




Conforms to ANSI Z400.1-2010 Standard - HCS 2012

Protective Clothing	General Hazard	DOT
		

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : HEMPEL'S CURING AGENT 98930
 Product identity : 9893000000
 Product type : Curing agent

1.2 Relevant identified uses of the substance or mixture and uses advised against

Field of application : used only as part of two- or multi component products.
 Ready-for-use mixture : (see base component)
 Identified uses : Industrial/Professional use
 TSCA : **Unless otherwise stated All components are listed or exempted.**

1.3 Details of the supplier of the safety data sheet

Company details : HEMPEL (USA), Inc.
 600 Conroe Park North Drive
 Conroe, Texas 77303
 Toll free: (800) 678-6641,
 if outside area codes 713, 281, 409, 936
 Regular phone number: (936) 523-6000
 E-mail Hempel@Hempel.com

1.4 Emergency telephone number (with hours of operation)

For Transportation Emergencies : CHEMTREC: **1-800-424-9300** (Toll-free in the U.S., Canada and the U.S. Virgin Islands) **703-527-3887**
 (24 hours) For calls originating elsewhere (Collect calls are accepted). Contract number: CCN10384
 To preserve the effectiveness of arrangements for providing accurate and timely emergency response information, the basic identifying information (shipper name or contract number) must be included on shipping papers.
 If the purchaser of this product is going to be shipping this product to other locations, the purchaser must arrange for its own Emergency Information Provider to respond to transport incidents. Hempel's 24 hour response contract does not cover non-Hempel shipments.
 For all other information : In USA toll free calling available: 1-800- 678-6641 or (936)-523-6000
 (8 AM - 5 PM CST) See Section 4 of the safety data sheet (first aid measures).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 GHS Classification : FLAMMABLE LIQUIDS - Category 3
 ACUTE TOXICITY (inhalation) - Category 4
 EYE IRRITATION - Category 2A
 RESPIRATORY SENSITIZATION - Category 1
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H226 - Flammable liquid and vapor.
 H332 - Harmful if inhaled.
 H319 - Causes serious eye irritation.
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 - May cause an allergic skin reaction.
 H351 - Suspected of causing cancer.
 H335 - May cause respiratory irritation.

Precautionary statements :

Prevention :

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response :

IF exposed or concerned: Get medical attention. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage :

Store locked up. Store in a well-ventilated place. Keep cool.

Disposal :

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements :

Avoid contact with skin and clothing. Wash thoroughly after handling.

2.3 Other hazards

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

SECTION 3: Composition/information on ingredients

Product definition :

Mixture

Physical state :

Liquid.

Product/ingredient name	Identifiers	%	GHS Classification
hexamethylene-1,6-diisocyanate homopolymer	28182-81-2	≥75 - ≤90	ACUTE TOXICITY (inhalation) - Category 4 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
4-methylpentan-2-one	108-10-1	≥5 - ≤10	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
n-butyl acetate	123-86-4	≥3 - ≤5	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
solvent naphtha (petroleum), light arom.	64742-95-6	≥3 - ≤5	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

SECTION 3: Composition/information on ingredients

tosyl isocyanate	4083-64-1	≥1 - ≤3	(Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
hexamethylene-di-isocyanate	822-06-0	≤0.3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

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

Occupational exposure limits, if available, are listed in Section 8.

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.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
 If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).
- 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. In all cases of doubt, or when symptoms persist, seek medical attention.
- Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and get medical attention immediately.
- Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.
- 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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact : Causes serious eye irritation.
- Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.
- Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

SECTION 4: First aid measures

Inhalation :	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
Skin contact :	Adverse symptoms may include the following: irritation redness dryness cracking
Ingestion :	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician :	If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed.
Specific treatments :	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media :	Recommended: alcohol resistant foam, CO ₂ , powders, water spray. Not to be used: waterjet.
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5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products :	Decomposition products may include the following materials: carbon oxides nitrogen oxides sulfur oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 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). Water polluting material.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

SECTION 6: Accidental release measures

See Section 1 for emergency contact information.
 See Section 8 for information on appropriate personal protective equipment.
 See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used. Contains isocyanates. Exposure to isocyanate may result in acute irritation and/or sensitisation when breathing.

Care should be taken when re-opening partly-used containers.

Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations for flammable liquids. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids as well as of amines, alcohols and water. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.
 This product may be applied using several application techniques and methods of handling may be different for each. Application techniques include [but are not limited to] brushing, rolling, and spray application [conventional, HPLV, airless, pleural component or aerosol can]. Avoid the breathing of vapors and, if spraying, do not breath spray mist or aerosols.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Product/ingredient name	Exposure limit values
4-methylpentan-2-one	ACGIH TLV (United States, 3/2016). STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. NIOSH REL (United States, 10/2013). STEL: 300 mg/m ³ 15 minutes. STEL: 75 ppm 15 minutes. TWA: 205 mg/m ³ 10 hours. TWA: 50 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 410 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
n-butyl acetate	NIOSH REL (United States, 10/2013). STEL: 950 mg/m ³ 15 minutes. STEL: 200 ppm 15 minutes. TWA: 710 mg/m ³ 10 hours. TWA: 150 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 710 mg/m ³ 8 hours. TWA: 150 ppm 8 hours. ACGIH TLV (United States, 3/2016). STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.
solvent naphtha (petroleum), light arom.	ACGIH TLV (United States). TWA Tentative: 25 ppm 8 hours.
hexamethylene-di-isocyanate	ACGIH TLV (United States, 3/2016). TWA: 0.03 mg/m ³ 8 hours. TWA: 0.005 ppm 8 hours. NIOSH REL (United States, 10/2013).

SECTION 8: Exposure controls/personal protection

CEIL: 0.02 ppm 10 minutes. CEIL: 0.14 mg/m ³ 10 minutes. TWA: 0.005 ppm 10 hours. TWA: 0.035 mg/m ³ 10 hours. OSHA PEL (United States, 6/2016). Absorbed through skin. TWA: 5 mg/m ³ , (as CN) 8 hours.
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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. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into work areas by controlling it at its source. Use local and general exhaust ventilation to effectively remove and prevent buildup of mists/vapors/fumes generated from the handling of this product.

Note: Local exhaust ventilation is designed to capture an emitted contaminant at or near its source, before the contaminant has a chance to disperse into the workplace air. General exhaust ventilation, also called dilution ventilation, is different from local exhaust ventilation because instead of capturing emissions at their source and removing them from the air, general exhaust ventilation allows the contaminant to be emitted into the workplace air and then dilutes the concentration of the contaminant to an acceptable level (e.g., to the PEL or below).

Individual protection measures

General : Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.

Hygiene measures : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Hand protection : Wear chemical-resistant gloves in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.
Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice:

Recommended: Silver Shield / 4H gloves, polyvinyl alcohol (PVA), Viton®
May be used: nitrile rubber, butyl rubber
Short term exposure: neoprene rubber, natural rubber (latex), polyvinyl chloride (PVC)

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.
Wear suitable protective clothing. Always wear protective clothing when spraying.

Respiratory protection : If working areas have insufficient ventilation, wear half or totally covering mask equipped with gas filter of type Organic Vapor, when grinding use particle filter of type P95, P99 or P100. When spraying use a combined filter (organic vapor / HEPA or organic vapor / P100 type). Be sure to use approved/certified respirator or equivalent. Always wear an air-fed respirator when spraying in a continuous and prolonged work situation (e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter).

Protective clothing (pictograms) :



Note: Application of paint products by spraying requires additional safety precautions: Full body suit, Full face respirator with air supplied.

Environmental exposure controls

SECTION 8: Exposure controls/personal protection

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Odor :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	Testing not relevant or not possible due to nature of the product.
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 28°C (82.4°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials. Slightly flammable in the presence of the following materials or conditions: reducing materials.
Upper/lower flammability or explosive limits :	1.4 - 7.6 vol %
Vapor pressure :	0.01 kPa This is based on data for the following ingredient: hexamethylene-1,6-diisocyanate homopolymer
Vapor density :	Testing not relevant or not possible due to nature of the product.
Relative density :	1.092 g/cm ³
Solubility(ies) :	Partially soluble in the following materials: cold water and hot water.
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Testing not relevant or not possible due to nature of the product.
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Testing not relevant or not possible due to nature of the product.
Explosive properties :	Slightly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Oxidizing properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight (Included exempt solvent(s)):	17.8 % (w/w)
Water % by weight :	Weighted average: 0 %
VOC content (Coatings) :	1.62 lbs/gal (194.1 g/l)
VOC content (Regulatory) :	1.62 lbs/gal (194.1 g/l)
TOC Content (Volatile) :	Weighted average: 144 g/l
Solvent Gas :	Weighted average: 0.043 m ³ /l

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 10: Stability and reactivity

10.4 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.

10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidizing materials and reducing materials.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides nitrogen oxides sulfur oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Isocyanate containing products have characteristics that include producing acute irritation and/or sensitisation when breathing, subsequent asthmatic problems and lung contractions. Sensitised people can, as a result from this, show asthmatic symptoms with exposure to atmospheric concentrations far below the TLV. Repeated exposures will lead to permanent damage to the respiratory system.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
hexamethylene-1,6-diisocyanate homopolymer	LC50 Inhalation Dusts and mists	Rat	18500 mg/m ³	1 hours
	LC50 Inhalation Dusts and mists	Rat	1.5 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
4-methylpentan-2-one n-butyl acetate	LD50 Oral	Rat	>2500 mg/kg	-
	LD Dermal	Rabbit	>3 g/kg	-
	LC50 Inhalation Vapor	Rat	>21 mg/l	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
solvent naphtha (petroleum), light arom.	LD50 Oral	Rat	10768 mg/kg	-
	LC50 Inhalation Vapor	Rat	6193 mg/m ³	4 hours
	LD50 Dermal	Rabbit	3160 mg/kg	-
tosyl isocyanate	LD50 Oral	Rat	3492 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>640 mg/l	1 hours
	LD50 Oral	Rat	2234 mg/kg	-
hexamethylene-di-isocyanate	LC50 Inhalation Dusts and mists	Rat	124 mg/m ³	4 hours
	LC50 Inhalation Vapor	Rat	0.124 mg/l	4 hours
	LD50 Dermal	Rabbit	>7000 mg/kg	-
	LD50 Oral	Rat	746 mg/kg	-

Acute toxicity estimates

Route	ATE value
Oral	61923.4 mg/kg
Dermal	80752.2 mg/kg
Inhalation (vapors)	142.9 mg/l
Inhalation (dusts and mists)	2.11 mg/l

Irritation/Corrosion

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure
hexamethylene-1,6-diisocyanate homopolymer	Skin - Mild irritant	Rabbit	-	-
4-methylpentan-2-one	Eyes - Mild irritant	Rabbit	-	-
	Respiratory - Mild irritant	Rabbit	-	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters
n-butyl acetate	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams
	Eyes - Mild irritant	Rabbit	-	-
solvent naphtha (petroleum), light arom.	Respiratory - Mild irritant	Rabbit	-	-
	Eyes - Mild irritant	Rabbit	-	24 hours 100 microliters
	Respiratory - Mild irritant	Rabbit	-	-
tosyl isocyanate	Eyes - Moderate irritant	Rabbit	-	100 microliters
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters
	Skin - Severe irritant	Rabbit	-	-
hexamethylene-di-isocyanate	Eyes - Severe irritant	Rabbit	-	-
	Respiratory - Severe irritant	Rabbit	-	-
	Respiratory - Severe irritant	Rabbit	-	-

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
hexamethylene-1,6-diisocyanate homopolymer	skin	Guinea pig	Sensitizing
hexamethylene-di-isocyanate	skin	Guinea pig	Sensitizing

Carcinogen Classification

Product/ingredient name	IARC	NTP	OSHA
4-methylpentan-2-one	2B	-	-

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
hexamethylene-1,6-diisocyanate homopolymer	Category 3	Not applicable.	Respiratory tract irritation
4-methylpentan-2-one	Category 3	Not applicable.	Respiratory tract irritation
n-butyl acetate	Category 3	Not applicable.	Narcotic effects
solvent naphtha (petroleum), light arom.	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
tosyl isocyanate	Category 3	Not applicable.	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	Not applicable.	Respiratory tract irritation

Aspiration hazard

Product/ingredient name	Result
solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains hexamethylene-1,6-diisocyanate homopolymer, tosyl isocyanate, hexamethylene-di-isocyanate. May produce an allergic reaction.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Harmful to aquatic life with long lasting effects.

When spilled, this product may act as an oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of a body of water. Oils of any kind can cause: (a) drowning of waterfowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility; (b) lethal effect on fish by coating gill surfaces, preventing respiration; (c) potential fish kills resulting from alteration in biochemical oxygen demand; (d) asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom; and (e) adverse aesthetic effects of fouled shoreline and beaches.

Product/ingredient name	Result	Species	Exposure
hexamethylene-1,6-diisocyanate homopolymer	Acute EC50 >100 mg/l	Algae	72 hours
4-methylpentan-2-one	Chronic NOEC 7800 - 39000 µg/l Fresh water Chronic NOEC 168 mg/l Fresh water	Daphnia - Daphnia magna Fish - Pimephales promelas - Embryo	21 days 33 days
n-butyl acetate	Acute EC50 44 mg/l	Daphnia	48 hours
solvent naphtha (petroleum), light arom.	Acute EC50 2.6 mg/l	Algae - Pseudokirchneriella subcapitata (green algae)	96 hours
	Acute EC50 6.14 mg/l Acute LC50 9.22 mg/l	Daphnia - Daphnia magna Fish - Oncorhynchus mykiss (rainbow trout)	48 hours 96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
hexamethylene-1,6-diisocyanate homopolymer	-	1 % - Not readily - 28 days	-	-
n-butyl acetate	-	90 % - Readily - 28 days	-	-
solvent naphtha (petroleum), light arom.	-	>70 % - Readily - 28 days	-	-
hexamethylene-di-isocyanate	-	42 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
hexamethylene-1,6-diisocyanate homopolymer	-	-	Not readily
n-butyl acetate	-	-	Readily
solvent naphtha (petroleum), light arom.	-	-	Readily
hexamethylene-di-isocyanate	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
hexamethylene-1,6-diisocyanate homopolymer	3.15	367.7	low
4-methylpentan-2-one	1.9	-	low
n-butyl acetate	2.3	-	low
solvent naphtha (petroleum), light arom.	-	10 - 2500	high
hexamethylene-di-isocyanate	0.02	57.63	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : No known data available in our database.

Mobility : No known data available in our database.

12.5 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7 and Section 8 for additional handling information and protection of employees.






The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. 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.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Methyl isobutyl ketone (I); 4-Methyl-2-pentanone (I)	108-10-1	Listed	U161

SECTION 14: Transport information

Transport may take place according to national regulation or DOT for transport by road and by train, IMDG for transport by sea, IATA for Air shipment. Refer to specific Dangerous Goods Transport requirements under 49CFR, ICAO and IATA.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
DOT Code	UN1263	PAINT	3 - 	III	No.	
TDG Code	UN1263	PAINT	3 - 	III	No.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).
SCT Code	UN1263	PAINT	3 - 	III	No.	-
IMDG Code	UN1263	PAINT	3 - 	III	No.	<u>Emergency schedules (EmS)</u> F-E, S-E
IATA Code	UN1263	PAINT	3 - 	III	No.	-

Code : Classification

PG* : Packing group

Env.* : Environmental hazards

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations :

All components are listed or exempted.

TSCA 8(a) PAIR: naphthalene; chlorobenzene

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

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

TSCA 8(c) calls for record of SAR: hexamethylene-di-isocyanate

Clean Water Act (CWA) 307: hexamethylene-di-isocyanate; naphthalene; chlorobenzene

Clean Water Act (CWA) 311: n-butyl acetate; naphthalene; chlorobenzene

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

Product/ingredient name	CAS number	Concentration
hexamethylene-di-isocyanate	822-06-0	0.17987
naphthalene	91-20-3	0.089888
4-methylpentan-2-one	108-10-1	8.7411
chlorobenzene	108-90-7	0.0012682

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) : Listed

SARA 302/304 - SARA 311/312:

SARA 302/304: No products were found.

SARA 311/312 Hazards identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

Product/ingredient name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
hexamethylene-1,6-diisocyanate homopolymer	75 - 100	No.	No.	No.	Yes.	No.
4-methylpentan-2-one	5 - 10	Yes.	No.	No.	Yes.	Yes.
n-butyl acetate	3 - 5	Yes.	No.	No.	Yes.	No.
solvent naphtha (petroleum), light arom.	3 - 5	Yes.	No.	No.	Yes.	No.
tosyl isocyanate	1 - 3	No.	No.	No.	Yes.	No.
hexamethylene-di-isocyanate	0.1 - 0.5	No.	No.	No.	Yes.	No.

SARA 313 :

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.

Form R - Reporting requirements :

Product/ingredient name	CAS number	Concentration
4-methylpentan-2-one	108-10-1	5 - 10

Supplier notification :

Product/ingredient name	CAS number	Concentration
4-methylpentan-2-one	108-10-1	5 - 10

State regulations :

Connecticut Carcinogen Reporting: None of the components are listed.

Connecticut Hazardous Material Survey: None of the components are listed.

Florida substances: None of the components are listed.

Illinois Chemical Safety Act: None of the components are listed.

Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.

Louisiana Reporting: None of the components are listed.

Louisiana Spill: None of the components are listed.

Massachusetts Spill: None of the components are listed.

Massachusetts Substances: The following components are listed: BUTYL ACETATE; N-BUTYL ACETATE; METHYL ISOBUTYL KETONE; 4-METHYL-2-PENTANONE

Michigan Critical Material: None of the components are listed.

Minnesota Hazardous Substances: None of the components are listed.

New Jersey Hazardous Substances: The following components are listed: n-BUTYL ACETATE; ACETIC ACID, BUTYL ESTER; METHYL ISOBUTYL KETONE; 2-PENTANONE, 4-METHYL-

New Jersey Spill: None of the components are listed.

New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.

New York Acutely Hazardous Substances: The following components are listed: Butyl acetate; Methyl isobutyl ketone; Hexone

New York Toxic Chemical Release Reporting: None of the components are listed.

Pennsylvania RTK Hazardous Substances: The following components are listed: ACETIC ACID,

SECTION 15: Regulatory information

BUTYL ESTER; 2-PENTANONE, 4-METHYL-

Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65 PFF :

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

Product/ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
4-methylpentan-2-one naphthalene	Yes. Yes.	Yes. No.	No. Yes.	No. No.

SECTION 16: Other information

Remarks :

Note: In USA, consult Code of Federal Regulations, Title 29, Labor, Parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable Federal, State or local regulations that apply to safe practices in coating operations.
Warning! If you scrape, sand, or remove old paint, you may release lead dust. LEAD is TOXIC.

Validation :

Validated by US - HSE Products Coordinator on 30 November 2016

GHS Classification

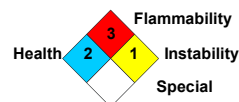
Procedure used to derive the classification.

Classification	Justification
FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

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

Health	2
Fire hazard	3
Physical hazards	0
Personal protection	X

National Fire Protection Association (U.S.A.)



Personal Protective Equipment (PPE) shown in this section is a suggestion. Since conditions vary from one work location to another consult the facility safety & health program. Customer or end user is responsible to evaluate worker exposure conditions at the site of application and determine the appropriate PPE suitable for workers at that particular facility or location.

Abbreviations and acronyms :

ANSI = American National Standards Institute
HCS = Hazardous Communication System
TSCA = Toxic Substances Control Act
CFR = Code of federal Regulations
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
OSHA = United States Occupational Health and Safety Administration
NIOSH = National Institute for Occupational Safety and Health
ACGIH = American Conference of Industrial Hygienists
IARC = International Agency for Research on Cancer.
NTP = National Toxicology Program
ATE = Acute Toxicity Estimate

OECD = Organisation for Economic Co-operation and Development
BCF = Bioconcentration Factor
DOT = United States Department of Transportation
ERG = Emergency Response Guide
TDG = Transport of Dangerous Goods, Canada
SCT = Transportation & Communications Ministry, Mexico
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association
SARA = Superfund Amendments Reauthorization Act
EPCRA = Emergency Planning and Community Right to Know Act

Notice to reader

Indicates information that has changed from previously issued version.

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.