

Franklin International

Material Safety Data Sheet

Titebond PROvantage Foamboard Adhesive

1. Product and company identification

| | |
|-------------------------------|--|
| Address | : Franklin International 2020 Bruck Street Columbus OH 43207 |
| Contact person | : Franklin Technical Services |
| Telephone | : (800) 877-4583 |
| In case of emergency | : Franklin Security (614) 445-1300 |
| Product code | : 3471 |
| Date of revision | : 3/26/2012. |
| Print date | : 4/10/2012. |
| Chemtrec (24 Hour) | : (800) 424 - 9300 |
| Chemtrec International | : (703) 527 - 3887 |
| Product use | : Construction adhesive Proprietary polymer |

2. Hazards identification

Emergency overview

| | |
|--|--|
| Physical state | : Liquid. [Paste.] |
| Color | : Beige. [Light] |
| Odor | : Solvent(s) [Strong] |
| Signal word | : DANGER! |
| Hazard statements | : EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. CAUSES DIGESTIVE TRACT BURNS. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT AND SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. MAY CAUSE EYE IRRITATION. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER. |
| Precautionary measures | : Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid prolonged contact with eyes, skin and clothing. Keep away from heat, sparks and flame. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling. |
| OSHA/HCS status | : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). |
| Routes of entry | : Dermal contact. Eye contact. Inhalation. Ingestion. |
| <u>Potential acute health effects</u> | |
| Inhalation | : Toxic by inhalation. Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Inhalation causes headaches, dizziness, drowsiness and nausea and may lead to unconsciousness. |
| Ingestion | : Harmful if swallowed. Corrosive to the digestive tract. Causes burns. |

2. Hazards identification

- Skin** : Harmful in contact with skin. Irritating to skin. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Eyes** : Moderately irritating to eyes. This product may irritate eyes upon contact.
- Potential chronic health effects**
- Chronic effects** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Carcinogenicity** : Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

3. Composition/information on ingredients

United States

| Name | CAS number | % |
|------------------------|------------|-----------|
| methyl acetate | 79-20-9 | 10 - 25 |
| oxydipropyl dibenzoate | 27138-31-4 | 5 - 10 |
| diethylene oximine | 110-91-8 | 1 - 5 |
| vinyl acetate | 108-05-4 | 0.1 - 0.5 |

Canada

| Name | CAS number | % |
|------------------------|------------|-----------|
| methyl acetate | 79-20-9 | 10 - 25 |
| oxydipropyl dibenzoate | 27138-31-4 | 5 - 10 |
| diethylene oximine | 110-91-8 | 1 - 5 |
| methanol | 67-56-1 | 0.1 - 0.5 |
| vinyl acetate | 108-05-4 | 0.1 - 0.5 |

Mexico

| Name | CAS number | UN number | % | IDLH | Classification | | | |
|------------------------|------------|----------------|---------|----------|----------------|---|---|---------|
| | | | | | H | F | R | Special |
| methyl acetate | 79-20-9 | UN1993 | 10 - 25 | 3100 ppm | 2 | 3 | 0 | - |
| diethylene oximine | 110-91-8 | 2054 | 1 - 5 | 1400 ppm | 3 | 1 | 0 | - |
| oxydipropyl dibenzoate | 27138-31-4 | Not available. | 5 - 10 | - | 2 | 0 | 0 | - |

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.

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4. First aid measures

- 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.
- Notes to physician** : 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.

5. Fire-fighting measures

- Flammability of the product** : Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- 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.

6. Accidental release measures

- Personal precautions** : 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- 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).
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Absorb with an inert material.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. 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). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

7. Handling and storage

Storage

- : Store between the following temperatures: -17 to 40°C (1.4 to 104°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.

8. Exposure controls/personal protection

United States

| Ingredient | Exposure limits |
|--------------------|---|
| methyl acetate | <p>ACGIH TLV (United States, 2/2010). TWA: 200 ppm 8 hour(s). TWA: 606 mg/m³ 8 hour(s). STEL: 250 ppm 15 minute(s). STEL: 757 mg/m³ 15 minute(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 200 ppm 8 hour(s). TWA: 610 mg/m³ 8 hour(s). STEL: 250 ppm 15 minute(s). STEL: 760 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2009). TWA: 200 ppm 10 hour(s). TWA: 610 mg/m³ 10 hour(s). STEL: 250 ppm 15 minute(s). STEL: 760 mg/m³ 15 minute(s).</p> <p>OSHA PEL (United States, 6/2010). TWA: 200 ppm 8 hour(s). TWA: 610 mg/m³ 8 hour(s).</p> |
| diethylene oximine | <p>ACGIH TLV (United States, 2/2010). Absorbed through skin. TWA: 20 ppm 8 hour(s). TWA: 71 mg/m³ 8 hour(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 20 ppm 8 hour(s). TWA: 70 mg/m³ 8 hour(s). STEL: 30 ppm 15 minute(s). STEL: 105 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2009). Absorbed through skin. TWA: 20 ppm 10 hour(s). TWA: 70 mg/m³ 10 hour(s). STEL: 30 ppm 15 minute(s). STEL: 105 mg/m³ 15 minute(s).</p> <p>OSHA PEL (United States, 6/2010). Absorbed through skin. TWA: 20 ppm 8 hour(s). TWA: 70 mg/m³ 8 hour(s).</p> |
| vinyl acetate | <p>ACGIH TLV (United States, 2/2010). TWA: 10 ppm 8 hour(s). TWA: 35 mg/m³ 8 hour(s). STEL: 15 ppm 15 minute(s). STEL: 53 mg/m³ 15 minute(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 10 ppm 8 hour(s). TWA: 30 mg/m³ 8 hour(s). STEL: 20 ppm 15 minute(s). STEL: 60 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2009).</p> |

8. Exposure controls/personal protection

CEIL: 4 ppm 15 minute(s).
CEIL: 15 mg/m³ 15 minute(s).

Canada

| <u>Occupational exposure limits</u> | | TWA (8 hours) | | | STEL (15 mins) | | | Ceiling | | | |
|-------------------------------------|-----------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|-----------|
| Ingredient | List name | ppm | mg/m ³ | Other | ppm | mg/m ³ | Other | ppm | mg/m ³ | Other | Notations |
| methyl acetate | US ACGIH 2/2010 | 200 | 606 | - | 250 | 757 | - | - | - | - | |
| | AB 4/2009 | 200 | 606 | - | 250 | 757 | - | - | - | - | |
| | BC 9/2010 | 200 | - | - | 250 | - | - | - | - | - | |
| | ON 7/2010 | 200 | 606 | - | 250 | 757 | - | - | - | - | |
| | QC 6/2008 | 200 | 606 | - | 250 | 757 | - | - | - | - | |
| diethylene oximine | US ACGIH 2/2010 | 20 | 71 | - | - | - | - | - | - | - | [1] |
| | AB 4/2009 | 20 | 71 | - | - | - | - | - | - | - | [1] |
| | BC 9/2010 | 20 | - | - | - | - | - | - | - | - | [1] |
| | ON 7/2010 | 20 | 70 | - | 30 | 105 | - | - | - | - | [1] |
| | QC 6/2008 | 20 | 71 | - | - | - | - | - | - | - | [1] |
| methanol | US ACGIH 2/2010 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| | AB 4/2009 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| | BC 9/2010 | 200 | - | - | 250 | - | - | - | - | - | [1] |
| | ON 7/2010 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| | QC 6/2008 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| vinyl acetate | US ACGIH 2/2010 | 10 | 35 | - | 15 | 53 | - | - | - | - | |
| | AB 4/2009 | 10 | 35 | - | 15 | 53 | - | - | - | - | |
| | BC 9/2010 | 10 | - | - | 15 | - | - | - | - | - | |
| | ON 7/2010 | 10 | 35 | - | 15 | 53 | - | - | - | - | |
| | QC 6/2008 | 10 | 35 | - | 15 | 53 | - | - | - | - | |

[1] Absorbed through skin.

Mexico

Occupational exposure limits

| Ingredient | Exposure limits |
|--------------------|---|
| methyl acetate | NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 200 ppm 8 hour(s). LMPE-PPT: 610 mg/m ³ 8 hour(s). LMPE-CT: 760 mg/m ³ 15 minute(s). LMPE-CT: 250 ppm 15 minute(s). |
| diethylene oximine | NOM-010-STPS (Mexico, 9/2000). Absorbed through skin. LMPE-PPT: 20 ppm 8 hour(s). LMPE-PPT: 70 mg/m ³ 8 hour(s). LMPE-CT: 105 mg/m ³ 15 minute(s). LMPE-CT: 30 ppm 15 minute(s). |

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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.

Personal protection

8. Exposure controls/personal protection

- Respiratory** : 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.
- Hands** : 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.
- 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.
- Skin** : 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.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

9. Physical and chemical properties

- Physical state** : Liquid. [Paste.]
- Flash point** : Closed cup: -12.222°C (10°F) [Setaflash.]
- Color** : Beige. [Light]
- Odor** : Solvent(s) [Strong]
- Boiling/condensation point** : 54.444°C (130°F)
- Relative density** : 1.33983
- Volatility** : 28.65% (w/w)
- Evaporation rate** : >1 (butyl acetate = 1)
- VOC (less water, less exempt solvents)** : 36.28 g/l
- Solubility** : Insoluble in the following materials: cold water and hot water.

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Highly reactive or incompatible with the following materials: oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.
- Incompatibility** : Reactive or incompatible with the following materials: metals, acids and alkalis. diethylene oximine: Reactive or incompatible with the following materials: oxidizing materials.
- Conditions of reactivity** : Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

11. Toxicological information

United States

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-----------------------|---------|-------------------------|----------|
| methyl acetate | LD50 Dermal | Rabbit | >5 g/kg | - |
| | LD50 Oral | Rat | >5 g/kg | - |
| diethylene oximine | LD50 Dermal | Rabbit | 500 mg/kg | - |
| | LD50 Oral | Rat | 1050 mg/kg | - |
| oxydipropyl dibenzoate | LD50 Oral | Rat | 3295 mg/kg | - |
| | LC50 Inhalation Vapor | Rat | 11400 mg/m ³ | 4 hours |
| vinyl acetate | LD50 Dermal | Rabbit | 2335 mg/kg | - |
| | LD50 Oral | Rat | 2900 mg/kg | - |

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|--------------------------|---------|-------|-------------------------|-------------|
| methyl acetate | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| diethylene oximine | Eyes - Severe irritant | Rabbit | - | 2 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 500 milligrams | - |

Conclusion/Summary

Skin

: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Eyes

: This product may irritate eyes upon contact.

Respiratory

: High vapor concentrations can cause headaches, dizziness, drowsiness and nausea and may lead to unconsciousness.

Sensitizer

No known significant effects or critical hazards.

Carcinogenicity

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| diethylene oximine | A4 | 3 | - | - | - | - |
| vinyl acetate | A3 | 2B | - | - | - | - |

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

No known significant effects or critical hazards.

Canada

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|--------|---------|------|----------|
| | | | | |

11. Toxicological information

| | | | | |
|------------------------|-----------------------|--------|-------------|---------|
| methyl acetate | LD50 Dermal | Rabbit | >5 g/kg | |
| | LD50 Oral | Rat | >5 g/kg | |
| diethylene oximine | LD50 Dermal | Rabbit | 500 mg/kg | |
| | LD50 Oral | Rat | 1050 mg/kg | |
| oxydipropyl dibenzoate | LD50 Oral | Rat | 3295 mg/kg | |
| | LC50 Inhalation Gas. | Rat | 145000 ppm | 1 hours |
| methanol | LC50 Inhalation Gas. | Rat | 64000 ppm | 4 hours |
| | LD50 Dermal | Rabbit | 15800 mg/kg | |
| vinyl acetate | LD50 Oral | Rat | 5600 mg/kg | |
| | LC50 Inhalation Vapor | Rat | 11400 mg/m3 | 4 hours |
| | LD50 Dermal | Rabbit | 2335 mg/kg | |
| | LD50 Oral | Rat | 2900 mg/kg | |

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|--------------------------|---------|-------|-------------------------|-------------|
| methyl acetate | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| diethylene oximine | Eyes - Severe irritant | Rabbit | - | 2 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 500 milligrams | - |
| methanol | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 40 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |

Conclusion/Summary

- Skin** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Eyes** : This product may irritate eyes upon contact.
- Respiratory** : High vapor concentrations can cause headaches, dizziness, drowsiness and nausea and may lead to unconsciousness.

Sensitizer

No known significant effects or critical hazards.

Carcinogenicity

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| diethylene oximine | A4 | 3 | - | - | - | - |
| vinyl acetate | A3 | 2B | - | - | - | - |

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

No known significant effects or critical hazards.

Mexico

Acute toxicity

11. Toxicological information

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-------------|---------|------------|----------|
| methyl acetate | LD50 Dermal | Rabbit | >5 g/kg | - |
| | LD50 Oral | Rat | >5 g/kg | - |
| diethylene oximine | LD50 Dermal | Rabbit | 500 mg/kg | - |
| | LD50 Oral | Rat | 1050 mg/kg | - |
| oxydipropyl dibenzoate | LD50 Oral | Rat | 3295 mg/kg | - |

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|--------------------------|---------|-------|-------------------------|-------------|
| - | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| - | Eyes - Severe irritant | Rabbit | - | 2 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 500 milligrams | - |

Conclusion/Summary

Skin

: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Eyes

: This product may irritate eyes upon contact.

Respiratory

: High vapor concentrations can cause headaches, dizziness, drowsiness and nausea and may lead to unconsciousness.

Sensitizer

No known significant effects or critical hazards.

Carcinogenicity

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| diethylene oximine | A4 | 3 | - | - | - | - |
| vinyl acetate | A3 | 2B | - | - | - | - |

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

No known significant effects or critical hazards.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--------|---------|----------|
| | | | |

12. Ecological information

| | | | |
|--------------------|--|---|----------------------|
| methyl acetate | Acute LC50 320000 to 348000 ug/L Fresh water | Fish - Pimephales promelas - 28 to 32 days - 17.5 mm - 0.087 g | 96 hours |
| diethylene oximine | Acute EC50 28000 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| vinyl acetate | Acute LC50 >1000 ug/L Acute LC50 10000 to 100000 ug/L Marine water | Fish - Danio rerio | 96 hours |
| | Acute LC50 14000 ug/L Fresh water | Crustaceans - Crangon crangon - Larvae Fish - Pimephales promelas - 1 days | 48 hours 96 hours |

Persistence/degradability

No known significant effects or critical hazards.

Canada

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--|---|----------------------|
| methyl acetate | Acute LC50 320000 to 348000 ug/L Fresh water | Fish - Pimephales promelas - 28 to 32 days - 17.5 mm - 0.087 g | 96 hours |
| diethylene oximine | Acute EC50 28000 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| methanol | Acute LC50 >1000 ug/L Acute EC50 16.912 mg/L Marine water | Fish - Danio rerio | 96 hours |
| | Acute LC50 2500000 ug/L Marine water | Algae - Ulva pertusa Crustaceans - Crangon crangon - Adult | 96 hours 48 hours |
| vinyl acetate | Acute LC50 3289 to 4395 mg/L Fresh water | Daphnia - Daphnia magna - Neonate - <24 hours | 48 hours |
| | Acute LC50 >100000 ug/L Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g | 96 hours |
| | Acute LC50 10000 to 100000 ug/L Marine water Acute LC50 14000 ug/L Fresh water | Crustaceans - Crangon crangon - Larvae Fish - Pimephales promelas - 1 days | 48 hours 96 hours |

Persistence/degradability

No known significant effects or critical hazards.

Mexico

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|---|--|----------|
| methyl acetate | Acute LC50 320000 to 348000 ug/L Fresh water | Fish - Pimephales promelas - 28 to 32 days - 17.5 mm - 0.087 g | 96 hours |
| diethylene oximine | Acute EC50 28000 ug/L Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute LC50 >1000 ug/L | Fish - Danio rerio | 96 hours |

Persistence/degradability

No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal

: The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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







13. Disposal considerations

cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. 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.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|------------------------------|-----------|--|---------|-----|---|------------------------------------|
| DOT Classification | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| TDG Classification | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| Mexico Classification | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| ADR/RID Class | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| IMDG Class | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| IATA-DGR Class | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |

PG* : Packing group

15. Regulatory information

United States

HCS Classification : Flammable liquid
Toxic material
Corrosive material
Carcinogen

U.S. Federal regulations :
TSCA 8(a) PAIR: methyl acetate; mequinol
TSCA 8(a) IUR Exempt/Partial exemption: Not determined

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

15. Regulatory information

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: methyl acetate; diethylene oximine

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Titebond PROvantage Foamboard Adhesive: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313

| | Product name | CAS number | Concentration |
|--|--------------------|------------|---------------|
| Form R - Reporting requirements | diethylene oximine | 110-91-8 | 1 - 5 |
| | vinyl acetate | 108-05-4 | 0.1 - 0.5 |
| Supplier notification | vinyl acetate | 108-05-4 | 0.1 - 0.5 |

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: METHYL ACETATE; MORPHOLINE

New York : The following components are listed: Vinyl acetate

New Jersey : The following components are listed: METHYL ACETATE; ACETIC ACID, METHYL ESTER; VINYL ACETATE; ACETIC ACID ETHENYL ESTER; MORPHOLINE

Pennsylvania : The following components are listed: ACETIC ACID, METHYL ESTER; ACETIC ACID ETHENYL ESTER; MORPHOLINE

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class E: Corrosive material

Canadian lists

Canadian NPRI : None of the components are listed.

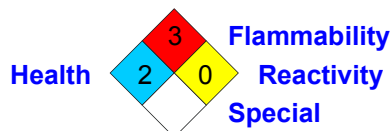
CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

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.

Mexico

Classification :



International regulations

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: Not determined.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
- 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

16. Other information

- Label requirements** : EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. CAUSES DIGESTIVE TRACT BURNS. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT AND SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. MAY CAUSE EYE IRRITATION. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER.

- Hazardous Material Information System (U.S.A.)** :

| | |
|------------------|---|
| Health | 2 |
| Flammability | 3 |
| Physical hazards | 0 |
| | |

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 MSDSs 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.

- 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** : 4/10/2012.

16. Other information

Date of issue : 3/26/2012.

Date of previous issue : 3/2/2012.

Version : 2

✔ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.