SAFETY DATA SHEET

Revision date : 2017-1-3. Date of issue : 2016-03-08.

Section 1. Identification

Product name : Pearl Ex Varnish
Product number: JAC1649

MANUFACTURED BY Rupert, Gibbon & Spider, Inc./Jacquard Products
1147 Healdsburg Ave. CA, 95448
800-442-0455

Emergency telephone CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300
International CHEMTREC, call: 1-703-527-3887
For non-emergency assistance, call: 800-442-045

Section 2. Hazards identification

OSHA/HCS status
: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture
: Not classified.

GHS label elements
Signal word
: No signal word.

Hazard statements
: No known significant effects or critical hazards.

Precautionary statements

General
: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention
: Not applicable.

Response
: Not applicable.

Storage
: Not applicable.

Disposal
: Not applicable.

Hazards not otherwise classified
: None known.

NOTICE: Reports have associated repeated and prolonged OVEREXPOSURE to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents of this package may be harmful or fatal.
Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Other means of identification: Not available.

CAS number/other identifiers
- CAS number: Not applicable.
- Product code: 423-2990

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-butoxy-2-propanol</td>
<td>1 - 5</td>
<td>5131-66-8</td>
</tr>
<tr>
<td>methoxy propox propanol</td>
<td>1 - 5</td>
<td>34590-94-8</td>
</tr>
<tr>
<td>ammonia</td>
<td>0.1 - 1</td>
<td>7664-41-7</td>
</tr>
<tr>
<td>2-(2-butoxyethoxy)ethanol</td>
<td>0 - 0.1</td>
<td>112-34-5</td>
</tr>
</tbody>
</table>

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

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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. Get medical attention if irritation occurs.
- **Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- **Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **Ingestion**: Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

**Potential acute health effects**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **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**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- **Specific treatments**: No specific treatment.
- **Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)
Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Extinguishing media</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable extinguishing media</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>None known.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific hazards arising from the chemical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous thermal decomposition products</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>Decomposition products may include the following materials:</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special protective actions for fire-fighters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>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. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>

Section 6. Accidental release measures

<table>
<thead>
<tr>
<th>Personal precautions, protective equipment and emergency procedures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For non-emergency personnel</td>
<td>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. Put on appropriate personal protective equipment.</td>
</tr>
<tr>
<td>For emergency responders</td>
<td>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 &quot;For non-emergency personnel&quot;.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental precautions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>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).</td>
<td></td>
</tr>
</tbody>
</table>

Methods and materials for containment and cleaning up

<table>
<thead>
<tr>
<th>Small spill</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Large spill</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.</td>
<td></td>
</tr>
</tbody>
</table>

Section 7. Handling and storage

<table>
<thead>
<tr>
<th>Precautions for safe handling</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective measures</td>
<td>Put on appropriate personal protective equipment (see Section 8).</td>
</tr>
<tr>
<td>Advice on general occupational hygiene</td>
<td>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.</td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

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>methoxy propoxy propanol</td>
<td>ACGIH TLV (United States). Absorbed through skin.</td>
</tr>
<tr>
<td></td>
<td>TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes.</td>
</tr>
<tr>
<td>ammonia</td>
<td>OSHA PEL (United States). Absorbed through skin.</td>
</tr>
<tr>
<td></td>
<td>TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (United States).</td>
</tr>
<tr>
<td></td>
<td>TWA: 25 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States).</td>
</tr>
<tr>
<td></td>
<td>TWA: 50 ppm 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.

Selection of personal protective equipment (PPE) is to be established by the employer performing a PPE hazard assessment. In the U.S.A, OSHA requires completion of a documented PPE hazard assessment as described in 29 CFR 1910.132.

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.

Skin protection

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.

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, air-purifying or air-fed 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.

Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.

Section 9. Physical and chemical properties

Appearance

Physical state: Liquid.
Color: Not available.
Odor: Not available.
pH: Not available.
Melting point: Not available.
Boiling point: 100 - 195 °C (212 - 383 °F)
Flash point: Closed cup: >93.3°C (>199.9°F) [Product does not sustain combustion.]
Evaporation rate: Highest known value: Less than 1. (1-butoxy-2-propanol) compared with butyl acetate

Lower and upper explosive (flammable) limits

Vapor pressure: 17.5 mm Hg (2.3275 kPa) (Highest known value: water)
Vapor density: < 1 (Air = 1) (Calculation method)
Volatility: 66.72% (w/w)
Density: 1.035 g/cm³
Solubility: Not available.
Partition coefficient: n-octanol/water: Not available.
Decomposition temperature: 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
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-butoxy-2-propanol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>3100 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>methoxy propoxy propanol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2700 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>ammonia</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>9500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5130 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>2000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td>2-(2-butoxyethoxy)ethanol</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>4840 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>350 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2700 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4500 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**
Not available.

**Sensitization**
Not available.

**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**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **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.

**Long term exposure**

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

Potential immediate effects: Not available.
Potential delayed effects: Not available.
Potential chronic health effects: Not available.

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

Data available upon request.

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. 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

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user: **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations: United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act (CAA) 112 regulated toxic substances: 2-(2-butoxyethoxy)ethanol; glycol ether

State regulations
Massachusetts: None of the components are listed.
New York: None of the components are listed.
New Jersey: None of the components are listed.
Pennsylvania: None of the components are listed.
Canada inventory: All components are listed or exempted.

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

Chemical Weapons Convention List Schedule I Chemicals: Not listed
Chemical Weapons Convention List Schedule II Chemicals: Not listed
Chemical Weapons Convention List Schedule III Chemicals: Not listed

Section 16. Other information

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
<tr>
<td>Physical hazards</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

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

History
Date of printing: 2017-01-03.
Date of issue/Date of revision: 2017-01-03.
Date of previous issue: 2016-12-15.
Section 16. Other information

| Version       | 1.35 |
| Key to abbreviations | ATE = Acute Toxicity Estimate  
|                 | BCF = Bioconcentration Factor  
|                 | GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
|                 | IATA = International Air Transport Association  
|                 | IBC = Intermediate Bulk Container  
|                 | IMDG = International Maritime Dangerous Goods  
|                 | LogPow = logarithm of the octanol/water partition coefficient  
|                 | UN = United Nations |

References: Not available.

▶ Indicates information that has changed from previously issued version.

Notice to reader

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user’s responsibility to verify that this data sheet is current prior to using the product.