

- 4) Ethanol, 2-(2-ethoxyethoxy)- Inhalation not likely under normal use conditions. Absorbed through skin. Moderately irritating to the eyes. Harmful if swallowed. Can cause CNS depression. Can cause dizziness, lightheadedness, headache, nausea, and blurred vision. Large doses may cause systemic acidosis and methemoglobinemia with cyanosis. Repeated or prolonged exposure to the substance can produce kidney damage.

4. FIRST AID MEASURES

- Inhalation** : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Skin contact** : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

- Extinguishing media** : Use an extinguishing agent suitable for surrounding fires.
- Special fire-fighting procedures** : No specific hazard.
- Hazardous thermal decomposition products** : Not applicable.
- Protection of fire-fighters** : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

7. HANDLING AND STORAGE

- Handling** : Use suitable protective equipment (Section 8).
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.
- Packaging materials** : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

- | <u>Chemical name</u> | <u>Occupational exposure limits</u> |
|----------------------------------|---|
| 1) Ethanol, 2-(2-butoxyethoxy)- | No established limits. |
| 2) 2-PYRROLIDINONE,
1-METHYL- | 1) United States AIHA WEEL TWA 8 hours 10 ppm (Skin) (2004) |
| 3) 1,2-Propanediol | 1) United States AIHA TWA 8 hours 10 mg/m ³ (2000) |
| 4) Ethanol, 2-(2-ethoxyethoxy)- | 1) United States AIHA WEEL 8 hours 25 ppm |

Engineering controls : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protective Equipment

Respiratory system : 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.

Skin and body : 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.

Hands : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : 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 or dusts.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance : Liquid.

Color : Black

Odor threshold : The highest known value is 0 ppm. Weighted average: 0 ppm.

Boiling point : The lowest known value is 99 °C. Weighted average: 123 °C.

Melting point : May start to solidify at 0 °C. Weighted average: -12 °C.

Specific gravity : 1.02 (Water = 1)

Vapor density : The highest known value is 5.6. The lowest known value is 0.6. (Air = 1)

Vapor pressure : The highest known value is 18 mm Hg at 20°C. Weighted average: 14 mm Hg at 20°C.

Evaporation rate (butyl acetate = 1) : The highest known value is 1.0. Weighted average: 0.3.

Solubility : Easily soluble in cold water, hot water, methanol, acetone. Soluble in diethyl ether, n-octanol.

Octanol/water partition coefficient : The product is more soluble in water.

pH : Neutral.

Flash point : Not applicable.

Autoignition temperature : Not applicable.

Flammable limits : Not applicable.

Volatility (w/w) : 93 %.

VOC Volatility (w/w) - less exempt volatile. : 19 %.

10. STABILITY AND REACTIVITY

Stability : The product is stable.

Conditions and materials to avoid : Not available.

Hazardous reactions : Reactive with oxidizing agents. Slightly reactive to reactive with reducing agents, acids, alkalis.

Hazardous decomposition products : Not applicable.

11. TOXICOLOGICAL INFORMATION

Chemical name

Toxicological information

- | | |
|----------------------------------|--|
| 1) Ethanol, 2-(2-butoxyethoxy)- | 1) LD50 Oral Rat: 5660 mg/kg
2) LD50 Oral Rabbit: 2200 mg/kg
3) LD50 Oral Mouse: 2400 mg/kg
4) LD50 Dermal Rabbit: 2700 mg/kg |
| 2) 2-PYRROLIDINONE,
1-METHYL- | 1) LD50 Oral Rat: 3914 mg/kg
2) LD50 Oral Mouse: 5130 mg/kg
3) LD50 Dermal Rabbit: 8000 mg/kg |
| 3) 1,2-Propanediol | 1) LD50 Oral Rabbit: 18500 mg/kg
2) LD50 Oral Guinea pig: 18350 mg/kg
3) LD50 Oral Rat: 20000 mg/kg
4) LD50 Dermal Rabbit: 20800 mg/kg |
| 4) Ethanol, 2-(2-ethoxyethoxy)- | 1) LD50 Oral Rat: 5445 mg/kg
2) LD50 Oral Rabbit: 3620 mg/kg
3) LD50 Oral Mouse: 6534 mg/kg
4) LD50 Dermal Rabbit: 4158 mg/kg
5) LC50 Inhalation vapor Rat: 5240 mg/m ³ 4 hours |

12. ECOLOGICAL INFORMATION

- Persistence/degradability** : Not available.
- Ecotoxicity** : Not available.
- Heavy Metals** : Total concentration: Pb, Hg, Cd, Cr(VI) < 100 ppm
- California, VOC Content** : 790 grams volatile organic / liter less water or exempt volatile.

13. DISPOSAL CONSIDERATIONS

- Disposal methods** : Waste must be disposed of in accordance with federal, state and local environmental control regulations.
- RCRA waste code** : Not available.

14. TRANSPORT INFORMATION

- Proper shipping name** : Not regulated.

15. REGULATORY INFORMATION

- CERCLA** : The following substances are listed by CERCLA: Ethanol, 2-(2-butoxyethoxy)- (7 - 13%) ; Ethanol, 2-(2-ethoxyethoxy)- (1 - 3%)
- SARA 313** : The following substances are listed on SARA 313: 2-PYRROLIDINONE, 1-METHYL- (3 - 7%) ; Ethanol, 2-(2-butoxyethoxy)- (7 - 13%) ; Ethanol, 2-(2-ethoxyethoxy)- (1 - 3%)
- California prop. 65** : This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: 2-PYRROLIDINONE, 1-METHYL- (3 - 7%)
- Tariff Code - harmonized system** : 3215.11 Printing ink: Black.
USA ...00.60
EU ...00.00

16. OTHER INFORMATION

- Date of issue** : May 18, 2005
- Prepared by** : Garth Studebaker, CSP
- Version** : 5
- Notice to Reader**

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