5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenylazo]-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>3 - 7</td>
<td>70247-70-0</td>
</tr>
<tr>
<td>White mineral oil</td>
<td>1 - 3</td>
<td>8042-47-5</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>1 - 3</td>
<td>8012-95-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : Adverse symptoms may include the following: wheezing and breathing difficulties asthma
Skin contact : Adverse symptoms may include the following: irritation redness
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point : Closed cup: Not applicable.

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
halogenated compounds
metal oxide/oxides
## Section 5. Fire-fighting measures

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark**: Not explosive

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

#### For emergency responders
If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up
Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures
Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### Conditions for safe storage, including any incompatibilities
Section 7. Handling and storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
|Chromate(2-),{2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)}[3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)], disodium PARAFFIN OILS|OSHA PEL (United States, 2/2013).  
TWA: 0.5 mg/m³, (as Cr) 8 hours.  
ACGIH TLV (United States, 6/2013).  
TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction  
OSHA PEL (United States, 2/2013).  
TWA: 5 mg/m³ 8 hours.|

**Individual protection measures**

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene.
Section 8. Exposure controls/personal protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P3.

Thermal hazards: Not available.

Section 9. Physical and chemical properties

Appearance

Physical state: Solid. [granules]
Color: Brown.
Odor: Odorless.
Odor threshold: Not applicable.
pH: 6 to 6.5 [Conc. (% w/w): 2%]
Melting point/Freezing point: Not available.
Boiling/condensation point: Not available.
Flash point: Closed cup: Not applicable.
Evaporation rate: Not applicable.
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits: Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Relative density: Not available.
Solubility in water: Not available.
Water Solubility Result: 80 g/l 30 deg C
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: >200°C (>392°F)
Decomposition temperature: Not available.
Ignition Temperature (Deg C): SIT > 450 °ASTM-D1929B

Explosive properties: Not explosive
Oxidizing properties: None.
Density: 0.8 to 0.9 g/cm³ [20°C (68°F)]
Viscosity: Dynamic (room temperature): Not applicable. Kinematic (room temperature): Not applicable.
Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: No specific data.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAFFIN OILS</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>22000 mg/kg</td>
</tr>
<tr>
<td>LANASET ORANGE RN</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET ORANGE RN</td>
<td>-</td>
<td>Rabbit</td>
<td>Eyes - Non-irritant.</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Rabbit</td>
<td>Skin - Non-irritant.</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Non-irritating to the skin.

- Chromate(2-),[2, 4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-[(4, 5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato (3-)][-, disodium]
- Sodium 4-(-(5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulphophenyl)azo)-3-methylpyrazolon-1-yl)-2, 5-dichlorobenzensulfonate
- white mineral oil

Eyes: Non-irritating to the eyes.
Section 11. Toxicological information

Chromate(2-),[2, 4-dihydro-4-[ (2-hydroxy-5-nitrophenyl) azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-[(4, 5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl) azo]-2-hydroxy-5-nitrobenzenesulfonato (3-)], disodium

Sodium 4-{4-{4-((5- (2-Bromo-1-oxo-2-propenyl) amino)-2-sulfophenyl) azo)-3-methylpyrazolon-1-yl}-2, 5-dichlorobenzenesulfonate

white mineral oil

PARAFFIN OILS

Respiratory:

Chromate(2-),[2, 4-dihydro-4-[ (2-hydroxy-5-nitrophenyl) azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-[(4, 5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl) azo]-2-hydroxy-5-nitrobenzenesulfonato (3-)], disodium

Sodium 4-{4-{4-((5- (2-Bromo-1-oxo-2-propenyl) amino)-2-sulfophenyl) azo)-3-methylpyrazolon-1-yl}-2, 5-dichlorobenzenesulfonate

white mineral oil

PARAFFIN OILS

Sensitization

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 4-{4-{4-((5- (2-Bromo-1-oxo-2-propenyl) amino)-2-sulfophenyl) azo)-3-methylpyrazolon-1-yl}-2, 5-dichlorobenzenesulfonate LANASET ORANGE RN</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

Conclusion/Summary:

This dyestuff contains C.I. Reactive Yellow 39 for which cases of respiratory sensitisation have been observed. Care should be taken to avoid inhalation. Consult a physician immediately if symptoms such as shortness of breath or asthma are observed. Should an individual become sensitized a physician should be consulted and all contact with reactive dyes must cease immediately.

Mutagenicity

Not available.

Carcinogenicity

Not available.
Section 11. Toxicological information

Carcinogenic class

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromate(2-).[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]-, disodium</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>white mineral oil</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure: Not available.

Potential acute health effects

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: May cause an allergic skin reaction.
- **Ingestion**: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- **Eye contact**: No specific data.
- **Inhalation**: Adverse symptoms may include the following: wheezing and breathing difficulties, asthma
- **Skin contact**: Adverse symptoms may include the following: irritation, redness
- **Ingestion**: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.
Section 11. Toxicological information

**Long term exposure**
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

**Potential chronic health effects**
- General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity: No known significant effects or critical hazards.
- Mutagenicity: No known significant effects or critical hazards.
- Teratogenicity: No known significant effects or critical hazards.
- Developmental effects: No known significant effects or critical hazards.
- Fertility effects: No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
Not available.

**Other information**: Not available.

Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenylazo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>OECD 202 <em>Daphnia</em> sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>&gt;189 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>Unknown guidelines</td>
<td>Acute LC0</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Acute LC100</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Not known</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>30 mg/l</td>
</tr>
<tr>
<td>LANASET ORANGE RN</td>
<td>OECD 202 <em>Daphnia</em> sp. Acute Immobilisation Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;400 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>&lt;1 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Very toxic to aquatic organisms if run directly to surface waters.

**Persistence and degradability**

### Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>0 %</td>
</tr>
<tr>
<td>LANASET ORANGE RN</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>30 to 40 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary:** Partially eliminated by adsorption onto effluent treatment sludge.

Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET ORANGE RN</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>-3.3</td>
<td></td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

Not available.

**Other adverse effects:** No known significant effects or critical hazards.

**Other ecological information**

- **BOD<sub>5</sub>** : 105 mgO<sub>2</sub>/g
- **COD** : 685 mgO<sub>2</sub>/g
- **TOC** : 26.2 %
- **Organohalogen content** : 0.2 % Chloro
- **Phosphorus Content** : 0 %
- **Nitrogen Content** : 6.7 %
- **Metal Content** : 1 % Chromium as Cr(III) organo-metal complex
### Section 13. Disposal considerations

**Disposal methods**: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

### Section 14. Transport information

#### Proper shipping name

- **DOT**: Environmentally hazardous substance, solid, n.o.s. (AZO DYESTUFF). Marine pollutant
- **TDG**: Environmentally hazardous substance, solid, n.o.s. (AZO DYESTUFF). Marine pollutant
- **IMDG**: Environmentally hazardous substance, solid, n.o.s. (AZO DYESTUFF). Marine pollutant
- **IATA**: Environmentally hazardous substance, solid, n.o.s. (AZO DYESTUFF)

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
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<tbody>
<tr>
<td>DOT Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td>-</td>
<td></td>
</tr>
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<td>TDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td>Emergency schedules (EmS) F-A, S-F</td>
<td></td>
</tr>
</tbody>
</table>
Section 14. Transport information

<table>
<thead>
<tr>
<th>IATA Classification</th>
<th>UN3077</th>
<th>9</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Passenger and Cargo Aircraft</strong></td>
<td>Quantity limitation: 400 kg</td>
<td>Packaging instructions: 956</td>
<td></td>
</tr>
<tr>
<td><strong>Cargo Aircraft Only</strong></td>
<td>Quantity limitation: 400 kg</td>
<td>Packaging instructions: 956</td>
<td></td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

**United States Regulations**

**TSCA 8(b) inventory**

: All components are listed or exempted.

**TSCA 5(a)2 final significant new use rule (SNUR)**

: No ingredients listed.

**TSCA 5(e) substance consent order**

: No ingredients listed.

**TSCA 12(b) export notification**

: No ingredients listed.

**SARA 311/312**

: Immediate (acute) health hazard

**Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)**

: Chromate(2-) [2,4-dihydro-4-[2-hydroxy-5-nitrophenyl]azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-) [3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]-, disodium

: This product does not contain nor is it manufactured with ozone depleting substances.

**Clean Air Act - Ozone Depleting Substances (ODS)**

: Chromate(2-) [2,4-dihydro-4-[2-hydroxy-5-nitrophenyl]azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-) [3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]-, disodium

: 24.99

**SARA 311/312**

: Immediate (acute) health hazard

**Concentration %**

: 24.99

Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CERCLA Hazardous Substance</th>
<th>CERCLA Reportable Quantity (Lbs)</th>
<th>Product Reportable Quantity (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromate(2-), [(2, 4-dihydro-4-[2-hydroxy-5-nitrophenylazo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-[(4, 5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato (3-)]-, disodium</td>
<td>24.99</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
</tbody>
</table>

State regulations

PENNSYLVANIA - RTK: LANACRON ORANGE S-2R CRUDE MILLED, Mixture of hydrocarbons ex petroleum

California Prop 65: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL: All components are listed or exempted.

WHMIS Classes: Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

Classification system used: Norma ABNT-NBR 14725-2:2012

International lists

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.
Section 16. Other information

Hazardous Material Information System (U.S.A.)

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

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Version : 1

Indicates information that has changed from previously issued version.

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

4/29/2014. 00041906
Section 16. Other information

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
SAFETY DATA SHEET
LANASET® RED G GR

Section 1. Identification

GHS product identifier : LANASET® RED G GR
Product code : 00043634
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Textile dye

Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387

Customer service telephone: (888) 514-4558

E-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Signal word : No signal word.
Hazard statements : Harmful to aquatic life with long lasting effects.
Precautionary statements : Avoid release to the environment. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

1/27/2014.
Section 3. Composition/information on ingredients

Substance/mixture : Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>30 - 60</td>
<td>70209-87-9</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3 - 7</td>
<td>67109-27-7</td>
</tr>
<tr>
<td>Formaldehyde reaction products with sulfonated diphenylether derivative, Na salt</td>
<td>1 - 3</td>
<td>90387-57-8</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.
**Section 4. First aid measures**

**Ingestion**: No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

**Section 5. Fire-fighting measures**

**Flash point**: Closed cup: Not applicable.

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- phosphorus oxides
- halogenated compounds
- metal oxide/oxides

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark**: Not explosive

**Section 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Section 6. Accidental release measures

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010). TWA: 0.005 mg/m³, (as Cr) 8 hours.</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010). TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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Section 8. Exposure controls/personal protection

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: Tightly fitting safety goggles.

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P2.

Thermal hazards: Not available.

Section 9. Physical and chemical properties

Appearance
Physical state: Solid. [granules]
Color: Red.
Odor: Odorless.
Odor threshold: Not applicable.
PH: 7 to 8 [Conc. (% w/w): 0.1%]
Melting point/Freezing point: Not available.
Boiling/condensation point: Not available.
Flash point: Closed cup: Not applicable.
Evaporation rate: Not applicable.
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits: Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Relative density: Not available.
Solubility in water: Not available.
Water Solubility Result: 60 g/l 30 deg C
Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : Not available.
Decomposition temperature : >180°C (>356°F)
Ignition Temperature (Deg C) : SIT > 450 °ASTM-D1929B
Explosive properties : Not explosive
Oxidizing properties : None.
Density : 0.466 g/cm³ [20°C (68°F)]
Viscosity : Dynamic (room temperature): Not applicable.
Kinematic (room temperature): Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.
Chemical stability : The product is stable.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid : No specific data.
Incompatible materials : No specific data.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1720 mg/kg</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Not known</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>Not known</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Unknown guidelines</td>
<td>Rabbit</td>
<td>Eyes - Irritant</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Not known</td>
<td>Rabbit</td>
<td>Skin - Non-irritant</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin : Non-irritant. OECD 404 Rabbit
**Section 11. Toxicological information**

Chromium as Cr(III) organo-metal complex
Non-irritating to the skin.

Chromium as Cr(III) organo-metal complex
No additional information.

Formaldehyde reaction products with sulfonated diphenylether derivative, Na salt
No additional information.

**Eyes**
Non-irritant. OECD 405 Rabbit

Chromium as Cr(III) organo-metal complex
Irritating to eyes.

Chromium as Cr(III) organo-metal complex
No additional information.

Formaldehyde reaction products with sulfonated diphenylether derivative, Na salt
No additional information.

**Respiratory**

Chromium as Cr(III) organo-metal complex
No additional information.

Chromium as Cr(III) organo-metal complex
No additional information.

Formaldehyde reaction products with sulfonated diphenylether derivative, Na salt
No additional information.

**Sensitization**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
</tbody>
</table>

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Carcinogenic class**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>1</td>
<td>+</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.
Section 11. Toxicological information

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Not available.

Potential acute health effects

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

**Short term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Long term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

Potential chronic health effects

- **General**: No known significant effects or critical hazards.
- **Carcinogenicity**: No known significant effects or critical hazards.
- **Mutagenicity**: No known significant effects or critical hazards.
- **Teratogenicity**: No known significant effects or critical hazards.
- **Developmental effects**: No known significant effects or critical hazards.
- **Fertility effects**: No known significant effects or critical hazards.

Numerical measures of toxicity

**Acute toxicity estimates**
Not available.
Section 11. Toxicological information

Other information : Not available.

Section 12. Ecological information

### Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>130 mg/l</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>14 mg/l</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>75.3 mg/l</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td>Formaldehyde reaction products with sulfonated diphenylether derivative, Na salt</td>
<td>OECD 201 Alga, Growth Inhibition Test</td>
<td>Acute EC50</td>
<td>72 hours</td>
<td>Algae</td>
<td>17 mg/l</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;100 mg/l</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;100 mg/l</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;100 mg/l</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC0</td>
<td>96 hours</td>
<td>Fish</td>
<td>10 mg/l</td>
</tr>
<tr>
<td>LANASET RED G GR</td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>35 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary** : Harmful to aquatic organisms if run directly to surface waters.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>82 %</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>72 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary** : Eliminated by adsorption onto effluent treatment sludge.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET RED G GR Chromium as Cr(III) organo-metal complex</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

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## Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>5.06</td>
<td>-</td>
<td>high</td>
</tr>
</tbody>
</table>

### Mobility in soil

Not available.

### Other adverse effects

: No known significant effects or critical hazards.

### Other ecological information

<table>
<thead>
<tr>
<th>BOD&lt;sub&gt;5&lt;/sub&gt;</th>
<th>COD</th>
<th>TOC</th>
<th>Organohalogen content</th>
<th>Phosphorus Content</th>
<th>Nitrogen Content</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mgO&lt;sub&gt;2&lt;/sub&gt;/g</td>
<td>665 mgO&lt;sub&gt;2&lt;/sub&gt;/g</td>
<td>21.5 %</td>
<td>0.4 % Chloro</td>
<td>0 %</td>
<td>7.7 %</td>
<td>3 % Chromium as Cr(III) organo-metal complex</td>
</tr>
</tbody>
</table>

## Section 13. Disposal considerations

### Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

## Section 14. Transport information

### Proper shipping name

<table>
<thead>
<tr>
<th>DOT</th>
<th>TDG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>
Section 14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IATA Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory: All components are listed or exempted.
TSCA 5(a)2 final significant new use rule (SNUR): No ingredients listed.
TSCA 5(e) substance consent order: No ingredients listed.
TSCA 12(b) export notification: No ingredients listed.
SARA 311/312: Not classified.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): This product does not contain nor is it manufactured with ozone depleting substances.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>37.138</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>6.567</td>
</tr>
</tbody>
</table>

Clean Air Act - Ozone Depleting Substances (ODS): This product does not contain nor is it manufactured with ozone depleting substances.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>37.138</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>6.567</td>
</tr>
</tbody>
</table>

Section 304 CERCLA Hazardous Substance Reportable Quantity (Lbs)

Ingredient name %  Section 304 CERCLA Hazardous Substance Reportable Quantity (Lbs)

CERCLA Hazardous substances:

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## Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Listed</td>
<td>No RQ</td>
<td>37.1379</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Listed</td>
<td>No RQ</td>
<td>6.567</td>
</tr>
<tr>
<td>Triphosphoric acid, pentasodium salt;</td>
<td>Listed</td>
<td>5000</td>
<td>1.4103</td>
</tr>
<tr>
<td>Triphosphoric acid, sodium salt (1:5);</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium phosphate; Pentasodium tripolyphosphate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**State regulations**

**PENNSYLVANIA - RTK**
- Chromium as Cr(III) organo-metal complex, Triphosphoric acid, pentasodium salt; Triphosphoric acid, sodium salt (1:5); Sodium phosphate; Pentasodium tripolyphosphate, Sodium sulfate, Chromium as Cr(III) organo-metal complex

**California Prop 65**
- **WARNING**: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Canadian regulations**

**CEPA DSL**
- All components are listed or exempted.

**WHMIS Classes**
- Not controlled under WHMIS (Canada).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**Brazil Regulations**

**Classification system used**
- Norma ABNT-NBR 14725-2:2012

**International lists**

- **Australia inventory (AICS)**: All components are listed or exempted.
- **China inventory (IECSC)**: All components are listed or exempted.
- **Japan inventory**: All components are listed or exempted.
- **Korea inventory**: All components are listed or exempted.
- **Malaysia inventory (EHS Register)**: Not determined.
- **New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
- **Philippines inventory (PICCS)**: Not determined.
- **Taiwan inventory (CSNN)**: Not determined.
Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

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Version : 2

Indicates information that has changed from previously issued version.

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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Section 16. Other information

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
SECTION 1. IDENTIFICATION

Product name: LANASET® BLUE 2R

Manufacturer or supplier’s details
Company name of supplier: Huntsman International LLC
Address: P.O. Box 4980
The Woodlands, TX 77387
United States of America
Telephone: Cust ser: (888) 514 4558
E-mail address of person responsible for the SDS: MSDS@huntsman.com
Emergency telephone: Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use
Recommended use: Textile dyes, finishing and impregnating products; including bleaches and other processing aids

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Skin sensitization: Category 1
Acute aquatic toxicity: Category 3
Chronic aquatic toxicity: Category 3

GHS Label element
Hazard pictograms:

Signal Word: Warning
Hazard Statements: H317 May cause an allergic skin reaction. H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements: Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P272 Contaminated work clothing must not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P363 Wash contaminated clothing before reuse. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

**Disposal:**
P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards**
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture:** Mixture

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Anthracenesulfonic acid, 1-amino-4-[3,5-bis[[2-chloroacetyl]amino]methyl]-2,4,6-trimethyl[phenyl]amino]-9,10-dihydro-9,10-dioxo-9,10-dioxa-1H-pyrazol-3-ona</td>
<td>80010-51-1</td>
<td>30 - 60</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

**General advice:** Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.

**If inhaled:**
Move to fresh air. Keep respiratory tract clear. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician. If unconscious place in recovery position and seek medical advice.

**In case of skin contact:**
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

**In case of eye contact:**
Flush eyes with water as a precaution. Remove contact lenses. If eye irritation persists, consult a specialist.

**If swallowed:**
Do NOT induce vomiting. If a person feels unwell or symptoms of skin irritation appear,
consult a physician. 
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: May cause an allergic skin reaction.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: High volume water jet

Specific hazards during fire fighting: No data is available on the product itself.

Hazardous combustion products: No hazardous combustion products are known

No data is available on the product itself.

Specific extinguishing methods: No data is available on the product itself.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation.

Avoid breathing dust.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up: Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE
Advice on protection against fire and explosion: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Advice on safe handling: Avoid formation of respirable particles. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid: No hazardous decomposition products are known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters: Contains no substances with occupational exposure limit values.

Personal protective equipment:
Respiratory protection: P2 filter

Respiratory protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection:
Material: Neoprene gloves
Break through time: < 1 h

Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection: Eye wash bottle with pure water
Tightly fitting safety goggles.

Skin and body protection: Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: powder
Color: dark blue
Odor: odorless
Odor Threshold: No data is available on the product itself.
pH: 7 - 7.5, Concentration: 20 g/l
Flash point: No data is available on the product itself.
Evaporation rate: No data is available on the product itself.
Flammability (solid, gas): No data is available on the product itself.
Burning rate: Product resists ignition and does not promote flame spread.
Upper explosion limit: No data is available on the product itself.
Lower explosion limit: No data is available on the product itself.
Vapor pressure: No data is available on the product itself.
Relative vapor density: No data is available on the product itself.
Relative density: No data is available on the product itself.
Density: 0.578 g/cm³
Solubility(ies)
   Water solubility: 100 g/l (30 °C)
Solubility in other solvents: No data is available on the product itself.
Partition coefficient: n-octanol/water: No data is available on the product itself.
Autoignition temperature: No data is available on the product itself.
Decomposition temperature : > 200 °C
Viscosity : No data is available on the product itself.
Oxidizing properties : None.
Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.
Impact sensitivity : Not impact sensitive.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : No decomposition if stored and applied as directed.
Possibility of hazardous reactions : None known.
Stable under normal conditions.

No decomposition if stored and applied as directed.
Dust may form explosive mixture in air.
Conditions to avoid : None.

No data available
Hazardous decomposition products : Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity
Acute oral toxicity - Product : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : No data available
Acute dermal toxicity : No data available
Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation
Product: Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation
Product: Remarks: Product dust may be irritating to eyes, skin and respiratory system.
**Respiratory or skin sensitization**

**Product:**
Routes of exposure: Skin  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: Causes sensitization.

Remarks: Causes sensitization.

Assessment: No data available

**Germ cell mutagenicity**
Genotoxicity in vitro: No data available  
Genotoxicity in vivo: No data available

**Carcinogenicity**
No data available

Carcinogenicity - Assessment: No data available

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**OSHA**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**
Effects on fertility: No data available  
Effects on fetal development: No data available  
Reproductive toxicity - Assessment: No data available

**STOT-single exposure**
No data available
STOT-repeated exposure
No data available

Repeated dose toxicity
No data available

Repeated dose toxicity - Assessment
No data available

Aspiration toxicity
No data available

Experience with human exposure
General Information: No data available

Inhalation: No data available
Skin contact: No data available
Eye contact: No data available
Ingestion: No data available

Toxicology, Metabolism, Distribution
No data available

Neurological effects
No data available

Further information

Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxicity to fish - Product: LC0: 30 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50: 68 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other: EC50 (Daphnia magna (Water flea)): > 100 mg/l
aquatic invertebrates - Product Exposure time: 48 h Method: OECD Test Guideline 202

Toxicity to algae : No data available

M-Factor (Acute aquatic toxicity) : No data available

Toxicity to fish (Chronic toxicity) : No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : No data available

M-Factor (Chronic aquatic toxicity) : No data available

Toxicity to bacteria - Product IC50: > 400 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment
Acute aquatic toxicity : No data available
Chronic aquatic toxicity : No data available
Toxicity Data on Soil : No data available
Other organisms relevant to the environment : No data available

Further information: No data available

Persistence and degradability

Biochemical Oxygen Demand (BOD) - Product : 20 mgO2/g

Chemical Oxygen Demand (COD) - Product : 1230 mgO2/g
BOD/COD : No data available
ThOD : No data available
BOD/ThOD : No data available
Dissolved organic carbon (DOC) : No data available
Physico-chemical removability : No data available
Stability in water : No data available
Photodegradation : No data available
Impact on Sewage Treatment : No data available

Bioaccumulative potential
Bioaccumulation : No data available

**Ingredients:**
2-Anthracenesulfonic acid, 1-amino-4-[[3,5-bis[[2-chloroacetyl]amino]methyl]-2,4,6-trimethylphenyl]amino]-9,10-dihydro-9,10-dioxo-
Partition coefficient: \( \text{log Pow} < 3 \) (20 °C)
Method: No information available.

Chromate(2-), [4-2-[5-chloro-2-(hydroxy- kappao.O)-3-nitrophenyl]diazenyl-kappa.N1]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onat:
Partition coefficient: \( \text{log Pow} < 3 \) (20 °C)
Method: No information available.

**Mobility in soil**
Mobility : No data available
Distribution among environmental compartments : No data available
Stability in soil : No data available

**Other adverse effects**
Environmental fate and pathways : No data available
Results of PBT and vPvB assessment : No data available
Endocrine disrupting potential : No data available
Adsorbed organic bound halogens (AOX) - Product : 7.3 % Test substance: Chlorine
Hazardous to the ozone layer
Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

Additional ecological information - Product:
- An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
- Harmful to aquatic life with long lasting effects.

Global warming potential (GWP):
- No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues:
- The product should not be allowed to enter drains, water courses or the soil.
- Do not contaminate ponds, waterways or ditches with chemical or used container.
- Send to a licensed waste management company.

Contaminated packaging:
- Empty remaining contents.
- Dispose of as unused product.
- Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA
- Not regulated as a dangerous good

IMDG
- Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Not applicable for product as supplied.

Domestic regulation

DOT Classification
- Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION
TSCA - 5(a) Significant New Use Rule List of Chemicals

Use Rule List of Chemicals

Not relevant

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM TRIPOLYPHOSPHATE</td>
<td>7758-29-4</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards

Acute Health Hazard
No SARA Hazards

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 61.
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC’s (40 CFR 60.489).

Pennsylvania Right To Know

2-Anthracenesulfonic acid, 1-amino-4-[[3,5-bis[[2-chloroacetyl]amino]methyl]-2,4,6-trimethylphenyl]amino]-9,10-dihydro-9,10-dioxo- 80010-51-1 50 - 70 %
Dextrin 9004-53-9 20 - 30 %
Water 7732-18-5 5 - 10 %
Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt 9084-06-4 5 - 10 %
Triphosphoric acid, sodium salt (1:5) 7758-29-4 1 - 5 %

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.
Quinoline 91-22-5
Paraffin oil 8012-95-1
Formaldehyde 50-00-0
Distillates (petroleum), hydrotreated heavy paraffinic 64742-54-7

The ingredients of this product are reported in the following inventories:

TSCA : On the inventory, or in compliance with the inventory

DSL : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

AICS : LANASET® YELLOW 4GN

On the inventory, or in compliance with the inventory
SECTION 16. OTHER INFORMATION

Further information

NFPA:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS III:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

Revision Date: 07/07/2015

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE. THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.
NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
SAFETY DATA SHEET
LANASET® BLUE 5G

1. Product and company identification

Product name: LANASET® BLUE 5G
Material uses: Textile dye
Chemical family: Anthraquinone dye preparation
MSDS #: 00041694
Validation date: 6/10/2013.

Supplier/Manufacturer: Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387
Customer service telephone: (888) 514-4558

E-mail address of person responsible for this SDS: MSDS@huntsman.com

In case of emergency (24h/7day): Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

Physical state: Solid. [Powder]
Odor: Odorless.
Color: Blue.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture:
- SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
- AQUATIC TOXICITY (CHRONIC) - Category 2

GHS label elements:

Hazard pictograms:

Signal word: Warning

Hazard statements:
- Causes serious eye irritation.
- Toxic to aquatic life with long lasting effects.

Precautionary statements:
- Wear eye or face protection: Recommended: Tightly fitting safety goggles. Avoid release to the environment. Wash hands thoroughly after handling. Collect spillage. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification: None known.

6/10/2013.
00041694
1/12
Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [(Chloroacetyl)amino]methyl[4-[[4-(cyclohexylamino)-9,10-dihydro-9,10-dioxo-1-anthracenyl]amino]phenoxy]methylbenzenesulfonic acid</td>
<td>60 - 100</td>
<td>72391-24-3</td>
</tr>
<tr>
<td>Cumene-4-sulfonic acid sodium salt</td>
<td>7 - 13</td>
<td>28348-53-0</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Notes to physician: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point: Closed cup: Not applicable.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, halogenated compounds, metal oxide/oxides.

Extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

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Section 5. Fire-fighting measures

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Not explosive

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Section 7. Handling and storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Appropriate engineering controls: No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: Tightly fitting safety goggles

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P1
# Section 9. Physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid. [Powder]</td>
</tr>
<tr>
<td>Color</td>
<td>Blue.</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>pH</td>
<td>8 to 8.6 [Conc. (% w/w): 2%]</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>65 g/l</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;180°C (&gt;356°F)</td>
</tr>
<tr>
<td>Ignition Temperature (Deg C): SIT &gt; 450 °ASTM-D1929B</td>
<td>440 °C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Dynamic (room temperature): Not applicable.</td>
</tr>
<tr>
<td></td>
<td>Kinematic (room temperature): Not applicable.</td>
</tr>
</tbody>
</table>

# Section 10. Stability and reactivity

**Reactivity**

- No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**

- The product is stable.

**Possibility of hazardous reactions**

- Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid**

- No specific data.

**Incompatible materials**

- No specific data.

**Hazardous decomposition products**

- Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [[(Chloroacetyl) amino]methyl]4-[4-(cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl amino]phenoxy] methylbenzenesulfonic acid Cumene-4-sulfonic acid sodium salt</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>Cumene-4-sulfonic acid sodium salt</td>
<td>-</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>LANASET BLUE 5G</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;7000 mg/kg</td>
</tr>
<tr>
<td>LANASET BLUE 5G</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET BLUE 5G</td>
<td>-</td>
<td>Rabbit</td>
<td>Skin - Non-irritant.</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Non-irritating to the skin.

Eyes: Irritating to eyes. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Respiratory: No known significant effects or critical hazards.

Sensitization

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Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [[(Chloroacetyl) amino]methyl][4-[[4-(cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl] amino]phenoxy] methylbenzenesulfonic acid</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Lanaset Blue 5G</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Cumene-4-sulfonic acid sodium salt</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
</tbody>
</table>

Potential acute health effects

**Eye contact**: Causes serious eye irritation.

**Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact**: No known significant effects or critical hazards.

**Ingestion**: Irritating to mouth, throat and stomach.

Potential chronic health effects

**General**: No known significant effects or critical hazards.

**Carcinogenicity**: No known significant effects or critical hazards.

**Mutagenicity**: No known significant effects or critical hazards.

**Teratogenicity**: No known significant effects or critical hazards.

**Developmental effects**: No known significant effects or critical hazards.

**Fertility effects**: No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [[(Chloroacetyl) amino]methyl][4-[[4-(cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl] amino]phenoxy] methylbenzenesulfonic acid</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>&gt;78 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;300 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>48 hours</td>
<td>Fish</td>
<td>1.3 mg/l</td>
</tr>
<tr>
<td></td>
<td>DIN DIN 38412 Part 8</td>
<td>Acute IC50</td>
<td>48 hours</td>
<td>Bacteria</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>DIN DIN 38412 (Lumistox test)</td>
<td>Acute LC0</td>
<td>48 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Chronic EC50</td>
<td>21 days</td>
<td>Daphnia</td>
<td>154 mg/l</td>
</tr>
<tr>
<td></td>
<td>Not known</td>
<td>Chronic NOEC</td>
<td>21 days</td>
<td>Daphnia</td>
<td>&gt;30 mg/l</td>
</tr>
</tbody>
</table>

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LANASET® BLUE 5G

Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [(Chloroacetyl) amino]methyl][4-[(4- (cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl) amino]phenoxy] methylbenzenesulfonic acid</td>
<td>OECD 303A Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units</td>
<td>28 days</td>
<td>40 %</td>
</tr>
<tr>
<td>LANASET BLUE 5G</td>
<td>OECD 303A Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units</td>
<td>28 days</td>
<td>40 to 50 %</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Partially eliminated by adsorption onto effluent treatment sludge. Cumene-4-sulfonic acid sodium salt eliminated by biodegradation.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET BLUE 5G</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Sodium [(Chloroacetyl) amino]methyl][4-[(4- (cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl) amino]phenoxy] methylbenzenesulfonic acid</td>
<td>&lt;3</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP &lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [(Chloroacetyl) amino]methyl][4-[(4- (cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl) amino]phenoxy] methylbenzenesulfonic acid</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Other adverse effects: No known significant effects or critical hazards.

Other ecological information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5</td>
<td>0 mgO2/g</td>
</tr>
<tr>
<td>COD</td>
<td>1100 mgO2/g</td>
</tr>
<tr>
<td>TOC</td>
<td>37.5 %</td>
</tr>
<tr>
<td>Organohalogen content</td>
<td>3.7 % Chloro</td>
</tr>
<tr>
<td>Phosphorus Content</td>
<td>0 %</td>
</tr>
<tr>
<td>Nitrogen Content</td>
<td>0.00295 %</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Toxic to aquatic organisms if run directly to surface waters.

Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium [(Chloroacetyl) amino]methyl][4-[(4- (cyclohexylamino)-9, 10-dihydro-9, 10-dioxo-1-anthracenyl) amino]phenoxy] methylbenzenesulfonic acid</td>
<td>OECD 302 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50 48 hours Daphnia &gt;78 mg/l</td>
<td></td>
</tr>
<tr>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute IC50 3 hours Bacteria &gt;300 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50 48 hours Fish 4.4 mg/l</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary: Toxic to aquatic organisms if run directly to surface waters.
Section 12. Ecological information

: Metal content under the ETAD recommended limits.

Section 13. Disposal considerations

**Disposal methods**

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

**Proper shipping name**

**DOT** : Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF). Marine pollutant

**TDG** : Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF) Marine pollutant

**IMDG** : Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF) Marine pollutant

**IATA** : Environmentally hazardous substance, solid, n.o.s. (ANTHRAQUINONE DYESTUFF)

---

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
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<tr>
<td>DOT Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Only regulated in Bulk. Marine Pollutant</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Only regulated in Bulk. Marine Pollutant</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Emergency schedules (EmS) F-A, S-F</td>
</tr>
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</table>

6/10/2013. 00041694
Section 14. Transport information

<table>
<thead>
<tr>
<th>IATA Classification</th>
<th>UN3077</th>
<th>9</th>
<th>III</th>
<th>Passenger and Cargo Aircraft</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quantity limitation: 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 956</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Cargo Aircraft Only</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quantity limitation: 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 956</td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

United States

- **U.S. Federal regulations**
  - TSCA 8(b) inventory: All components are listed or exempted.
  - TSCA 5(a)2 final significant new use rule (SNUR): No ingredients listed.
  - TSCA 5(e) substance consent order: No ingredients listed.
  - TSCA 12(b) export notification: No ingredients listed.
  - SARA 311/312: Immediate (acute) health hazard
  - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)
    - Clean Air Act - Ozone Depleting Substances (ODS): This product does not contain nor is it manufactured with ozone depleting substances.
  - SARA 313: No ingredients listed.
  - CERCLA Hazardous substances: No ingredients listed.

State regulations

- **Pennsylvania - RTK**: No ingredients listed.

California

- **Prop 65**: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

International regulations

- **Canada**
  - CEPA DSL: All components are listed or exempted.

- **WHMIS Classes**
  - Class D-2B: Material causing other toxic effects (Toxic).
Section 15. Regulatory information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**Brazil**
**Regulation**: Decreto Federal n.º 2657 de 3 de novembro de 1998

**International lists**
- **Australia inventory (AICS)**: All components are listed or exempted.
- **China inventory (IECSC)**: All components are listed or exempted.
- **Japan inventory**: Not determined.
- **Korea inventory**: All components are listed or exempted.
- **Malaysia Inventory (EHS Register)**: Not determined.
- **New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
- **Philippines inventory (PICCS)**: All components are listed or exempted.
- **Taiwan inventory (CSNN)**: Not determined.

Section 16. Other information

<table>
<thead>
<tr>
<th>Hazardous Material Information System (U.S.A.)</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

**National Fire Protection Association (U.S.A.)**

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

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**Date of issue**: 6/10/2013.
**Date of previous issue**: No previous validation.
**Version**: 1

- Indicates information that has changed from previously issued version.
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SAFETY DATA SHEET
LANASET® BORDEAUX B

Section 1. Identification

GHS product identifier : LANASET® BORDEAUX B
Product code : 00041718
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Textile dye

Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387
Customer service telephone: (888) 514-4558

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3.1%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.1%

GHS label elements

Hazard pictograms : 

Signal word : Warning
Hazard statements : May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.
Section 2. Hazards identification

Precautionary statements: Wear protective gloves: < 1 hour (breakthrough time): butyl or neoprene. Avoid release to the environment. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Collect spillage. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>30 - 60</td>
<td>ACCN # 130519</td>
</tr>
<tr>
<td>Disodium 5,5’-[(1-methylhexylidene)bis(4,1-phenyleneoxy) sulphonyl-2,1-phenyleneazo)]bis[6-amino-4-hydroxy-1-naphthalene-2-sulphonate]</td>
<td>3 - 7</td>
<td>52333-30-9</td>
</tr>
<tr>
<td>Sodium 2-[methyl oleoylamino]ethane-1-sulphonate</td>
<td>3 - 7</td>
<td>137-20-2</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Described necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

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Section 4. First aid measures

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
- irritation
- redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point : Closed cup: Not applicable.

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- phosphorus oxides
- metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Section 5. Fire-fighting measures

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark: Not explosive

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling:

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Section 8. Exposure controls/personal protection

Control parameters

**Appropriate engineering controls**
- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls**
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

**Hygiene measures**
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Hand protection**
- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene

**Body protection**
- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**
- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**
- Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P2

**Thermal hazards**
- Not available.

Section 9. Physical and chemical properties

**Appearance**

- **Physical state**: Solid. [granules]
- **Color**: Dark red
- **Odor**: Odorless.
- **Odor threshold**: Not applicable.
- **pH**: 7.5 to 8 [Conc. (% w/w): 2%]
- **Melting point/Freezing point**: Not available.
### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling/condensation point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility in water</td>
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</tr>
<tr>
<td>Water Solubility Result</td>
<td>20 g/l</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;200°C (&gt;392°F)</td>
</tr>
<tr>
<td>Ignition Temperature (Deg C) : SIT &gt; 450 °ASTM-D1929B</td>
<td>450 °C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None</td>
</tr>
<tr>
<td>Density</td>
<td>0.74 g/cm³ [20°C (68°F)]</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Dynamic (room temperature): Not applicable. Kinematic (room temperature): Not applicable.</td>
</tr>
<tr>
<td>Water Solubility Result</td>
<td>30 deg C</td>
</tr>
</tbody>
</table>

### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex Disodium 5,5’-[ (1-methylethylidene)bis(4, 1-phenyleneoxysulphonyl-2, 1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]</td>
<td>Unknown guidelines Not known Unknown guidelines Not known</td>
<td>LD50 Oral LD50 Oral</td>
<td>Rat Rat</td>
<td>&gt;2000 mg/kg &gt;4000 mg/kg</td>
</tr>
<tr>
<td>LANASET BORDEAUX B -</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 2-[methyloleoylamino] ethane-1-sulphonate</td>
<td>No additional information.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin : Non-irritant. OECD 404
Chromium as Cr(III) organo-metal complex
Disodium 5,5’-[ (1-methylethylidene)bis(4, 1-phenyleneoxysulphonyl-2, 1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]
Sodium 2-[methyloleoylamino] ethane-1-sulphonate
No additional information.

Eyes : Non-irritant. OECD 405
Chromium as Cr(III) organo-metal complex
Disodium 5,5’-[ (1-methylethylidene)bis(4, 1-phenyleneoxysulphonyl-2, 1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]
Sodium 2-[methyloleoylamino] ethane-1-sulphonate
No additional information.

Respiratory : No additional information.
Chromium as Cr(III) organo-metal complex
Disodium 5,5’-[ (1-methylethylidene)bis(4, 1-phenyleneoxysulphonyl-2, 1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]
Sodium 2-[methyloleoylamino] ethane-1-sulphonate
No additional information.
Section 11. Toxicological information

**Sensitization**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Disodium 5,5'-(1-methylethylidene)bis(4,1-phenyleneoxysulphonyl-2,1-phenyleneazo))bis [6-amino-4-hydroxyraphthalene-2-sulphonate]</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>LANASET BORDEAUX B</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

**Mutagenicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Subject: Bacteria Experiment: In vitro Subject: Mammalian-Animal</td>
<td>Positive Negative</td>
</tr>
</tbody>
</table>

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

Not available.

**Potential acute health effects**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: May cause an allergic skin reaction.
- **Ingestion**: No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
Section 11. Toxicological information

**Skin contact**: Adverse symptoms may include the following: irritation redness.

**Ingestion**: No specific data.

**Potential chronic health effects**

**General**: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity**: No known significant effects or critical hazards.

**Mutagenicity**: No known significant effects or critical hazards.

**Teratogenicity**: No known significant effects or critical hazards.

**Developmental effects**: No known significant effects or critical hazards.

**Fertility effects**: No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

Not available.

**Other information**: Not available.

Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
</tr>
<tr>
<td></td>
<td>No official guidelines Internal Method (BST)</td>
<td>Acute</td>
<td>IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute</td>
<td>LC50</td>
<td>48 hours</td>
<td>Fish</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
</tr>
</tbody>
</table>

Disodium 5,5’-[1-methylethylidene]bis(4-1-phenyleoxyxysulphonyl-2,1-phenyleneazo)]bis[5-amino-4-hydroxyphenalen-2-sulphonate]
Section 12. Ecological information

<table>
<thead>
<tr>
<th>LANASET BORDEAUX B</th>
<th>OECD 209 Activated Sludge, Respiration Inhibition Test</th>
<th>Acute IC50 3 hours Bacteria &gt;320 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50 48 hours Daphnia 7 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute IC50 3 hours Bacteria &gt;300 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50 48 hours Fish 18 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

Toxic to aquatic organisms if run directly to surface waters.

**Persistence and degradability**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OECD 301A Ready Biodegradability - DOC Die-Away Test</td>
<td>28 days</td>
<td>&lt;2 %</td>
</tr>
<tr>
<td>Disodium 5,5'-[(1-methylethylidene)bis(4,1-phenyleneoxysulphonyl-2,1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]</td>
<td>OECD 302C Inherent Biodegradability: Modified MITI Test (II)</td>
<td>28 days</td>
<td>0 %</td>
</tr>
<tr>
<td>LANASET BORDEAUX B</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>30 to 40 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

Partially eliminated by adsorption onto effluent treatment sludge.

Poorly eliminated by biodegradation

Disodium 5,5’-[(1-methylethylidene)bis(4,1-phenyleneoxysulphonyl-2,1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]

**Aquatic half-life**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Disodium 5,5’-[(1-methylethylidene)bis(4,1-phenyleneoxysulphonyl-2,1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Disodium 5,5’-[(1-methylethylidene)bis(4,1-phenyleneoxysulphonyl-2,1-phenyleneazo)]bis [6-amino-4-hydroxynaphthalene-2-sulphonate]</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

Not available.

1/7/2014.

00041718
Section 12. Ecological information

Other adverse effects: No known significant effects or critical hazards.

Other ecological information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5</td>
<td>210 mgO2/g</td>
</tr>
<tr>
<td>COD</td>
<td>1150 mgO2/g</td>
</tr>
<tr>
<td>TOC</td>
<td>39.5 %</td>
</tr>
<tr>
<td>Organohalogen content</td>
<td>0.02 % Chloro</td>
</tr>
<tr>
<td>Phosphorus Content</td>
<td>0 %</td>
</tr>
<tr>
<td>Nitrogen Content</td>
<td>7 %</td>
</tr>
<tr>
<td>Metal Content</td>
<td>1.8 % Chromium as Cr(III) organo-metal complex</td>
</tr>
<tr>
<td></td>
<td>0.2 % Cobalt as organo-metal complex</td>
</tr>
</tbody>
</table>

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

DOT: Environmentally hazardous substance, solid, n.o.s. (AZO METAL COMPLEX DYESTUFF) (Chromium as Cr(III) organo-metal complex). Marine pollutant

TDG: Environmentally hazardous substance, solid, n.o.s. (AZO METAL COMPLEX DYESTUFF) (Chromium as Cr(III) organo-metal complex). Marine pollutant

IMDG: Environmentally hazardous substance, solid, n.o.s. (AZO METAL COMPLEX DYESTUFF). Marine pollutant

IATA: Environmentally hazardous substance, solid, n.o.s. (AZO METAL COMPLEX DYESTUFF)
### Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>UN3077</th>
<th>9</th>
<th>III</th>
<th>Marine Pollutant Only regulated in Bulk.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td>-</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td>Emergency schedules (EmS) F-A, S-F</td>
</tr>
<tr>
<td>IATA Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td>Passenger and Cargo Aircraft Only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quantity limitation: 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 956</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cargo Aircraft Only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Quantity limitation: 400 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Packaging instructions: 956</td>
</tr>
</tbody>
</table>

PG* : Packing group

### Section 15. Regulatory information

**Safety, health and environmental regulations specific for the product**

**United States Regulations**

- **TSCA 8(b) inventory**: All components are listed or exempted.
- **TSCA 5(a)2 final significant new use rule (SNUR)**: No ingredients listed.
- **TSCA 5(e) substance consent order**: No ingredients listed.
- **TSCA 12(b) export notification**: No ingredients listed.
- **SARA 311/312**: Immediate (acute) health hazard
Section 15. Regulatory information

### Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)
- Product name: Chromium as Cr(III) organo-metal complex
  - Concentration %: 46.34
- Product name: Cobalt as organo-metal complex
  - Concentration %: 6.6924

### Clean Air Act - Ozone Depleting Substances (ODS)
- Product name: Chromium as Cr(III) organo-metal complex
  - Concentration %: 46.34

### SARA 313 Form R - Reporting requirements
- Product name: Chromium as Cr(III) organo-metal complex
  - Concentration %: 46.34

### CERCLA Hazardous substances

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>Section 304 CERCLA Hazardous Substance</th>
<th>CERCLA Reportable Quantity (Lbs)</th>
<th>Product Reportable Quantity (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>46.34</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>6.6924</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Triphosphoric acid, pentasodium salt; Triphosphoric acid, sodium salt (1:5); Sodium phosphate; Pentasodium tripolyphosphate</td>
<td>4.0986</td>
<td>Listed</td>
<td>5000</td>
<td>121993</td>
</tr>
</tbody>
</table>

### State regulations
- **Pennsylvania - RTK**
  - Product name: Chromium as Cr(III) organo-metal complex, Triphosphoric acid, pentasodium salt; Triphosphoric acid, sodium salt (1:5); Sodium phosphate; Pentasodium tripolyphosphate, Sodium sulfate, Cobalt as organo-metal complex

### California Prop 65
- Product name: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

### Canadian regulations
- **CEPA DSL**
  - All components are listed or exempted.

### WHMIS Classes
- Class D-2B: Material causing other toxic effects (Toxic).
  - This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### Brazilian Regulations
- **Classification system used**
  - Norma ABNT-NBR 14725-2:2012
Section 15. Regulatory information

International lists:
- Australia inventory (AICS): All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.
- Japan inventory: All components are listed or exempted.
- Korea inventory: All components are listed or exempted.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
- Philippines inventory (PICCS): All components are listed or exempted.
- Taiwan inventory (CSNN): Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.):
- Health: 2
- Flammability: 0
- Physical hazards: 0
- Personal protection: X

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.):
- Health: 2
- Flammability: 0
- Instability: 0
- Special: 

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Date of previous issue: 04/13/2009
Version: 1

Indicates information that has changed from previously issued version.

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Notice to reader
Section 16. Other information

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HERELN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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SAFETY DATA SHEET
LANASET® RED 2B

Section 1. Identification

GHS product identifier : LANASET® RED 2B
Product code : 00041721
Other means of identification : Not available.
Product type : Solid.
Material uses : Textile dye
Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387

Customer service telephone: (888) 514-4558

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements : 
Hazard pictograms : 
Signal word : No signal word.
Hazard statements : Toxic to aquatic life with long lasting effects.
Precautionary statements : Avoid release to the environment. Collect spillage. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

9/24/2014. 00041721 1/14
Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>13 - 30</td>
<td>72017-66-4</td>
</tr>
<tr>
<td>2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>7 - 13</td>
<td>36290-04-7</td>
</tr>
<tr>
<td>Sodium 2-[methylolerylamino]ethane-1-sulphonate</td>
<td>1 - 3</td>
<td>137-20-2</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects:

Eye contact: No known significant effects or critical hazards.

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms:

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.
Section 4. First aid measures

Ingestion : No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician** : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Flash point** : Closed cup: Not applicable.

**Extinguishing media**

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials: carbon dioxide Carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark** : Not explosive

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions :
Section 6. Accidental release measures

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up:
- Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling:
- Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene:
- Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities:
- Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters:

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>OSHA PEL (United States, 2/2013). TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls:
- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls:
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures
Section 8. Exposure controls/personal protection

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: Tightly fitting safety goggles.

**Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene.

**Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P2.

**Thermal hazards**: Not available.

Section 9. Physical and chemical properties

**Appearance**
- **Physical state**: Solid. [Powder]
- **Color**: Red.
- **Odor**: Odorless.
- **Odor threshold**: Not applicable.
- **pH**: 6 to 8 [Conc. (% w/w): 2%]

**Melting point/Freezing point**: Not available.

**Boiling/condensation point**: Not available.

**Flash point**: Closed cup: Not applicable.

**Evaporation rate**: Not applicable.

**Flammability (solid, gas)**: Not available.

**Lower and upper explosive (flammable) limits**: Not available.

**Vapor pressure**: Not available.

**Vapor density**: Not available.

**Relative density**: Not available.

**Solubility in water**: Soluble.
Section 9. Physical and chemical properties

- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: >200°C (>392°F)
- **Ignition Temperature (Deg C): SIT > 450 °ASTM-D1929B**: 400 °C
- **Explosive properties**: Not explosive
- **Oxidizing properties**: None.
- **Density**: 0.4 to 0.5 g/cm³ [20°C (68°F)]
- **Viscosity**: Dynamic (room temperature): Not applicable. Kinematic (room temperature): Not applicable.

Section 10. Stability and reactivity

- **Reactivity**: No specific test data related to reactivity available for this product or its ingredients.
- **Chemical stability**: The product is stable.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.
- **Conditions to avoid**: No specific data.
- **Incompatible materials**: No specific data.
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407 2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>Unknown guidelines Not known No official guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>LANASET RED 2B</td>
<td>LD50 Oral</td>
<td>Mouse</td>
<td>4880 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

#### Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET RED 2B</td>
<td>OECD 405 Acute Eye Irritation/Corrosion</td>
<td>Rabbit</td>
<td>Eyes - Non-irritant.</td>
</tr>
<tr>
<td></td>
<td>OECD 404 Acute Dermal Irritation/Corrosion</td>
<td>Rabbit</td>
<td>Skin - Non-irritant.</td>
</tr>
</tbody>
</table>

Conclusion/Summary

9/24/2014. 00041721
Section 11. Toxicological information

Skin

- Non-irritating to the skin.
  - ACID RED 407
  - 2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt
  - Sodium 2-[methyloleoylamino] ethane-1-sulphonate
  
- No additional information.

Eyes

- Non-irritating to the eyes.
  - ACID RED 407
  - 2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt
  - Sodium 2-[methyloleoylamino] ethane-1-sulphonate
  
- No additional information.

Respiratory

- No additional information.
  - ACID RED 407
  - 2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt
  - Sodium 2-[methyloleoylamino] ethane-1-sulphonate
  
- No additional information.

Sensitization

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
</tbody>
</table>

Mutagenicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>Subject: bacteria/yeast</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Carcinogenicity

Not available.

Carcinogenic class

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.
Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Symptoms related to the physical, chemical and toxicological characteristics

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential immediate effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Long term exposure

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential immediate effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Potential chronic health effects

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Teratogenicity</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Developmental effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Fertility effects</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Numerical measures of toxicity

Acute toxicity estimates
Not available.
Section 11. Toxicological information

Other information: Not available.

Section 12. Ecological information

### Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>OECD 202 <em>Daphnia</em> sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>33.4 mg/l</td>
</tr>
<tr>
<td>2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;300 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Acute LC50</td>
<td>48 hours</td>
<td>Fish</td>
<td>0.6 mg/l</td>
</tr>
<tr>
<td></td>
<td>No official guidelines</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>37 mg/l</td>
</tr>
<tr>
<td>LANASET RED 2B</td>
<td>OECD OECD 202 screening</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>9.9 to 15 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 202 <em>Daphnia</em> sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>&gt;30 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>281 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>3 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary:** Toxic to aquatic organisms if run directly to surface waters.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>0 %</td>
</tr>
<tr>
<td>2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>OECD 302C Inherent Biodegradability: Modified MITI Test (II)</td>
<td>28 days</td>
<td>&lt;5 %</td>
</tr>
<tr>
<td>LANASET RED 2B</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>30 to 40 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary:** Partially eliminated by adsorption onto effluent treatment sludge.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET RED 2B</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>ACID RED 407</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>2-Naphthalenesulfonic acid, polymer with formaldehyde, sodium salt</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACID RED 407</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

Not available.

Other adverse effects

: No known significant effects or critical hazards.

Other ecological information

- BOD5: 190 mgO2/g
- COD: 1025 mgO2/g
- TOC: Not determined.
- Organohalogen content: 2.3 % Chloro
- Phosphorus Content: 0 %
- Nitrogen Content: 3.8 %
- Metal Content: 1.2 % Chromium as Cr(III) organo-metal complex

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

- DOT: Environmentally hazardous substance, solid, n.o.s. Chromium complex monoazo dyestuff. Marine pollutant
- TDG: Environmentally hazardous substance, solid, n.o.s. Chromium complex monoazo dyestuff. Marine pollutant
- IMDG: Environmentally hazardous substance, solid, n.o.s. Chromium complex monoazo dyestuff Marine pollutant
- IATA: Environmentally hazardous substance, solid, n.o.s. (CHROMIUM COMPLEX MONOAZO DYESTUFF)
### Section 14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>-not regulated in bulk</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>-</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Emergency schedules (EmS) F-A S-F</td>
</tr>
<tr>
<td>IATA Classification</td>
<td>UN3077</td>
<td>9</td>
<td>III</td>
<td><img src="image" alt="Label" /></td>
<td>Passenger and Cargo Aircraft Quantity limitation: 400 kg Packaging instructions: 956 Cargo Aircraft Only Quantity limitation: 400 kg Packaging instructions: 956</td>
</tr>
</tbody>
</table>

PG*: Packing group

### Section 15. Regulatory information

#### Safety, health and environmental regulations specific for the product

**United States Regulations**

- **TSCA 8(b) inventory**: All components are listed or exempted.
- **TSCA 5(a)2 final significant new use rule (SNUR)**: No ingredients listed.
- **TSCA 5(e) substance consent order**: No ingredients listed.
# Section 15. Regulatory information

<table>
<thead>
<tr>
<th>TSCA 12(b) export notification</th>
<th>: No ingredients listed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 311/312</td>
<td>: Not classified.</td>
</tr>
<tr>
<td>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</td>
<td>Product name</td>
</tr>
<tr>
<td>: Chromate(2-), [4-[(5-chloro-2-hydroxy-3-nitrophenyl)azo]-2, 4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato (2-)][3-[[1-(3-chlorophenyl)-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-4-yl]azo]-4-hydroxy-5-nitrobenzenesulfonato(3-)], disodium salt</td>
<td>Concentration %</td>
</tr>
<tr>
<td>Clean Air Act - Ozone Depleting Substances (ODS)</td>
<td>: This product does not contain nor is it manufactured with ozone depleting substances.</td>
</tr>
<tr>
<td>SARA 313 Form R - Reporting requirements</td>
<td>Product name</td>
</tr>
<tr>
<td>: ACID RED 407</td>
<td>Concentration %</td>
</tr>
<tr>
<td></td>
<td>Ingredient name</td>
</tr>
<tr>
<td>CERCLA Hazardous substances</td>
<td>: ACID RED 407</td>
</tr>
<tr>
<td>State regulations</td>
<td>PENNSYLVANIA - RTK</td>
</tr>
<tr>
<td>California Prop 65</td>
<td>: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.</td>
</tr>
<tr>
<td>Canadian regulations</td>
<td>CEPA DSL</td>
</tr>
<tr>
<td>WHMIS Classes</td>
<td>: Not controlled under WHMIS (Canada).</td>
</tr>
<tr>
<td>This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.</td>
<td></td>
</tr>
</tbody>
</table>

**Brazil Regulations**

**Classification system used** | **Norma ABNT-NBR 14725-2:2012**
Section 15. Regulatory information

International lists:
- Australia inventory (AICS): All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.
- Japan inventory: All components are listed or exempted.
- Korea inventory: All components are listed or exempted.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
- Philippines inventory (PICCS): All components are listed or exempted.
- Taiwan inventory (CSNN): Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.):
- Health: 0
- Flammability: 0
- Physical hazards: 0
- Personal protection: X

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.):
- Health: 0
- Flammability: 0
- Instability: 0
- Special: 0

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Date of issue: 9/24/2014.
Date of previous issue: 1/23/2014.
Version: 2

Indicates information that has changed from previously issued version.

LANASET® is a registered trademark of Huntsman Corporation or an affiliate thereof in one or more countries, but not all countries.

Notice to reader
Section 16. Other information

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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SAFETY DATA SHEET

LANASET® VIOLET B

Section 1. Identification

GHS product identifier : LANASET® VIOLET B
Product code : 00041693
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Textile dye

Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387

Customer service telephone: (888) 514-4558

e-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : AQUATIC HAZARD (LONG-TERM) - Category 3

- Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%
- Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2%

GHS label elements

Signal word : No signal word.

Hazard statements : Harmful to aquatic life with long lasting effects.

Precautionary statements : Avoid release to the environment. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

12/3/2013. 00041693 1/14
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 2-[methyloleoylamino]ethane-1-sulphonate</td>
<td>1 - 3</td>
<td>137-20-2</td>
</tr>
<tr>
<td>Citric acid</td>
<td>0.1 - 1</td>
<td>77-92-9</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>0.1 - 1</td>
<td>70851-34-2, 73612-41-6</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>0.1 - 1</td>
<td>41741-86-0</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: No specific data.
Section 4. First aid measures

**Skin contact**: No specific data.

**Ingestion**: No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Flash point**: Not available.

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- halogenated compounds
- metal oxide/oxides

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: 

Section 6. Accidental release measures

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010). TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures
Section 8. Exposure controls/personal protection

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): butyl or neoprene

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P2

Thermal hazards: Not available.

Section 9. Physical and chemical properties

Appearance

Physical state: Solid. [Powder]
Color: Violet
Odor: Odorless
Odor threshold: Not available.
pH: 6 to 7 [Conc. (% w/w): 2%]

Melting point/Freezing point: Not available.
Boiling/condensation point: Not available.
Flash point: Not available.
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits: Not available.

Vapor pressure: Not available.
Vapor density: Not available.
Relative density: Not available.
Solubility in water: Not available.
Water Solubility Result: 60 g/l 30 deg C
Section 9. Physical and chemical properties

- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: >135°C (>275°F)
- **Ignition Temperature (Deg C)**: SIT > 450 °C
- **Oxidizing properties**: None.
- **Density**: 0.53 g/cm³ [20°C (68°F)]
- **Viscosity**: Not available.

Section 10. Stability and reactivity

- **Reactivity**: No specific test data related to reactivity available for this product or its ingredients.
- **Chemical stability**: The product is stable.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.
- **Conditions to avoid**: No specific data.
- **Incompatible materials**: No specific data.
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>OECD 402 Acute Dermal Toxicity</td>
<td>LD50 Dermal</td>
<td>Rat - Male, Female</td>
<td>&gt;2000 mg/kg</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>Rat - Male, Female</td>
<td>5400 mg/kg</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3900 mg/kg</td>
</tr>
<tr>
<td>LANASET VIOLET B</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
<tr>
<td>LANASET VIOLET B</td>
<td>Not known</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>OECD 405 Acute Eye Irritation/Corrosion</td>
<td>Rabbit</td>
<td>Eyes - Irritant</td>
</tr>
<tr>
<td></td>
<td>OECD 404 Acute Dermal Irritation/Corrosion</td>
<td>Rabbit</td>
<td>Skin - Non-irritant.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

Conclusion/Summary

**Skin**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 2-[methyloleoylamino] ethane-1-sulphonate</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Citric acid</td>
<td></td>
<td>No official guidelines - Buehler or maximization test</td>
<td>skin</td>
<td>Guinea pig</td>
</tr>
</tbody>
</table>

**Eyes**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 2-[methyloleoylamino] ethane-1-sulphonate</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Citric acid</td>
<td></td>
<td>No official guidelines - Buehler or maximization test</td>
<td>skin</td>
<td>Guinea pig</td>
</tr>
</tbody>
</table>

**Respiratory**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 2-[methyloleoylamino] ethane-1-sulphonate</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Citric acid</td>
<td></td>
<td>No official guidelines - Buehler or maximization test</td>
<td>skin</td>
<td>Guinea pig</td>
</tr>
</tbody>
</table>

**Sensitization**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>No official guidelines - Buehler or maximization test</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

**Mutagenicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>Experiment: In vitro Subject: Mammalian-Human</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Experiment: In vitro Subject: Bacteria Metabolic activation: +/-</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td>Experiment: In vivo Subject: Mammalian-Animal</td>
<td>Negative</td>
</tr>
</tbody>
</table>

**Carcinogenicity**

Conclusion/Summary
Section 11. Toxicological information

Citric acid  In accordance with column 2 of Annex VII - X of Regulation (EC) No 1907/2006, the test for this property of the substance does not need to be conducted.

Carcinogenic class

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity

Conclusion/Summary:

Citric acid  In accordance with column 2 of Annex VII - X of Regulation (EC) No 1907/2006, the test for this property of the substance does not need to be conducted.

Teratogenicity

Conclusion/Summary:

Citric acid  In accordance with section 1 of Regulation (EC) No 1907/2006, Annex XI, this test does not appear scientifically necessary.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Not available.

Potential acute health effects

Eye contact  No known significant effects or critical hazards.
Inhalation  Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact  No known significant effects or critical hazards.
Ingestion  No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact  No specific data.
Inhalation  No specific data.
Skin contact  No specific data.
Ingestion  No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects  Not available.
Section 11. Toxicological information

Potential delayed effects
Long term exposure: Not available.

Potential immediate effects
Potential delayed effects: Not available.

Potential chronic health effects
Conclusion/Summary:

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
Not available.

Other information: Not available.

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>Unknown guidelines</td>
<td>Acute</td>
<td>LC50</td>
<td>Daphnia</td>
<td>1535 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute</td>
<td>LC50</td>
<td>Fish</td>
<td>440 to 760 mg/l</td>
</tr>
<tr>
<td></td>
<td>No official guidelines</td>
<td>Acute</td>
<td>LC50</td>
<td>Algae</td>
<td>425 mg/l</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>Daphnia</td>
<td>30.5 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute</td>
<td>IC50</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td>LANASET VIOLET B</td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute</td>
<td>LC50</td>
<td>Fish</td>
<td>0.52 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>Daphnia</td>
<td>&gt;68 mg/l</td>
</tr>
</tbody>
</table>

12/3/2013. 00041693
### Section 12. Ecological information

<table>
<thead>
<tr>
<th></th>
<th>Acute IC50</th>
<th>Acute LC50</th>
<th>3 hours</th>
<th>Bacteria Fish</th>
<th>&gt;300 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>40 mg/l</td>
<td>48 hours</td>
<td>Fish</td>
<td>40 mg/l</td>
<td>40 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary:** Harmful to aquatic organisms if run directly to surface waters.

#### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test Description</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>OECD 301E Ready Biodegradability - Modified OECD Screening Test</td>
<td>19 days</td>
<td>100 %</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 301B Ready Biodegradability - CO₂ Evolution Test</td>
<td>28 days</td>
<td>97 %</td>
</tr>
<tr>
<td>LANASET VIOLET B</td>
<td>OECD OECD 302B modified</td>
<td>14 days</td>
<td>85 %</td>
</tr>
<tr>
<td></td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>0.3 %</td>
</tr>
<tr>
<td></td>
<td>OECD 303A Simulation Test - Aerobic Sewage Treatment - Activated Sludge Units</td>
<td>28 days</td>
<td>80 to 90 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary:** Eliminated by adsorption onto effluent treatment sludge.

#### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPₐw</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>-0.76 to -0.12</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

#### Mobility in soil

Not available.

#### Other adverse effects

No known significant effects or critical hazards.

**Other ecological information**

- **BOD₅**: 50 mgO₂/g
- **COD**: 1100 mgO₂/g
- **TOC**: 41 %
- **Organohalogen content**: 3.4 % Chloro
- **Phosphorus Content**: 0 %
- **Nitrogen Content**: 5.2 %
- **Metal Content**: 100 ppm Chromium as Cr(III) organo-metal complex
- **Metal Content**: 46 ppm Cobalt as organo-metal complex
Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

DOT: Not regulated.
TDG: Not regulated.
IMDG: Not regulated.
IATA: Not regulated.

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IATA Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory: All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR): No ingredients listed.
Section 15. Regulatory information

TSCA 5(e) substance consent order
: No ingredients listed.

TSCA 12(b) export notification
: No ingredients listed.

SARA 311/312
: Not classified.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)
: No ingredients listed.

Clean Air Act - Ozone Depleting Substances (ODS)
: This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 Form R - Reporting requirements
: Cobalt as organo-metal complex

Cobalt as organo-metal complex

Concentration %
0.18128

CERCLA Hazardous substances
: Cobalt as organo-metal complex

Chromium as Cr(III) organo-metal complex

0.16946

Triphosphoric acid, pentasodium salt; Triphosphoric acid, sodium salt (1:5); Sodium phosphate; Pentasodium tripolyphosphate

0.0025

Formaldehyde

0.000150254

Section 304 CERCLA Hazardous Substance

Listed

CERCLA Reportable Quantity (Lbs)

No RQ assigned

Product Reportable Quantity (Lbs)

5000

200000000

State regulations

Pennsylvania - RTK
: No ingredients listed.

Californai Prop 65
: WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name
Mixture of hydrocarbons ex petroleum

Cancer
Yes.

Reproductive
No.

Formaldehyde

Yes.

No.

Canadian regulations

CEPA DSL
: All components are listed or exempted.
Section 15. Regulatory information

WHMIS Classes: Not controlled under WHMIS (Canada).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations
Classification system used: Norma ABNT-NBR 14725-2:2012

International lists: Australia inventory (AICS): All components are listed or exempted. China inventory (IECSC): All components are listed or exempted. Japan inventory: All components are listed or exempted. Korea inventory: All components are listed or exempted. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed. Philippines inventory (PICCS): All components are listed or exempted. Taiwan inventory (CSNN): Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.):

<table>
<thead>
<tr>
<th>Hazardous Material Information System (U.S.A.)</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.):

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of printing: 12/3/2013.
Date of issue: 12/3/2013.
Date of previous issue: No previous validation.
Version: 1
Section 16. Other information

Indicates information that has changed from previously issued version.

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Notice to reader
While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.
Section 1. Identification

GHS product identifier : LANASET® YELLOW 2R GR
Product code : 00043661
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against
Product use : Textile dye

Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387
Customer service telephone: (888) 514-4558

E-mail address of person responsible for this SDS : MSDS@huntsman.com

Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Warning
Hazard statements : May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.
Precautionary statements : Wear protective gloves: < 1 hour (breakthrough time): butyl or neoprene. Avoid release to the environment. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. IF skin irritation or rash occurs: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.
Section 2. Hazards identification

Other hazards which do not result in classification: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>13 - 30</td>
<td>70851-34-2, 73612-41-6</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>13 - 30</td>
<td>41741-86-0</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>1 - 3</td>
<td>8012-95-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: May cause an allergic skin reaction.

1/27/2014.
Section 4. First aid measures

**Ingestion**: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact**: No specific data.

**Inhalation**: No specific data.

**Skin contact**: Adverse symptoms may include the following:
- irritation
- redness

**Ingestion**: No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Flash point**: Not available.

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- halogenated compounds
- metal oxide/oxides

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark**: Not explosive
Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>OSHA PEL (United States, 6/2010).</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.5 mg/m³, (as Cr) 8 hours.</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>ACGIH TLV (United States, 3/2012).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 6/2010).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Environmental exposure controls

Individual protection measures

Hygiene measures

Eye/face protection

Hand protection

Body protection

Other skin protection

Respiratory protection

Thermal hazards

Not available.
Section 9. Physical and chemical properties

Appearance
- Physical state: Solid, [granules]
- Color: Yellow
- Odor: Odorless
- Odor threshold: Not applicable
- pH: 6.5 to 7.5 [Conc. (% w/w): 0.1%]
- Melting point/Freezing point: Not available
- Boiling/condensation point: Not available
- Flash point: Not available
- Evaporation rate: Not applicable
- Flammability (solid, gas): Not available
- Lower and upper explosive (flammable) limits: Not available
- Vapor pressure: Not available
- Vapor density: Not available
- Relative density: Not available
- Solubility in water: Not available
- Water Solubility Result: 100 g/l
- Partition coefficient: n-octanol/water: Not available
- Auto-ignition temperature: Not available
- Decomposition temperature: >200°C (>392°F)
- Explosive properties: Not explosive
- Oxidizing properties: None
- Density: 0.7 to 0.8 g/cm³ [20°C (68°F)]
- Viscosity: Dynamic (room temperature): Not applicable

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: No specific data.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological information

Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3900 mg/kg</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>Unknown guidelines</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>-</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>2062 mg/l</td>
</tr>
<tr>
<td>LANASET YELLOW 2R GR</td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2000 mg/kg</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

**Conclusion/Summary**

**Skin**: Non-irritant. The toxicological data is based on a product with comparable composition.

Cobalt as organo-metal complex
Chromium as Cr(III) organo-metal complex
PARAFFIN OILS

**Eyes**: Non-irritant. The toxicological data is based on a product with comparable composition.

Cobalt as organo-metal complex
Chromium as Cr(III) organo-metal complex
PARAFFIN OILS

**Respiratory**: Non-irritant. The toxicological data is based on a product with comparable composition.

Cobalt as organo-metal complex
Chromium as Cr(III) organo-metal complex
PARAFFIN OILS

**Sensitization**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>No official guidelines Buehler or maximization test</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>LANASET YELLOW 2R GR</td>
<td>No official guidelines Buehler or maximization test</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

**Mutagenicity**

Not available.

**Carcinogenicity**

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Section 11. Toxicological information

Not available.

**Carcinogenic class**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Symptoms related to the physical, chemical and toxicological characteristics**

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Adverse symptoms may include the following: irritation, redness</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

<table>
<thead>
<tr>
<th>Effects</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential immediate effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Long term exposure**

<table>
<thead>
<tr>
<th>Effects</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential immediate effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

Potential chronic health effects

**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

**Acute toxicity estimates**

Not available.

**Other information** : Not available.

Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute EC50</td>
<td>48 hours</td>
<td>Daphnia</td>
<td>30.5 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>0.52 mg/l</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines Not known</td>
<td>Acute LC0</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines Not known</td>
<td>Acute LC100</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines Not known</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td>LANASET YELLOW 2R GR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute IC50</td>
<td>3 hours</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute LC50</td>
<td>96 hours</td>
<td>Fish</td>
<td>15 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary** : Harmful to aquatic organisms if run directly to surface waters. Commercial product tested.

**Persistence and degradability**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>0.3 %</td>
</tr>
<tr>
<td>LANASET YELLOW 2R GR</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>&gt;90 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary** : Eliminated by adsorption onto effluent treatment sludge.
Section 12. Ecological information

**Cobalt as organo-metal complex**
- Aquatic half-life: Not available.
- Photolysis: Not available.
- Biodegradability: Not readily.

**Chromium as Cr(III) organo-metal complex**
- Aquatic half-life: Not available.
- Photolysis: Not available.
- Biodegradability: Not readily.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET YELLOW 2R GR</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>Cobalt as organo-metal</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>complex</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>complex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III)</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>organo-metal complex</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mobility in soil**

Not available.

**Other adverse effects**

No known significant effects or critical hazards.

**Other ecological information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5</td>
<td>260 mgO_2/g</td>
</tr>
<tr>
<td>COD</td>
<td>1125 mgO_2/g</td>
</tr>
<tr>
<td>TOC</td>
<td>42.2 %</td>
</tr>
<tr>
<td>Organohalogen content</td>
<td>0.9 % Chloro</td>
</tr>
<tr>
<td>Phosphorus Content</td>
<td>0.6 % as phosphate</td>
</tr>
<tr>
<td>Nitrogen Content</td>
<td>4 %</td>
</tr>
<tr>
<td>Metal Content</td>
<td>1.4 % Chromium as Cr(III) organo-metal complex</td>
</tr>
<tr>
<td></td>
<td>0.7 % Cobalt as organo-metal complex</td>
</tr>
</tbody>
</table>

Section 13. Disposal considerations

**Disposal methods**

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Section 14. Transport information

Proper shipping name

DOT : Not regulated.
TDG : Not regulated.
IMDG : Not regulated.
IATA : Not regulated.

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IATA Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.
TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.
TSCA 5(e) substance consent order : No ingredients listed.
TSCA 12(b) export notification : No ingredients listed.
SARA 311/312 : Immediate (acute) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Product name</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>18.128</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>16.946</td>
</tr>
</tbody>
</table>

Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

1/27/2014. 00043661 11/14
### Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Product name</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>18.128</td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>16.946</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CERCLA Hazardous Substance</th>
<th>CERCLA Reportable Quantity (Lbs)</th>
<th>Product Reportable Quantity (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt as organo-metal complex</td>
<td>18.128</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
<tr>
<td>Chromium as Cr(III) organo-metal complex</td>
<td>16.946</td>
<td>Listed</td>
<td>No RQ assigned</td>
<td></td>
</tr>
</tbody>
</table>

#### State regulations

**PENNSYLVANIA - RTK**

- Cobalt as organo-metal complex, Mixture of hydrocarbons ex petroleum, Chromium as Cr(III) organo-metal complex

**California Prop 65**

- **WARNING:** This product contains a chemical known to the State of California to cause cancer.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAFFIN OILS</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

#### Canadian regulations

**CEPA DSL**

- All components are listed or exempted.

**WHMIS Classes**

- Class D-2B: Material causing other toxic effects (Toxic).

*This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.*

#### Brazil Regulations

**Classification system used**

- Norma ABNT-NBR 14725-2:2012

#### International lists

- **Australia inventory (AICS):** All components are listed or exempted.
- **China inventory (IECSC):** All components are listed or exempted.
- **Japan inventory:** All components are listed or exempted.
- **Korea inventory:** All components are listed or exempted.
- **Malaysia Inventory (EHS Register):** Not determined.
- **New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
- **Philippines inventory (PICCS):** All components are listed or exempted.
- **Taiwan inventory (CSNN):** Not determined.
Section 16. Other information

Hazardous Material Information System (U.S.A.)

The customer is responsible for determining the PPE code for this material.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

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Date of previous issue : No previous validation.
Version : 1

Indicates information that has changed from previously issued version.

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.
Section 16. Other information

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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SAFETY DATA SHEET
LANASET® YELLOW 4GN

Section 1. Identification

GHS product identifier : LANASET® YELLOW 4GN
Product code : 00042219
Other means of identification : Not available.
Product type : Solid.
Material uses : Textile dye
Supplier's details : Huntsman International, LLC
Textile Effects Division
P.O. Box 4980
The Woodlands, TX 77387
Customer service telephone: (888) 514-4558
e-mail address of person responsible for this SDS : MSDS@huntsman.com
Emergency telephone number (24h/7day) : Chemtrec: (800) 424-9300 or (703) 527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 3
GHS label elements
Hazard pictograms : 
Signal word : Danger
Hazard statements : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.
Precautionary statements : Wear protective gloves:< 1 hour (breakthrough time): butyl or neoprene. In case of inadequate ventilation wear respiratory protection: Recommended: Respiratory protection, filter P3. Avoid release to the environment. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.
Section 2. Hazards identification

Other hazards which do not result in classification: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium 1,1′-isopropylidenedi-p-phenylenebis[2-[[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate]</td>
<td>30 - 60</td>
<td>72828-69-4</td>
</tr>
<tr>
<td>Sodium 4-((4-((2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazol-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>7 - 13</td>
<td>70247-70-0</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[[5-chloro-2-(2-chlorophenoxy)phenyl]azo]-4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td>3 - 7</td>
<td>72479-28-8</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>1 - 3</td>
<td>8012-95-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Immediate first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects
Section 4. First aid measures

<table>
<thead>
<tr>
<th><strong>Eye contact</strong></th>
<th><strong>Inhalation</strong></th>
<th><strong>Skin contact</strong></th>
<th><strong>Ingestion</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>: No known significant effects or critical hazards.</td>
<td>: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.</td>
<td>: May cause an allergic skin reaction.</td>
<td>: No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Over-exposure signs/symptoms**

<table>
<thead>
<tr>
<th><strong>Eye contact</strong></th>
<th><strong>Inhalation</strong></th>
<th><strong>Skin contact</strong></th>
<th><strong>Ingestion</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>: No specific data.</td>
<td>: Adverse symptoms may include the following: wheezing and breathing difficulties asthma</td>
<td>: Adverse symptoms may include the following: irritation redness</td>
<td>: No specific data.</td>
</tr>
</tbody>
</table>

**Indication of immediate medical attention and special treatment needed, if necessary**

<table>
<thead>
<tr>
<th><strong>Notes to physician</strong></th>
<th><strong>Protection of first-auers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.</td>
<td>: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.</td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)

Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th><strong>Flash point</strong></th>
<th><strong>Extinguishing media</strong></th>
<th><strong>Specific hazards arising from the chemical</strong></th>
<th><strong>Hazardous thermal decomposition products</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>: Closed cup: Not applicable.</td>
<td>: Use an extinguishing agent suitable for the surrounding fire.</td>
<td>: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.</td>
<td>: Decomposition products may include the following materials: carbon dioxide Carbon monoxide nitrogen oxides sulfur oxides phosphorus oxides halogenated compounds metal oxide/oxides</td>
</tr>
</tbody>
</table>
Section 5. Fire-fighting measures

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark: Not explosive

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling:

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities:
Section 7. Handling and storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAFFIN OILS</td>
<td>ACGIH TLV (United States, 6/2013). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Individual protection measures

Hand protection: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
**Section 8. Exposure controls/personal protection**

**Respiratory protection**: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Respiratory protection, filter P3.

**Thermal hazards**: Not available.

**Section 9. Physical and chemical properties**

**Appearance**

- **Physical state**: Solid. [granules]
- **Color**: Orange.
- **Odor**: Odorless.
- **Odor threshold**: Not applicable.
- **pH**: 8.5 to 9 [Conc. (% w/w): 2%]
- **Melting point/Freezing point**: Not available.
- **Boiling/condensation point**: Not available.
- **Flash point**: Closed cup: Not applicable.
- **Evaporation rate**: Not applicable.
- **Flammability (solid, gas)**: Not available.
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Relative density**: Not available.
- **Solubility in water**: Not available.
- **Water Solubility Result**: 100 g/l 30 deg C
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: >190°C (>374°F)
- **Ignition Temperature (Deg C)**: SIT > 450 °ASTM-D1929B
- **Explosive properties**: Not explosive
- **Oxidizing properties**: None.
- **Density**: 0.7 to 0.8 g/cm³ [20°C (68°F)]
- **Viscosity**: Dynamic (room temperature): Not applicable.
  Kinematic (room temperature): Not applicable.

**Section 10. Stability and reactivity**

**Reactivity**: No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**: The product is stable.

**Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.
Section 10. Stability and reactivity

Conditions to avoid: No specific data.

Incompatible materials: No specific data.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium 1,1'-isopropylidenedi-p-phenylenebis[2-{[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate]</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-</td>
<td>4-{[5-chloro-2-(2-chlorophenoxy)phenyl]azo}-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl</td>
<td>OECD 401 Acute Oral Toxicity</td>
<td>LD50 Oral</td>
<td>&gt;15000 mg/kg</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LANASET YELLOW 4GN</td>
<td>-</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>2062 mg/l</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>22000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANASET YELLOW 4GN</td>
<td>L</td>
<td>Rabbit</td>
<td>Eyes - Non-irritant.</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>Rabbit</td>
<td>Skin - Non-irritant.</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Non-irritating to the skin.

Disodium 1,1'-isopropylidenedi-p-phenylenebis[2-{[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate]: No additional information.

Sodium 4-(4-[(5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl]azo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulphonate: No additional information.

Sodium 4-chloro-3-[4-[(5-chloro-2-]
### Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Chemical Formula</th>
<th>Sensitization</th>
<th>No additional information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2-chlorophenoxy)phenylazo-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-ylbenzenesulphonate</td>
<td><strong>Eyes</strong></td>
<td>Non-irritating to the eyes.</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>Disodium 1,1'-isopropylidenedi-p-phenylenebis[2-[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulphophenyl)azo)-3-methylpyrazol-1-yl)-2, 5-dichlorobenzenesulphonate</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[5-chloro-2-(2-chlorophenoxy)phenylazo]-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>Disodium 1,1'-isopropylidenedi-p-phenylenebis[2-[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate</td>
<td><strong>Respiratory</strong></td>
<td>No additional information.</td>
</tr>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulphophenyl)azo)-3-methylpyrazol-1-yl)-2, 5-dichlorobenzenesulphonate</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[5-chloro-2-(2-chlorophenoxy)phenylazo]-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td></td>
<td>No additional information.</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td></td>
<td>No additional information.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium 1,1'-isopropylidenedi-p-phenylenebis[2-[(5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Sodium 4-(4-((5-((2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2,5-dichlorobenzenesulfonate</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[5-chloro-2-(2-chlorophenoxy)phenyl]azo]-4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>LANASET YELLOW 4GN</td>
<td>OECD 406 Skin Sensitization</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Respiratory: This dyestuff contains C.I. Reactive Yellow 39 for which cases of respiratory sensitisation have been observed. Care should be taken to avoid inhalation. Should an individual become sensitized a physician should be consulted and all contact with reactive dyes must cease immediately.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Not available.

Potential acute health effects

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Section 11. Toxicological information

Eye contact : No known significant effects or critical hazards.
Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : Adverse symptoms may include the following:
- wheezing and breathing difficulties
- asthma
Skin contact : Adverse symptoms may include the following:
- irritation
- redness
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Other information : Not available.
# Section 12. Ecological information

## Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Endpoint</th>
<th>Exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium 1,1'-isopropylidenedi-p-phenylenebis[2-[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>Daphnia</td>
<td>&gt;51.1 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute</td>
<td>IC50</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute</td>
<td>LC50</td>
<td>Fish</td>
<td>13 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>NOEC</td>
<td>Daphnia</td>
<td>25.4 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute</td>
<td>IC50</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td>Sodium 4-((5-(2-Bromo-1-oxo-2-propenyl)amino)-2-sulfophenyl)azo)-3-methylpyrazol-1-yl)-2,5-dichlorobenzenesulphonate</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>EC50</td>
<td>Daphnia</td>
<td>&gt;189 mg/l</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[5-chloro-2-(2-chlorophenoxy)phenyl]azo]-4,5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>IC50</td>
<td>Bacteria</td>
<td>&gt;320 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute</td>
<td>LC50</td>
<td>Fish</td>
<td>30 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 202 Daphnia sp. Acute Immobilisation Test</td>
<td>Acute</td>
<td>NOEC</td>
<td>Daphnia</td>
<td>5 mg/l</td>
</tr>
<tr>
<td>PARAFFIN OILS</td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>LC0</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>LC100</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>LC50</td>
<td>Fish</td>
<td>&gt;1000 mg/l</td>
</tr>
<tr>
<td></td>
<td>Unknown guidelines</td>
<td>Not known</td>
<td>IC50</td>
<td>Bacteria</td>
<td>&gt;400 mg/l</td>
</tr>
<tr>
<td>LANASET YELLOW 4GN</td>
<td>OECD 209 Activated Sludge, Respiration Inhibition Test</td>
<td>Acute</td>
<td>IC50</td>
<td>Bacteria</td>
<td>&gt;400 mg/l</td>
</tr>
<tr>
<td></td>
<td>OECD 203 Fish, Acute Toxicity Test</td>
<td>Acute</td>
<td>LC50</td>
<td>Fish</td>
<td>45 mg/l</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

Harmful to aquatic organisms if run directly to surface waters.

**Persistence and degradability**

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**Section 12. Ecological information**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)(amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2, 5-dichlorobenzenesulfonate</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>0 %</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[5-chloro-2-(2-chlorophenoxy)phenyl]azo]-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td>OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>28 days</td>
<td>92.3 %</td>
</tr>
<tr>
<td><strong>LANASET YELLOW 4GN</strong></td>
<td>OECD 303B Simulation Test - Aerobic Sewage Treatment – Biofilms</td>
<td>28 days</td>
<td>50 to 60 %</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

Partially eliminated by adsorption onto effluent treatment sludge.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Log(P_{ow})</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium 1,1’-isopropylidenedi-p-phenylenebis[2-[5-amino-3-methyl-1-(3-sulphonatophenyl)-1H-pyrazol-5-yl]azo]benzenesulphonate</td>
<td>0.57</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Sodium 4-(4-((5-(2-Bromo-1-oxo-2-propenyl)(amino)-2-sulfophenyl)azo)-3-methylpyrazolon-1-yl)-2, 5-dichlorobenzenesulfonate</td>
<td>3.3</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Sodium 4-chloro-3-[4-[5-chloro-2-(2-chlorophenoxy)phenyl]azo]-4, 5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate</td>
<td>&lt;3</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

5-dihydro-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulphonate

Mobility in soil
Not available.

Other adverse effects: No known significant effects or critical hazards.

Other ecological information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5</td>
<td>70 mgO2/g</td>
</tr>
<tr>
<td>COD</td>
<td>980 mgO2/g</td>
</tr>
<tr>
<td>TOC</td>
<td>33 %</td>
</tr>
<tr>
<td>Organohalogen content</td>
<td>1 %</td>
</tr>
<tr>
<td>Phosphorus Content</td>
<td>0.27 % as phosphate</td>
</tr>
<tr>
<td>Nitrogen Content</td>
<td>7.6 %</td>
</tr>
<tr>
<td>Metal Content</td>
<td>Metal content under the ETAD recommended limits</td>
</tr>
</tbody>
</table>

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>TDG</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>IMDG</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>IATA</td>
<td>Not regulated.</td>
</tr>
</tbody>
</table>
Section 14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>IMDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>IATA Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

PG*: Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard

Clean Air Act - Ozone Depleting Substances (ODS) : This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 : No ingredients listed.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>Section 304 CERCLA Hazardous Substance</th>
<th>CERCLA Reportable Quantity (Lbs)</th>
<th>Product Reportable Quantity (Lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triphosphoric acid, pentasodium salt; Triphosphoric acid, sodium salt (1:5); Sodium phosphate; Pentasodium tripolyphosphate</td>
<td>1.0964</td>
<td>Listed</td>
<td>5000</td>
<td>456038</td>
</tr>
</tbody>
</table>

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Section 15. Regulatory information

State regulations

PENNSYLVANIA - RTK : Mixture of hydrocarbons ex petroleum, Triphosphoric acid, pentasodium salt; Triphosphoric acid, sodium salt (1:5); Sodium phosphate; Pentasodium tripolyphosphate, Sodium sulfate

California Prop 65 : WARNING: This product contains a chemical known to the State of California to cause cancer.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAFFIN OILS</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Canadian regulations

CEPA DSL : At least one component is not listed.

WHMIS Classes : Class D-2A: Material causing other toxic effects (Very toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

Classification system used : Norma ABNT-NBR 14725-2:2012

International lists

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>* 2</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

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