



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 : NEOGARD
URETHANE ROOFING TOPCOAT WHITE

Product identity : 473JB16640, 70630

Product type : polyurethane paint

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

Field of application : buildings and metal industry.

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 : NEOGARD, a Division of Hempel (USA), Inc.
2728 Empire Central
Dallas, TX 75235
Phone number: 1-214-353-1600
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 (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) - Category 1

2.2 Label elements



SECTION 2: Hazards identification

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H226 - Flammable liquid and vapor.
 H302 + H332 - Harmful if swallowed or if inhaled.
 H318 - Causes serious eye damage.
 H315 - Causes skin irritation.
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 - May cause an allergic skin reaction.
 H350 - May cause cancer.
 H335 - May cause respiratory irritation.
 H372 - Causes damage to organs through prolonged or repeated exposure. (lungs)

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. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response :

Get medical attention if you feel unwell. 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 SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. 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. Immediately call a POISON CENTER or physician.

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 :

None known.

2.3 Other hazards

Hazards not otherwise classified : None known.

SECTION 3: Composition/information on ingredients

Product definition :

Mixture

Physical state :

Liquid.

Product/ingredient name	Identifiers	%	GHS Classification
Poly[oxy(methyl-1,2-ethanediyl)], α-hydro-ω-hydroxy-, polymer with 1,3-diisocyanatomethylbenzene	9057-91-4	≥25 - ≤50	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
aluminium hydroxide	21645-51-2	≥10 - ≤25	Not classified.
titanium dioxide	13463-67-7	≥5 - ≤10	Not classified.
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	64742-48-9	≥5 - ≤10	ASPIRATION HAZARD - Category 1
1,6-hexanediy-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl)carbamate	140921-24-0	≥5 - ≤10	SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1
2-ethylhexyl diphenyl phosphate	1241-94-7	≥5 - ≤10	Not classified.



SECTION 3: Composition/information on ingredients

quartz (chrySTALLINE, non respirable)	14808-60-7	≥1 - ≤3	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) (inhalation) - Category 1 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) (inhalation) - Category 1 FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1 ACUTE TOXICITY (inhalation) - Category 1 SKIN IRRITATION - Category 2 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 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
respirable quartz	14808-60-7	≥1 - ≤3	
(R)-p-mentha-1,8-diene	5989-27-5	≥1 - ≤3	
m-tolylidene diisocyanate	26471-62-5	<1	
diuron	330-54-1	≤0.3	

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

There are no 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 damage.
Inhalation :	Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact :	Causes skin irritation. May cause an allergic skin reaction.
Ingestion :	Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact :	Adverse symptoms may include the following: pain watering redness
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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: pain or irritation redness blistering may occur
Ingestion :	Adverse symptoms may include the following: stomach pains

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. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic 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 phosphorus oxides metal oxide/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. 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. May be harmful to the environment if released in large quantities.

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

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
aluminium hydroxide	ACGIH TLV (United States, 3/2017). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction
titanium dioxide	OSHA PEL (United States, 6/2016). TWA: 15 mg/m ³ 8 hours. Form: Total dust
quartz (chrySTALLINE, non respirable)	ACGIH TLV (United States, 3/2017). TWA: 10 mg/m ³ 8 hours. OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable
respirable quartz	OSHA PEL (United States, 6/2016). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2017). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust
diuron	OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable OSHA PEL (United States, 6/2016). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2017). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust ACGIH TLV (United States, 3/2017). TWA: 10 mg/m ³ 8 hours. NIOSH REL (United States, 10/2016). TWA: 10 mg/m ³ 10 hours.

Recommended monitoring procedures



SECTION 8: Exposure controls/personal protection

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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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:

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

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.
Color :	White.
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: 60°C (140°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 shocks and mechanical impacts.
Upper/lower flammability or explosive limits :	0.6 - 10.7 vol %
Vapor pressure :	0.01 kPa This is based on data for the following ingredient: Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-, polymer with 1,3-diisocyanatomethylbenzene
Vapor density :	Testing not relevant or not possible due to nature of the product.
Relative density :	1.317 g/cm ³
Solubility(ies) :	Very slightly 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 :	Not available.
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)):	16 % (w/w)
Water % by weight :	Weighted average: 0 %
VOC content (Coatings) :	1.75 lbs/gal (210.1 g/l)
VOC content (Regulatory) :	1.75 lbs/gal (210.1 g/l)
TOC Content (Volatile) :	Weighted average: 114 g/l
Solvent Gas :	Weighted average: 0.045 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.

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.



SECTION 10: Stability and reactivity

10.5 Incompatible materials

Reactive or incompatible with the following materials: oxidizing 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 phosphorus oxides metal oxide/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
aluminium hydroxide	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>6.8 mg/l	4 hours
titanium dioxide	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	LC50 Inhalation Vapor	Rat	8500 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
2-ethylhexyl diphenyl phosphate	LD50 Oral	Rat	>6000 mg/kg	-
	LD50 Dermal	Rabbit	7940 mg/kg	-
(R)-p-mentha-1,8-diene	LD50 Oral	Rat	15800 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
m-tolylidene diisocyanate	LD50 Oral	Rat	4400 mg/kg	-
	LC50 Inhalation Vapor	Rat	0.47 mg/l	1 hours
diuron	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	4130 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	4150 mg/kg	-

Acute toxicity estimates

Route	ATE value
Oral	1532.7 mg/kg
Dermal	3384.4 mg/kg
Inhalation (dusts and mists)	4.615 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent
(R)-p-mentha-1,8-diene	Skin - Mild irritant	Rabbit	-	24 hours 10 Percent
m-tolylidene diisocyanate	Skin - Severe irritant	Rabbit	-	500 milligrams

Carcinogen Classification



SECTION 11: Toxicological information

Product/ingredient name	IARC	NTP	OSHA
titanium dioxide	2B	-	-
quartz (chrySTALLINE, non respirable)	1	Known to be a human carcinogen.	-
respirable quartz	1	Known to be a human carcinogen.	-
(R)-p-mentha-1,8-diene	3	-	-
m-tolylidene diisocyanate	2B	Reasonably anticipated to be a human carcinogen.	-

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Poly[oxy(methyl-1,2-ethanediyl)], α-hydro-ω-hydroxy-, polymer with 1,3-diisocyanatomethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
m-tolylidene diisocyanate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
quartz (chrySTALLINE, non respirable)	Category 1	Inhalation	lungs
respirable quartz	Category 1	Inhalation	lungs
diuron	Category 2	Not determined	Not determined

Aspiration hazard

Product/ingredient name	Result
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains (R)-p-mentha-1,8-diene, m-tolylidene diisocyanate. 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. Toxic 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
titanium dioxide	Acute LC50 >100 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
2-ethylhexyl diphenyl phosphate	Acute LC50 0.12 mg/l	Algae	72 hours
	Acute LC50 150 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 15 mg/l	Fish	96 hours
(R)-p-mentha-1,8-diene	Chronic NOEC 0.018 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute EC50 421 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 688 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
m-tolylidene diisocyanate	Acute EC50 4300 mg/l	Algae	96 hours
	Acute EC50 12.5 mg/l	Daphnia	48 hours
	Acute LC50 133 mg/l	Fish	96 hours
diuron	Acute EC50 0.022 mg/l	Algae	96 hours
	Acute EC50 1.4 mg/l	Daphnia	48 hours
	Acute LC50 380 µg/l Fresh water	Crustaceans - Gammarus lacustris	48 hours
	Acute LC50 3.2 mg/l	Fish	48 hours



SECTION 12: Ecological information

Chronic NOEC 1.3 µg/l Marine water Chronic NOEC 33.4 µg/l Fresh water	Algae - Gracilaria tenuistipitata Fish - Pimephales promelas - Embryo	4 days 63 days
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12.2 Persistence and degradability

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	-	10 - 2500	high
2-ethylhexyl diphenyl phosphate	5.61	934	high
(R)-p-mentha-1,8-diene	4.38	-	high
m-tolyldiene diisocyanate	3.43	-	low
diuron	2.84	5.2	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.









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
<p>This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by vessel. Domestic ground shipments 49 CFR 173.120(b) and 173.150(f)(1)</p>				



SECTION 14: Transport information

DOT Code	UN1263	PAINT. (1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl) carbamate)	3 -	 	III Yes.	The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes. Reportable quantity (carbendazim, m-tolylidene diisocyanate) 13976.1 lbs / 6345.1 kg [1272.7 gal / 4817.9 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
TDG Code	UN1263	PAINT. (1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl) carbamate)	3 -	 	III Yes.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.
SCT Code	UN1263	PAINT	3 -		III Yes.	-
IMDG Code	UN1263	PAINT. (1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl) carbamate)	3 -	 	III Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E
IATA Code	UN1263	PAINT	3 -		III Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

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 : Not determined.

TSCA 4(a) final test rules: nonane

TSCA 8(a) PAIR: dipropylene glycol methyl ether; diuron; silica/polydimethylsiloxane reactionproduct; methyl formate; nonane; pigment violet 19, 73900 (quinacridone pigment); naphthalene

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

United States inventory (TSCA 8b): Not determined.

TSCA 8(c) calls for record of SAR: m-tolylidene diisocyanate

Clean Water Act (CWA) 307: benzene; toluene; ethylbenzene; pigment blue 15, 74160 (copper phthalocyanine blue, unstable pigment); naphthalene

Clean Water Act (CWA) 311: benzene; toluene; diuron; epichlorohydrin; xylene; ethylbenzene; phosphoric acid; naphthalene

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



SECTION 15: Regulatory information

Product/ingredient name	CAS number	Concentration
benzene	71-43-2	0.0034393
2-(2-butoxyethoxy)ethyl acetate	124-17-4	5.7286
toluene	108-88-3	0.057718
2-(2-butoxyethoxy)ethanol	112-34-5	0.043725
methanol	67-56-1	0.001287
xylene	1330-20-7	0.0042804

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304 - SARA 311/312:

SARA 302/304: epichlorohydrin

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
Poly[oxy(methyl-1,2-ethanediyl)], α-hydroxy-ω-hydroxy-, polymer with 1,3-diisocyanatomethylbenzene	25 - 50	No.	No.	No.	Yes.	No.
1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl)carbamate	5 - 10	No.	No.	No.	Yes.	No.
quartz (chrySTALLINE, non respirable)	1 - 3	No.	No.	No.	No.	Yes.
respirable quartz	1 - 3	No.	No.	No.	No.	Yes.
(R)-p-mentha-1,8-diene	1 - 3	Yes.	No.	No.	Yes.	No.
m-tolylidene diisocyanate	0.1 - 0.5	No.	No.	No.	Yes.	Yes.
diuron	0.1 - 0.5	No.	No.	No.	Yes.	Yes.

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
2-(2-butoxyethoxy)ethyl acetate	124-17-4	5 - 10
m-tolylidene diisocyanate	26471-62-5	0 - 1

Supplier notification :

Product/ingredient name	CAS number	Concentration
2-(2-butoxyethoxy)ethyl acetate	124-17-4	5 - 10
m-tolylidene diisocyanate	26471-62-5	0 - 1

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: TITANIUM DIOXIDE; TIN DIOXIDE DUST; SILICA, CRYSTALLINE, QUARTZ; SILICA, CRYSTALLINE, QUARTZ

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: TOLUENE DIISOCYANATE (mixed isomers); BENZENE, 1,3-DIISOCYANATOMETHYL-; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO₂); GLYCOL ETHERS; SILICA, QUARTZ; QUARTZ (SiO₂); SILICA, QUARTZ; QUARTZ (SiO₂)

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: Toluene diisocyanite

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

Pennsylvania RTK Hazardous Substances: The following components are listed: BENZENE, 2, 4-DIISOCYANATOMETHYL-; TITANIUM OXIDE; QUARTZ DUST; QUARTZ; QUARTZ DUST; QUARTZ

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.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.



SECTION 15: Regulatory information

Product/ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
toluene	No.	Yes.		Yes.
ethylbenzene	Yes.	No.	Yes.	
methanol	No.	Yes.		Yes.
naphthalene	Yes.	No.	Yes.	
respirable quartz	Yes.	No.		
quartz (chrySTALLINE, non respirable)	Yes.	No.		
titanium dioxide	Yes.	No.		
m-tolylidene diisocyanate	Yes.	No.	Yes.	
benzene	Yes.	Yes.	Yes.	Yes.
diuron	Yes.	No.		
epichlorohydrin	Yes.	Yes.	Yes.	
Cumen	Yes.	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 27 July 2018

GHS Classification

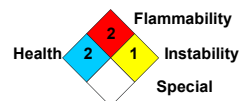
Procedure used to derive the classification.

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

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

Health	* 3
Fire hazard	2
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.