

Franklin International

Material Safety Data Sheet

Titebond Retaining Wall Adhesive

1. Product and company identification

CAS #	: mixture
Synonym	: None known.
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
Reference number	: 3195
Product code	: 3131
Date of revision	: 10/25/2012.
Print date	: 10/26/2012.
Chemtrec (24 Hour)	: (800) 424 - 9300
Chemtrec International	: (703) 527 - 3887
Product use	: Construction Adhesive
Product type	: Solvent based

2. Hazards identification

Emergency overview

Physical state	: Liquid. [Paste.]
Color	: Beige.
Odor	: Solvent. [Strong]
Signal word	: DANGER!
Hazard statements	: 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. REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES.
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. 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.
Ingestion	: Harmful if swallowed.
Skin	: Irritating to skin.
Eyes	: Severely irritating to eyes. Risk of serious damage to eyes.

2. Hazards identification

Potential chronic health effects

- Chronic effects** : 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: blood, kidneys, the nervous system, the reproductive system, 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
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Medical conditions aggravated by over-exposure** : None known.

See toxicological information (Section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
acetone	67-64-1	10 - 25
n-hexane	110-54-3	10 - 25
toluene	108-88-3	5 - 10
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	1 - 5

Canada

3. Composition/information on ingredients

Name	CAS number	%
acetone	67-64-1	10 - 25
n-hexane	110-54-3	10 - 25
toluene	108-88-3	5 - 10
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	1 - 5

Mexico

Name	CAS number	UN number	%	IDLH	Classification			
					H	F	R	Special
n-hexane	110-54-3	UN1993	10 - 25	1100 ppm	1	3	0	-
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	Not available.	1 - 5	2500 mg/m ³	2	0	0	-
acetone	67-64-1	UN1993	10 - 25	2500 ppm	2	3	0	-
toluene	108-88-3	UN1993	5 - 10	500 ppm	2	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.

5. Fire-fighting measures

- 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.
- 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** : Do not store above the following temperature: 43.333°C (110°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
acetone	<p>ACGIH TLV (United States, 3/2012). 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, 6/2009). TWA: 250 ppm 10 hour(s). TWA: 590 mg/m³ 10 hour(s).</p> <p>OSHA PEL (United States, 6/2010). 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, 6/2009). TWA: 50 ppm 10 hour(s). TWA: 180 mg/m³ 10 hour(s).</p> <p>ACGIH TLV (United States, 3/2012). Absorbed through skin. TWA: 50 ppm 8 hour(s).</p> <p>OSHA PEL (United States, 6/2010). TWA: 500 ppm 8 hour(s). TWA: 1800 mg/m³ 8 hour(s).</p>
toluene	<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, 6/2009). 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, 3/2012). TWA: 20 ppm 8 hour(s).</p>
Distillates (petroleum), hydrotreated heavy naphthenic	<p>ACGIH TLV (United States, 3/2012). TWA: 5 mg/m³ 8 hour(s). Form: Inhalable fraction</p> <p>NIOSH REL (United States, 6/2009). TWA: 5 mg/m³ 10 hour(s). Form: Mist STEL: 10 mg/m³ 15 minute(s). Form: Mist</p> <p>OSHA PEL (United States, 6/2010). TWA: 5 mg/m³ 8 hour(s).</p>

Canada

8. Exposure controls/personal protection

<u>Occupational exposure limits</u>		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
n-hexane	US ACGIH 3/2012	50	-	-	-	-	-	-	-	-	[1]
	AB 4/2009	50	176	-	-	-	-	-	-	-	[1]
	BC 9/2011	20	-	-	-	-	-	-	-	-	[1]
	ON 7/2010	50	-	-	-	-	-	-	-	-	[1]
	QC 9/2011	50	176	-	-	-	-	-	-	-	[1]
acetone	US ACGIH 3/2012	500	1188	-	750	1782	-	-	-	-	
	AB 4/2009	500	1200	-	750	1800	-	-	-	-	
	BC 9/2011	250	-	-	500	-	-	-	-	-	
	ON 7/2010	500	1188	-	750	1782	-	-	-	-	
	QC 9/2011	500	1190	-	1000	2380	-	-	-	-	
toluene	US ACGIH 3/2012	20	-	-	-	-	-	-	-	-	
	AB 4/2009	50	188	-	-	-	-	-	-	-	[1]
	BC 9/2011	20	-	-	-	-	-	-	-	-	
	ON 7/2010	20	-	-	-	-	-	-	-	-	
	QC 9/2011	50	188	-	-	-	-	-	-	-	[1]
Distillates (petroleum), hydrotreated heavy naphthenic	US ACGIH 3/2012	-	5	-	-	-	-	-	-	-	[a]
	ON 7/2010	-	5	-	-	10	-	-	-	-	[b]
	QC 9/2011	-	5	-	-	10	-	-	-	-	[b]

[1] Absorbed through skin.

Form: [a] Inhalable fraction [b] mist

Mexico

Occupational exposure limits

Ingredient	Exposure limits
acetone	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 1000 ppm 8 hour(s). LMPE-PPT: 2400 mg/m ³ 8 hour(s). LMPE-CT: 3000 mg/m ³ 15 minute(s). LMPE-CT: 1260 ppm 15 minute(s).
n-hexane	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 50 ppm 8 hour(s). LMPE-PPT: 176 mg/m ³ 8 hour(s).
toluene	NOM-010-STPS (Mexico, 9/2000). Absorbed through skin. LMPE-PPT: 50 ppm 8 hour(s). LMPE-PPT: 188 mg/m ³ 8 hour(s).
Distillates (petroleum), hydrotreated heavy naphthenic	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 5 mg/m ³ 8 hour(s). Form: mist LMPE-CT: 10 mg/m ³ 15 minute(s). Form: mist

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: -17.778°C (-0.0004°F) [Setaflash.]
- Auto-ignition temperature** : 252°C (485.6°F)
- Flammable limits** : Lower: 1.2%
Upper: 12.8%
- Color** : Beige.
- Odor** : Solvent. [Strong]
- Boiling/condensation point** : 49.444°C (121°F)
- Relative density** : 1.073
- Volatility** : 34% (w/w)
- VOC (less water, less exempt solvents)** : 303 g/l
- Solubility** : Insoluble in the following materials: cold 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: acids and alkalis.
- 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	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	15840 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
acetone	LD50 Oral	Rat	5800 mg/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-hexane	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Distillates (petroleum), hydrotreated heavy naphthenic	Eyes - Mild irritant	Human	-	186300 parts per million	-
	Eyes - Mild irritant	Rabbit	-	10 microliters	-
acetone	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
toluene	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	395 milligrams	-
toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
toluene	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
toluene	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
toluene	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** : 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

11. Toxicological information

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
acetone	A4	-	-	-	-	-
toluene	A4	3	-	-	-	-
Distillates (petroleum), hydrotreated heavy naphthenic	A4	-	-	-	-	-

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	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
acetone	LD50 Oral	Rat	5800 mg/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	>5000 mg/kg	-

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-hexane	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
acetone	Eyes - Mild irritant	Human	-	186300 parts per million	-
	Eyes - Mild irritant	Rabbit	-	10 microliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	395 milligrams	-
toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-

11. Toxicological information

Distillates (petroleum), hydrotreated heavy naphthenic	Skin - Moderate irritant	Rabbit	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	500 milligrams	-
	Skin - Severe irritant	Rabbit	500 milligrams	-

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	-	-	-	-
Distillates (petroleum), hydrotreated heavy naphthenic	A4	-	-	-	-	-

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
n-hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	5800 mg/kg	-
	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-

Chronic toxicity

No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation

11. Toxicological information

-	Eyes - Mild irritant	Rabbit	10 milligrams
-	Skin - Severe irritant	Rabbit	500 milligrams
-	Eyes - Mild irritant	Human	186300 parts per million
	Eyes - Mild irritant	Rabbit	10 microliters
	Eyes - Moderate irritant	Rabbit	24 hours 20 milligrams
	Eyes - Severe irritant	Rabbit	20 milligrams
	Skin - Mild irritant	Rabbit	24 hours 500 milligrams
	Skin - Mild irritant	Rabbit	395 milligrams
-	Eyes - Mild irritant	Rabbit	0.5 minutes 100 milligrams
	Eyes - Mild irritant	Rabbit	870 Micrograms
	Eyes - Severe irritant	Rabbit	24 hours 2 milligrams
	Skin - Mild irritant	Pig	24 hours 250 microliters
	Skin - Mild irritant	Rabbit	435 milligrams
	Skin - Moderate irritant	Rabbit	24 hours 20 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

: 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	-	-	-	-
Distillates (petroleum), hydrotreated heavy naphthenic	A4	-	-	-	-	-

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	-

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
n-hexane	Acute LC50 2500 to 2980 ug/L Fresh water	Fish - Pimephales promelas - 31 days - 20.4 mm - 0.123 g	96 hours
acetone	Acute EC50 20.565 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 6000000 ug/L Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 10000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata - 4 to 12 months - 2 to 10 cm	96 hours
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate - 6 to 24 hours	21 days
toluene	Acute EC50 12500 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 ug/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult - 9 mm - 0.017 g	48 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 ug/L Fresh water	Fish - Oncorhynchus kisutch - Fry - 1 g	96 hours
	Chronic NOEC 1000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	21 days

Persistence/degradability

No known significant effects or critical hazards.

Canada

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
n-hexane	Acute LC50 2500 to 2980 ug/L Fresh water	Fish - Pimephales promelas - 31 days - 20.4 mm - 0.123 g	96 hours
acetone	Acute EC50 20.565 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 6000000 ug/L Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 10000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata - 4 to 12 months - 2 to 10 cm	96 hours
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate - 6 to 24 hours	21 days
toluene	Acute EC50 12500 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 ug/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult - 9 mm - 0.017 g	48 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 ug/L Fresh water	Fish - Oncorhynchus kisutch - Fry - 1 g	96 hours
	Chronic NOEC 1000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	21 days

Persistence/degradability

No known significant effects or critical hazards.

12. Ecological information

Mexico

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
n-hexane	Acute LC50 2500 to 2980 ug/L Fresh water	Fish - Pimephales promelas - 31 days - 20.4 mm - 0.123 g	96 hours
acetone	Acute EC50 20.565 mg/L Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 6000000 ug/L Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 10000 ug/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata - 4 to 12 months - 2 to 10 cm	96 hours
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate - 6 to 24 hours	21 days
toluene	Acute EC50 12500 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 ug/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult - 9 mm - 0.017 g	48 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 ug/L Fresh water	Fish - Oncorhynchus kisutch - Fry - 1 g	96 hours
	Chronic NOEC 1000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	21 days

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 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

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
Irritating material

U.S. Federal regulations :

TSCA 8(a) IUR Exempt/Partial exemption: Not determined

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

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

Titebond Retaining Wall Adhesive: Fire hazard, Immediate (acute) health hazard,
Delayed (chronic) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

15. Regulatory information

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 313

	Product name	CAS number	Concentration
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 : The following components are listed: HEXANE; ACETONE; TOLUENE

New York : The following components are listed: Hexane; Acetone; 2-Propanone; Toluene

New Jersey : The following components are listed: n-HEXANE; HEXANE; MINERAL OIL (UNTREATED and MILDLY TREATED); ACETONE; 2-PROPANONE; TOLUENE; BENZENE, METHYL-

Pennsylvania : 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.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
toluene	No.	Yes.	No.	7000 µg/day (ingestion)

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

Canadian NPRI : The following components are listed: n-Hexane; Volatile organic compounds; Toluene

CEPA Toxic substances : The following components are listed: Volatile organic compounds

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. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. 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.

- 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** : 10/26/2012.
Date of issue : 10/25/2012.

16. Other information

Date of previous issue : 10/24/2012.

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.