

Franklin International

Material Safety Data Sheet

Product name : Titebond Heavy Duty Construction Adhesive

1. Product and company identification

CAS # : mixture
Address : Franklin International
2020 Bruck Street
Columbus OH 43207
Contact person : Franklin Technical Services
Telephone : (800) 877-4583
Emergency phone: : Franklin Security
(614) 445-1300
Reference number : 3195
Product code : 5261
Date of revision : 4/23/2009.
Print date : 1/27/2010.
Chemtrec (24 Hour) : (800) 424 - 9300
Chemtrec International : (703) 527 - 3887
Chemical family : Adhesive.
Product use : Construction Adhesive
Product type : Solvent based

2. Hazards identification

Physical state : Liquid. [Paste.]
Odor : Solvent. [Strong]
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview : DANGER!
EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE. REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES.
Extremely flammable liquid. Harmful by inhalation. May be harmful if swallowed. Severely irritating to eyes. Irritating to respiratory system and skin. Defatting to the skin. Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Contains material that may cause target organ damage. Contains material which can impair female fertility. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects
Inhalation : Toxic by inhalation. Irritating to respiratory system.
Ingestion : Harmful if swallowed.

2. Hazards identification

- Skin** : Irritating to skin.
- Eyes** : Severely irritating to eyes. Risk of serious damage to eyes.
- Potential chronic health effects**
- Chronic effects** : Contains material that may cause target organ damage. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- 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** : Contains material which can impair female fertility.
- Target organs** : Contains material which may cause damage to the following organs: kidneys, liver, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Over-exposure signs/symptoms

- Inhalation** : High vapor concentrations can cause headaches, dizziness, drowsiness and nausea and may lead to unconsciousness. Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Ingestion** : No specific data.
- Skin** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

United States

| <u>Name</u> | <u>CAS number</u> | <u>%</u> |
|-------------|-------------------|----------|
| acetone | 67-64-1 | 10 - 25 |
| n-hexane | 110-54-3 | 10 - 25 |
| toluene | 108-88-3 | 5 - 10 |

Canada

| <u>Name</u> | <u>CAS number</u> | <u>%</u> |
|-------------|-------------------|----------|
| acetone | 67-64-1 | 10 - 25 |
| n-hexane | 110-54-3 | 10 - 25 |
| toluene | 108-88-3 | 5 - 10 |

Mexico

| <u>Name</u> | <u>CAS number</u> | <u>UN number</u> | <u>%</u> | <u>IDLH</u> | <u>Classification</u> | | | |
|-------------|-------------------|------------------|----------|-------------|-----------------------|----------|----------|----------------|
| | | | | | <u>H</u> | <u>F</u> | <u>R</u> | <u>Special</u> |
| toluene | 108-88-3 | UN1993 | 5 - 10 | 500 ppm | 1 | 3 | 0 | |
| acetone | 67-64-1 | UN1993 | 10 - 25 | 2500 ppm | 0 | 3 | 0 | |
| n-hexane | 110-54-3 | UN1993 | 10 - 25 | 1100 ppm | 0 | 3 | 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.
- 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** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- 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).
- Methods for cleaning up**
- 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.

6 . Accidental release measures

- 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.
- Storage** : 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 |
|------------|--|
| acetone | <p>ACGIH TLV (United States, 1/2008). TWA: 500 ppm 8 hour(s). TWA: 1188 mg/m³ 8 hour(s). STEL: 750 ppm 15 minute(s). STEL: 1782 mg/m³ 15 minute(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 750 ppm 8 hour(s). TWA: 1800 mg/m³ 8 hour(s). STEL: 1000 ppm 15 minute(s). STEL: 2400 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2008). TWA: 250 ppm 10 hour(s). TWA: 590 mg/m³ 10 hour(s).</p> <p>OSHA PEL (United States, 11/2006). TWA: 1000 ppm 8 hour(s). TWA: 2400 mg/m³ 8 hour(s).</p> |
| n-hexane | <p>OSHA PEL 1989 (United States, 3/1989). TWA: 50 ppm 8 hour(s). TWA: 180 mg/m³ 8 hour(s).</p> <p>NIOSH REL (United States, 6/2008). TWA: 50 ppm 10 hour(s). TWA: 180 mg/m³ 10 hour(s).</p> <p>ACGIH TLV (United States, 1/2008). Absorbed through skin. TWA: 50 ppm 8 hour(s).</p> |

8 . Exposure controls/personal protection

| | |
|---------|---|
| toluene | <p>OSHA PEL (United States, 11/2006). TWA: 500 ppm 8 hour(s). TWA: 1800 mg/m³ 8 hour(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm 8 hour(s). TWA: 375 mg/m³ 8 hour(s). STEL: 150 ppm 15 minute(s). STEL: 560 mg/m³ 15 minute(s).</p> <p>OSHA PEL Z2 (United States, 11/2006). TWA: 200 ppm 8 hour(s). CEIL: 300 ppm AMP: 500 ppm 10 minute(s).</p> <p>NIOSH REL (United States, 6/2008). TWA: 100 ppm 10 hour(s). TWA: 375 mg/m³ 10 hour(s). STEL: 150 ppm 15 minute(s). STEL: 560 mg/m³ 15 minute(s).</p> <p>ACGIH TLV (United States, 1/2008). TWA: 20 ppm 8 hour(s).</p> |
|---------|---|

Canada

| Occupational exposure limits | | 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 |
| n-hexane | US ACGIH 1/2008 | 50 | - | - | - | - | - | - | - | - | [1] |
| | AB 6/2008 | 50 | 176 | - | - | - | - | - | - | - | [1] |
| | BC 6/2008 | 20 | - | - | - | - | - | - | - | - | [1] |
| | ON 6/2008 | 50 | 176 | - | - | - | - | - | - | - | [1] |
| | QC 6/2008 | 50 | 176 | - | - | - | - | - | - | - | [1] |
| acetone | US ACGIH 1/2008 | 500 | 1188 | - | 750 | 1782 | - | - | - | - | |
| | AB 6/2008 | 750 | 1800 | - | 1000 | 2400 | - | - | - | - | |
| | BC 6/2008 | 250 | - | - | 500 | - | - | - | - | - | |
| | ON 6/2008 | 500 | - | - | 750 | - | - | - | - | - | |
| | QC 6/2008 | 500 | 1190 | - | 1000 | 2380 | - | - | - | - | |
| toluene | US ACGIH 1/2008 | 20 | - | - | - | - | - | - | - | - | |
| | AB 6/2008 | 50 | 188 | - | - | - | - | - | - | - | [1] |
| | BC 6/2008 | 20 | - | - | - | - | - | - | - | - | |
| | ON 6/2008 | 50 | - | - | - | - | - | - | - | - | |
| | QC 6/2008 | 50 | 188 | - | - | - | - | - | - | - | [1] |

[1]Absorbed through skin.

Mexico

| Ingredient | Exposure limits |
|------------|--|
| acetone | <p>NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 1000 ppm 8 hour(s). LMPE-PPT: 2400 mg/m³ 8 hour(s). LMPE-CT: 3000 mg/m³ 15 minute(s). LMPE-CT: 1260 ppm 15 minute(s).</p> |
| n-hexane | <p>NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 50 ppm 8 hour(s). LMPE-PPT: 176 mg/m³ 8 hour(s).</p> |
| toluene | <p>NOM-010-STPS (Mexico, 9/2000). Absorbed through skin. LMPE-PPT: 50 ppm 8 hour(s). LMPE-PPT: 188 mg/m³ 8 hour(s).</p> |

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.

8 . Exposure controls/personal protection

- 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**
- 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: -17.778°C (-0.0004°F) [Setaflash.]
- Flammable limits** : Lower: 1.2%
Upper: 12.8%
- Color** : Beige.
- Odor** : Solvent. [Strong]
- Boiling/condensation point** : 49.444°C (121°F)
- Relative density** : 1.06
- Volatility** : 34% (w/w)
- VOC (less water, less exempt solvents)** : 282 g/l
- Solubility** : Insoluble in the following materials: cold water.

10 . Stability and reactivity

- Chemical stability** : The product is stable.
- 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.
- 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.
- Materials to avoid** : Highly reactive or incompatible with the following materials:
oxidizing materials

10 . Stability and reactivity

- Incompatibility** : Reactive or incompatible with the following materials: acids and alkalis.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Conditions of reactivity** : Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.

11 . Toxicological information

United States

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|------------------|-------------|--------------|-------------|
| n-hexane | LD50 Oral | Rat | 25 gm/kg | - |
| | LDLo | Rat | 9100 mg/kg | - |
| | Intraperitoneal | | | |
| | TDLo Oral | Rat | 20000 mg/kg | - |
| acetone | LC50 Inhalation | Rat | 627000 mg/m3 | 3 minutes |
| | LC50 Inhalation | Rat | 48000 ppm | 4 hours |
| | LD50 Intravenous | Rat | 5500 mg/kg | - |
| | LD50 Oral | Rat | 5800 mg/kg | - |
| | LDLo | Rat | 500 mg/kg | - |
| | Intraperitoneal | | | |
| | LDLo Dermal | Rabbit | 20 mL/kg | - |
| | TDLo Oral | Rat | 5 mL/kg | - |
| | LC50 Inhalation | Rat | 50100 mg/m3 | 8 hours |
| | toluene | LD50 Dermal | Rabbit | 14100 uL/kg |
| LD50 | | Rat | 1332 mg/kg | - |
| Intraperitoneal | | | | |
| LD50 Intravenous | | Rat | 1960 mg/kg | - |
| LD50 Oral | | Rat | 636 mg/kg | - |
| LD50 Unreported | | Rat | 6900 mg/kg | - |
| LDLo | | Rat | 2.5 mL/kg | - |
| Intraperitoneal | | | | |
| TDLo Oral | | Rat | 400 mg/kg | - |
| TDLo Oral | | Rat | 800 mg/kg | - |
| TDLo Oral | | Rat | 1200 mg/kg | - |
| TDLo | | Rat | 900 mg/kg | - |
| Intraperitoneal | | | | |
| TDLo | | Rat | 750 mg/kg | - |
| Intraperitoneal | | | | |
| TDLo | | Rat | 1 gm/kg | - |
| Intraperitoneal | | | | |
| TDLo | Rat | 600 mg/kg | - | |
| Intraperitoneal | | | | |
| LC50 Inhalation | Rat | 49 gm/m3 | 4 hours | |

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

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

Sensitizer

No known significant effects or critical hazards.

11 . Toxicological information**Carcinogenicity****Classification**

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| acetone | A4 | - | - | - | - | - |
| toluene | A4 | 3 | - | - | - | - |

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|-------------------------|-------------------|-----------|-------------------|---------|------------|----------|
| toluene | - | - | - | Rat | Inhalation | - |

Conclusion/Summary : Reproductive toxicant - female

Canada**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|------------------|-----------|--------------|-----------|
| n-hexane | LD50 Oral | Rat | 25 gm/kg | - |
| | LDLo | Rat | 9100 mg/kg | - |
| | Intraperitoneal | | | |
| | TDLo Oral | Rat | 20000 mg/kg | - |
| acetone | LC50 Inhalation | Rat | 627000 mg/m3 | 3 minutes |
| | LC50 Inhalation | Rat | 48000 ppm | 4 hours |
| | LD50 Intravenous | Rat | 5500 mg/kg | - |
| | LD50 Oral | Rat | 5800 mg/kg | - |
| | LDLo Dermal | Rabbit | 20 mL/kg | - |
| | LDLo | Rat | 500 mg/kg | - |
| | Intraperitoneal | | | |
| | TDLo Oral | Rat | 5 mL/kg | - |
| toluene | LC50 Inhalation | Rat | 50100 mg/m3 | 8 hours |
| | LD50 Dermal | Rabbit | 14100 uL/kg | - |
| | LD50 | Rat | 1332 mg/kg | - |
| | Intraperitoneal | | | |
| | LD50 Intravenous | Rat | 1960 mg/kg | - |
| | LD50 Oral | Rat | 636 mg/kg | - |
| | LD50 Unreported | Rat | 6900 mg/kg | - |
| | LDLo | Rat | 2.5 mL/kg | - |
| | Intraperitoneal | | | |
| | TDLo Oral | Rat | 400 mg/kg | - |
| | TDLo Oral | Rat | 800 mg/kg | - |
| | TDLo Oral | Rat | 1200 mg/kg | - |
| | TDLo | Rat | 900 mg/kg | - |
| | Intraperitoneal | | | |
| | TDLo | Rat | 750 mg/kg | - |
| | Intraperitoneal | | | |
| TDLo | Rat | 1 gm/kg | - | |
| Intraperitoneal | | | | |
| TDLo | Rat | 600 mg/kg | - | |
| Intraperitoneal | | | | |
| LC50 Inhalation | Rat | 49 gm/m3 | 4 hours | |

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion**Conclusion/Summary**

11 . Toxicological information

- Skin** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Eyes** : Moderately irritating to eyes.
- 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 |
|-------------------------|-------|------|-----|-------|-----|------|
| acetone | A4 | - | - | - | - | - |
| toluene | A4 | 3 | - | - | - | - |

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|-------------------------|-------------------|-----------|-------------------|---------|------------|----------|
| toluene | - | - | - | Rat | Inhalation | - |

Conclusion/Summary : Reproductive toxicant - female

Mexico

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure | |
|-------------------------|----------------------|------------------|-------------|------------|---|
| toluene | LD50 Dermal | Rabbit | 14100 uL/kg | - | |
| | LD50 Intraperitoneal | Rat | 1332 mg/kg | - | |
| | LD50 Intravenous | Rat | 1960 mg/kg | - | |
| | LD50 Oral | Rat | 636 mg/kg | - | |
| | LD50 Unreported | Rat | 6900 mg/kg | - | |
| | LDLo Intraperitoneal | Rat | 2.5 mL/kg | - | |
| | TDLo Oral | Rat | 400 mg/kg | - | |
| | TDLo Oral | Rat | 800 mg/kg | - | |
| | TDLo Oral | Rat | 1200 mg/kg | - | |
| | TDLo Intraperitoneal | Rat | 900 mg/kg | - | |
| | TDLo Intraperitoneal | Rat | 750 mg/kg | - | |
| | TDLo Intraperitoneal | Rat | 1 gm/kg | - | |
| | TDLo Intraperitoneal | Rat | 600 mg/kg | - | |
| | LC50 Inhalation | Rat | 49 gm/m3 | 4 hours | |
| | acetone | LD50 Intravenous | Rat | 5500 mg/kg | - |
| | | LD50 Oral | Rat | 5800 mg/kg | - |
| | | LDLo Dermal | Rabbit | 20 mL/kg | - |
| LDLo Intraperitoneal | | Rat | 500 mg/kg | - | |
| TDLo Oral | | Rat | 5 mL/kg | - | |
| LC50 Inhalation | | Rat | 50100 mg/m3 | 8 hours | |
| n-hexane | LD50 Oral | Rat | 25 gm/kg | - | |
| | LDLo Intraperitoneal | Rat | 9100 mg/kg | - | |

11 . Toxicological information

| | | | |
|-----------------------|-----|--------------------------|-----------|
| TDL _o Oral | Rat | 20000 mg/kg | - |
| LC50 Inhalation | Rat | 627000 mg/m ³ | 3 minutes |
| LC50 Inhalation | Rat | 48000 ppm | 4 hours |

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

- Skin** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Eyes** : Moderately irritating to eyes.
- 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 |
|-------------------------|-------|------|-----|-------|-----|------|
| acetone | A4 | - | - | - | - | - |
| toluene | A4 | 3 | - | - | - | - |

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|-------------------------|-------------------|-----------|-------------------|---------|------------|----------|
| toluene | - | - | - | Rat | Inhalation | - |

Conclusion/Summary : Reproductive toxicant - female

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

| Product/ingredient name | Test | Result | Species | Exposure |
|-------------------------|------|---|---|----------|
| n-hexane | - | Acute LC50 113000 ug/L Fresh water | Fish - Mozambique tilapia - Tilapia mossambica - 99 mm - 10 g | 96 hours |
| | - | Acute LC50 2500 to 2980 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 31 days - 20.4 mm - 0.123 g | 96 hours |
| acetone | - | Acute LC50 6900 mg/L Fresh water | Daphnia - Water flea - Daphnia magna | 48 hours |
| | - | Acute LC50 5.54 to 6.33 ml/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 1 g | 96 hours |
| | - | Acute LC50 12100000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| | - | Acute LC50 11000000 to 11300000 ug/L Marine water | Fish - Bleak - Alburnus alburnus - 8 cm | 96 hours |

12 . Ecological information

| | | | |
|---------|---|--|----------|
| | ug/L Fresh water | Pimephales promelas - 25 mm | |
| - | Acute LC50 9218000 to 14400000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <12 hours | 48 hours |
| - | Acute LC50 9100000 to 9482000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 2 to 3 months - 19 mm - 0.06 g | 96 hours |
| - | Acute LC50 8800000 ug/L Fresh water | Daphnia - Water flea - Daphnia pulex - <24 hours | 48 hours |
| - | Acute LC50 8300000 ug/L Fresh water | Fish - Bluegill - Lepomis macrochirus - 5.3 to 7.2 cm - 3.5 to 3.9 g | 96 hours |
| - | Acute LC50 8120000 to 8760000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 33 days - 22.6 mm - 0.159 g | 96 hours |
| - | Acute LC50 8098000 to 8640000 ug/L Fresh water | Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <12 hours | 48 hours |
| - | Acute LC50 7810000 ug/L Fresh water | Daphnia - Water flea - Daphnia cucullata - 11 days | 48 hours |
| - | Acute LC50 7550000 ug/L Fresh water | Crustaceans - Aquatic sowbug - Asellus aquaticus | 48 hours |
| - | Acute LC50 7460000 ug/L Fresh water | Daphnia - Water flea - Daphnia cucullata - 11 days | 48 hours |
| - | Acute LC50 7280000 to 7880000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 28 days - 19.2 mm - 0.076 g | 96 hours |
| - | Acute LC50 6210000 to 7030000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 32 days - 18 mm - 0.087 g | 96 hours |
| - | Acute LC50 >100000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g | 96 hours |
| - | Acute LC50 10000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna | 48 hours |
| - | Acute LC50 13300000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| - | Acute LC50 12600000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| toluene | Acute EC50 19600 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - LARVAE | 48 hours |
| - | Acute EC50 6880 to 9830 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| - | Acute EC50 6780 to 7810 ug/L Fresh water | Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g | 96 hours |
| - | Acute EC50 6000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, | 48 hours |

12 . Ecological information

| | | | |
|---|---|---|----------|
| - | Acute LC50 15.5 ppm Marine water | Weanling) Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult | 48 hours |
| - | Acute LC50 15500 ug/L Marine water | Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio | 48 hours |
| - | Acute LC50 9360 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - >90 days | 96 hours |
| - | Acute LC50 8110 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - 0.3 g | 96 hours |
| - | Acute LC50 8090 to 8780 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| - | Acute LC50 7630 to 8480 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| - | Acute LC50 170000 ug/L Marine water | Crustaceans - Dungeness or edible crab - Cancer magister - Zoea | 48 hours |
| - | Acute LC50 97700 to 174700 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| - | Acute LC50 6780 to 7810 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g | 96 hours |
| - | Acute LC50 6410 to 7180 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| - | Acute LC50 86300 to 174700 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| - | Acute LC50 5800 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss | 96 hours |
| - | Acute LC50 5500 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - 1 g | 96 hours |
| - | Acute LC50 310000 to 420000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| - | Acute LC50 7.3 ul/L Marine water | Fish - Striped bass - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 6 g | 96 hours |

Biodegradability

No known significant effects or critical hazards.

Canada

Aquatic ecotoxicity

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

12 . Ecological information

| | | | | |
|----------|---|---|--|----------|
| n-hexane | - | Acute LC50 113000 ug/L Fresh water | Fish - Mozambique tilapia - Tilapia mossambica - 99 mm - 10 g | 96 hours |
| | - | Acute LC50 2500 to 2980 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 31 days - 20.4 mm - 0.123 g | 96 hours |
| acetone | - | Acute LC50 6900 mg/L Fresh water | Daphnia - Water flea - Daphnia magna | 48 hours |
| | - | Acute LC50 5.54 to 6.33 ml/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 1 g | 96 hours |
| | - | Acute LC50 12100000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| | - | Acute LC50 11000000 to 11300000 ug/L Marine water | Fish - Bleak - Alburnus alburnus - 8 cm | 96 hours |
| | - | Acute LC50 10700000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 25 mm | 96 hours |
| | - | Acute LC50 9218000 to 14400000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <12 hours | 48 hours |
| | - | Acute LC50 9100000 to 9482000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 2 to 3 months - 19 mm - 0.06 g | 96 hours |
| | - | Acute LC50 8800000 ug/L Fresh water | Daphnia - Water flea - Daphnia pulex - <24 hours | 48 hours |
| | - | Acute LC50 8300000 ug/L Fresh water | Fish - Bluegill - Lepomis macrochirus - 5.3 to 7.2 cm - 3.5 to 3.9 g | 96 hours |
| | - | Acute LC50 8120000 to 8760000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 33 days - 22.6 mm - 0.159 g | 96 hours |
| | - | Acute LC50 8098000 to 8640000 ug/L Fresh water | Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <12 hours | 48 hours |
| | - | Acute LC50 7810000 ug/L Fresh water | Daphnia - Water flea - Daphnia cucullata - 11 days | 48 hours |
| | - | Acute LC50 7550000 ug/L Fresh water | Crustaceans - Aquatic sowbug - Asellus aquaticus | 48 hours |
| | - | Acute LC50 7460000 ug/L Fresh water | Daphnia - Water flea - Daphnia cucullata - 11 days | 48 hours |
| | - | Acute LC50 7280000 to 7880000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 28 days - 19.2 mm - 0.076 g | 96 hours |
| | - | Acute LC50 6210000 to 7030000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 32 days - 18 mm - 0.087 g | 96 hours |
| | - | Acute LC50 >100000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g | 96 hours |
| | - | Acute LC50 10000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna | 48 hours |
| | - | Acute LC50 13300000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 | 48 hours |

12 . Ecological information

| | | | | |
|---------|---|---|---|----------|
| | - | Acute LC50 12600000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| toluene | - | Acute EC50 19600 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - LARVAE | 48 hours |
| | - | Acute EC50 6880 to 9830 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | - | Acute EC50 6780 to 7810 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g | 96 hours |
| | - | Acute EC50 6000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
| | - | Acute LC50 15.5 ppm Marine water | Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult | 48 hours |
| | - | Acute LC50 15500 ug/L Marine water | Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio | 48 hours |
| | - | Acute LC50 9360 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - >90 days | 96 hours |
| | - | Acute LC50 8110 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - 0.3 g | 96 hours |
| | - | Acute LC50 8090 to 8780 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| | - | Acute LC50 7630 to 8480 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| | - | Acute LC50 170000 ug/L Marine water | Crustaceans - Dungeness or edible crab - Cancer magister - Zoea | 48 hours |
| | - | Acute LC50 6780 to 7810 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g | 96 hours |
| | - | Acute LC50 97700 to 174700 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | - | Acute LC50 6410 to 7180 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| | - | Acute LC50 86300 to 174700 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | - | Acute LC50 5800 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss | 96 hours |
| | - | Acute LC50 5500 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus | 96 hours |

12 . Ecological information

| | | | |
|---|--|---|----------|
| - | Acute LC50 310000 to 420000 ug/L Fresh water | kisutch - FRY - 1 g Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| - | Acute LC50 7.3 ul/L Marine water | Fish - Striped bass - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 6 g | 96 hours |

Biodegradability

No known significant effects or critical hazards.

Mexico

Aquatic ecotoxicity

| Product/ingredient name | Test | Result | Species | Exposure |
|-------------------------|------|---|---|----------|
| toluene | - | Acute EC50 19600 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - LARVAE | 48 hours |
| | - | Acute EC50 6880 to 9830 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | - | Acute EC50 6780 to 7810 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g | 96 hours |
| | - | Acute EC50 6000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
| | - | Acute LC50 15.5 ppm Marine water | Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult | 48 hours |
| | - | Acute LC50 15500 ug/L Marine water | Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio | 48 hours |
| | - | Acute LC50 9360 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - >90 days | 96 hours |
| | - | Acute LC50 8110 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - 0.3 g | 96 hours |
| | - | Acute LC50 8090 to 8780 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| | - | Acute LC50 7630 to 8480 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| | - | Acute LC50 170000 ug/L Marine water | Crustaceans - Dungeness or edible crab - Cancer magister - Zoea | 48 hours |
| | - | Acute LC50 97700 to 174700 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | - | Acute LC50 6780 to 7810 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g | 96 hours |

12 . Ecological information

| | | | | |
|---------|---|---|--|----------|
| | - | Acute LC50 6410 to 7180 ug/L Marine water | Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g | 96 hours |
| | - | Acute LC50 86300 to 174700 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours | 48 hours |
| | - | Acute LC50 5800 ug/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss | 96 hours |
| | - | Acute LC50 5500 ug/L Fresh water | Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - 1 g | 96 hours |
| | - | Acute LC50 310000 to 420000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| | - | Acute LC50 7.3 ul/L Marine water | Fish - Striped bass - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 6 g | 96 hours |
| acetone | - | Acute LC50 6900 mg/L Fresh water | Daphnia - Water flea - Daphnia magna | 48 hours |
| | - | Acute LC50 5.54 to 6.33 ml/L Fresh water | Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 1 g | 96 hours |
| | - | Acute LC50 12100000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - <24 hours | 48 hours |
| | - | Acute LC50 11000000 to 11300000 ug/L Marine water | Fish - Bleak - Alburnus alburnus - 8 cm | 96 hours |
| | - | Acute LC50 10700000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 25 mm | 96 hours |
| | - | Acute LC50 9218000 to 14400000 ug/L Fresh water | Daphnia - Water flea - Daphnia magna - Neonate - <12 hours | 48 hours |
| | - | Acute LC50 9100000 to 9482000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 2 to 3 months - 19 mm - 0.06 g | 96 hours |
| | - | Acute LC50 8800000 ug/L Fresh water | Daphnia - Water flea - Daphnia pulex - <24 hours | 48 hours |
| | - | Acute LC50 8300000 ug/L Fresh water | Fish - Bluegill - Lepomis macrochirus - 5.3 to 7.2 cm - 3.5 to 3.9 g | 96 hours |
| | - | Acute LC50 8120000 to 8760000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 33 days - 22.6 mm - 0.159 g | 96 hours |
| | - | Acute LC50 8098000 to 8640000 ug/L Fresh water | Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <12 hours | 48 hours |
| | - | Acute LC50 7810000 ug/L Fresh water | Daphnia - Water flea - Daphnia cucullata - 11 days | 48 hours |
| | - | Acute LC50 7550000 ug/L Fresh water | Crustaceans - Aquatic sowbug - Asellus aquaticus | 48 hours |
| | - | Acute LC50 7460000 ug/L Fresh water | Daphnia - Water flea - Daphnia cucullata - 11 days | 48 hours |
| | - | Acute LC50 7280000 to 7880000 ug/L Fresh water | Fish - Fathead minnow - Pimephales promelas - 28 | 96 hours |

12 . Ecological information

| | | | |
|----------|---|--|--|
| | - | Acute LC50 6210000 to 7030000 ug/L Fresh water | days - 19.2 mm - 0.076 g Fish - Fathead minnow - 96 hours Pimephales promelas - 32 |
| | - | Acute LC50 >100000 ug/L Fresh water | days - 18 mm - 0.087 g Fish - Fathead minnow - 96 hours Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g |
| | - | Acute LC50 10000 ug/L Fresh water | Daphnia - Water flea - 48 hours Daphnia magna |
| | - | Acute LC50 13300000 ug/L Fresh water | Daphnia - Water flea - 48 hours Daphnia magna - <24 hours |
| | - | Acute LC50 12600000 ug/L Fresh water | Daphnia - Water flea - 48 hours Daphnia magna - <24 hours |
| n-hexane | - | Acute LC50 113000 ug/L Fresh water | Fish - Mozambique tilapia - 96 hours Tilapia mossambica - 99 mm - 10 g |
| | - | Acute LC50 2500 to 2980 ug/L Fresh water | Fish - Fathead minnow - 96 hours Pimephales promelas - 31 days - 20.4 mm - 0.123 g |

Biodegradability

No known significant effects or critical hazards.

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



13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. 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 | Consumer commodity | ORM-D | III | | - |
| TDG Classification | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| Mexico Classification | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | - |
| | | | | | | |

14 . Transport information

| | | | | | | |
|-----------------------|--------|--|---|-----|---|------------------------------------|
| ADR/RID Class | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | - |
| IMDG Class | 1133 | ADHESIVES, containing flammable liquid | 3 | III |  | Remarks Limited quantity |
| IATA-DGR Class | ID8000 | Consumer commodity | 9 | III |  | - |

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Flammable liquid
Toxic material
Irritating material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
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: toluene; acetone; n-hexane; Benzene, ethenyl-, polymer with 1,3-butadiene
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Titebond Heavy Duty Construction Adhesive: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 313

| | <u>Product name</u> | <u>CAS number</u> | <u>Concentration</u> |
|--|---------------------|-------------------|----------------------|
| Form R - Reporting requirements | acetone | 67-64-1 | 10 - 25 |
| | n-hexane | 110-54-3 | 10 - 25 |
| | toluene | 108-88-3 | 5 - 10 |
| Supplier notification | n-hexane | 110-54-3 | 10 - 25 |
| | toluene | 108-88-3 | 5 - 10 |

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 Spill:** None of the components are listed.
Massachusetts Substances: The following components are listed: HEXANE; ACETONE; TOLUENE
New Jersey Hazardous Substances: The following components are listed: n-HEXANE; ACETONE; TOLUENE
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: HEXANE; 2-PROPANONE; BENZENE, METHYL-

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

15 . Regulatory information

| <u>Ingredient name</u> | <u>Cancer</u> | <u>Reproductive</u> | <u>No significant risk level</u> | <u>Maximum acceptable dosage level</u> |
|------------------------|---------------|---------------------|----------------------------------|--|
| toluene | No. | Yes. | No. | 7000 µg/day (ingestion) 13000 µg/day (inhalation) |

Canada**WHMIS (Canada)**

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

Canadian lists

- : **CEPA Toxic substances:** The following components are listed: Volatile organic compounds
- Canadian ARET:** None of the components are listed.
- Canadian NPRI:** The following components are listed: n-Hexane; Volatile organic compounds; Toluene
- Alberta Designated Substances:** None of the components are listed.
- Ontario Designated Substances:** None of the components are listed.
- Quebec Designated Substances:** None of the components are listed.

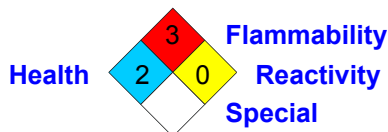
Canada inventory

- : Not determined.

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****International lists**

- : **Australia inventory (AICS):** Not determined.
- China inventory (IECSC):** Not determined.
- Japan inventory (ENCS):** Not determined.
- Japan inventory (ISHL):** Not determined.
- Korea inventory (KECI):** Not determined.
- New Zealand Inventory of Chemicals (NZIoC):** Not determined.
- Philippines inventory (PICCS):** Not determined.

Chemical Weapons

- : Not listed

Convention List Schedule I Chemicals**Chemical Weapons**

- : Not listed

Convention List Schedule II Chemicals**Chemical Weapons**

- : Not listed

Convention List Schedule III Chemicals

16 . Other information

Label requirements : EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE. REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES.

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.

Date of printing : 1/27/2010.

Date of issue : 4/23/2009.

Date of previous issue : 1/20/2009.

Version : 1

☑ 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.