

Section 1. Identification

GHS product identifier : Grēngloo™ Adhesive

Other means of identification : Not available.

Product type : Paste.

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

Product use : Dental product: Adhesive./Curing

Area of application : Professional applications.

Manufacturer : **Ormco Corporation**
1717 West Collins Avenue
Orange, CA 92867
Telephone no.: 1-800-854-1741

e-mail address of person responsible for this SDS : Contact customer service at 1-800-KERR-123 for any questions

Emergency telephone number (with hours of operation) : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Health effects are based on the uncured material.

Classification of the substance or mixture : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 6.1%

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Causes serious eye irritation.
Causes skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Section 2. Hazards identification

Precautionary statements

- Prevention** : Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
- Response** : IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. 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** : Not applicable.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

- CAS number** : Not applicable.
- Product code** : Not available.

| Ingredient name | Other names | % | CAS number |
|---|--|-------|-------------|
| 2,2'-ethylenedioxydiethyl dimethacrylate | 2,2'-ethylenedioxydiethyl dimethacrylate | 5-10 | 109-16-0 |
| 4,4'-methylenedi(cyclohexyl isocyanate) | 4,4'-methylenedicyclohexyl diisocyanate | 1-5 | 5124-30-1 |
| 2-hydroxyethyl methacrylate | 2-hydroxyethyl methacrylate | 1-5 | 868-77-9 |
| Polyol | Not available. | 1-5 | - |
| Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-3-trimethoxysilylpropyl methacrylate | Not available. | 1-5 | 41637-38-1 |
| 3-trimethoxysilylpropyl methacrylate | 3-trimethoxysilylpropyl methacrylate | 1-5 | 2530-85-0 |
| 2,3-epoxypropyl methacrylate | 2,3-epoxypropyl methacrylate | 0.1-1 | 106-91-2 |
| Propylidynetrimethanol, ethoxylated, esters with acrylic acid | Propylidynetrimethanol, ethoxylated, esters with acrylic acid | 0.1-1 | 28961-43-5 |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate | 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate | 0.1-1 | 72869-86-4 |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | 0.1-1 | 162881-26-7 |

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

Section 3. Composition/information on ingredients

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 and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
- Inhalation** : No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
- Skin contact** : No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : Causes skin 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
- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : In case of major fire and large quantities: 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides
Formaldehyde.

Special protective actions for fire-fighters : In case of major fire and large quantities: 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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely
- For emergency responders** : Low release. See also the information in "For non-emergency personnel".

Environmental precautions : Low release. 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 and materials for containment and cleaning up

- Small spill** : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.
- Large spill** : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.
- Advice on general occupational hygiene** : 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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. 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. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|---|--|
| 4,4'-methylenedi(cyclohexyl isocyanate) | <p>ACGIH TLV (United States, 4/2014). TWA: 0.005 ppm 8 hours. TWA: 0.054 mg/m³ 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. CEIL: 0.01 ppm CEIL: 0.11 mg/m³</p> <p>NIOSH REL (United States, 10/2013). CEIL: 0.01 ppm CEIL: 0.11 mg/m³</p> <p>OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 5 mg/m³, (as CN) 8 hours.</p> |
| 2,3-epoxypropyl methacrylate | <p>AIHA WEEL (United States, 10/2011). Absorbed through skin. Skin sensitizer. TWA: 0.5 ppm 8 hours.</p> |

Appropriate engineering controls : No special measures are required for small quantities under normal and intended conditions of product use.

Environmental exposure controls : No special measures are required for small quantities under normal and intended conditions of product use.

Individual protection measures

Hygiene measures : No special measures are required for small quantities under normal and intended conditions of product use.

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.

Skin protection

Hand protection : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : No special measures are required for small quantities under normal and intended conditions of product use.

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : No special measures are required for small quantities under normal and intended conditions of product use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Paste.]
- Color** : Various
- Odor** : Fruity ester-like
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.16
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use.
Hazardous polymerization may occur under certain conditions of storage or use.
- Conditions to avoid** : Keep away from heat and direct sunlight. Heat can cause polymerization with rapid release of energy.

Section 10. Stability and reactivity

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and reducing materials.
Peroxide.
Amine.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---------------------------------|---------|--------------|----------|
| 2,2'-ethylenedioxydiethyl dimethacrylate | LD50 Oral | Rat | 10837 mg/kg | - |
| 4,4'-methylenedi(cyclohexyl isocyanate) | LC50 Inhalation Dusts and mists | Rat | 0.295 mg/l | 4 hours |
| 2-hydroxyethyl methacrylate | LD50 Dermal | Rabbit | >10000 mg/kg | - |
| | LD50 Oral | Rat | 9900 mg/kg | - |
| | LD50 Oral | Rat | 4230 mg/kg | - |
| 3-trimethoxysilylpropyl methacrylate | LD50 Oral | Rat | 23504 mg/kg | - |
| 2,3-epoxypropyl methacrylate | LC50 Inhalation Vapor | Rat | 45 ppm | 4 hours |
| | LD50 Dermal | Rabbit | 450 mg/kg | - |
| | LD50 Dermal | Rat | 483 mg/kg | - |
| | LD50 Oral | Rat | 500 mg/kg | - |
| Propylidynetrimethanol, ethoxylated, esters with acrylic acid | LD50 Oral | Rabbit | >13 g/kg | - |
| | LD50 Dermal | Rabbit | >13 g/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|--------------------------|---------|-------|--------------------------|-------------|
| 4,4'-methylenedi(cyclohexyl isocyanate) | Eyes - Mild irritant | Rabbit | - | 100 microliters | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 100 microliters | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 microliters | - |
| 3-trimethoxysilylpropyl methacrylate | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| 2,3-epoxypropyl methacrylate | Eyes - Moderate irritant | Rabbit | - | 100 microliters | - |
| | Skin - Severe irritant | Rabbit | - | 24 hours 500 microliters | - |
| Propylidynetrimethanol, ethoxylated, esters with acrylic acid | Eyes - Moderate irritant | Rabbit | - | 100 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 500 milligrams | - |

Sensitization

Section 11. Toxicological information

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---|------------|-------------------|------------------------------|
| 2,2'-ethylenedioxydiethyl dimethacrylate | Category 3 | Not applicable. | Respiratory tract irritation |
| 4,4'-methylenedi(cyclohexyl isocyanate) | Category 3 | Not applicable. | Respiratory tract irritation |
| 2-hydroxyethyl methacrylate | Category 3 | Not applicable. | Respiratory tract irritation |
| Polyol | Category 3 | Not applicable. | Respiratory tract irritation |
| Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-2,3-epoxypropyl methacrylate | Category 3 | Not applicable. | Respiratory tract irritation |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

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

Symptoms related to the physical, chemical and toxicological characteristics

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

Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- 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** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|------------------------------|---------------|
| Oral | 96863.9 mg/kg |
| Inhalation (dusts and mists) | 6.329 mg/l |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|---|------------------------------------|--|----------|
| 4,4'-methylenedi(cyclohexyl isocyanate) | Acute LC50 1.2 mg/l Fresh water | Fish - Brachydanio rerio | 96 hours |
| 2-hydroxyethyl methacrylate | Acute LC50 227000 µg/l Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |

Persistence and degradability

Date of issue/Date of revision : 07/09/2015 **Date of previous issue** : No previous validation **Version** : 1 9/14

Section 12. Ecological information

| Product/ingredient name | Test | Result | Dose | Inoculum |
|---|--|-----------------------|------|----------|
| 4,4'-methylenedi(cyclohexyl isocyanate) | 301F Ready Biodegradability - Manometric Respirometry Test | 0 % - 28 days | - | - |
| 2-hydroxyethyl methacrylate | 301C Ready Biodegradability - Modified MITI Test (I) | 92 to 100 % - 14 days | - | - |

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| 4,4'-methylenedi(cyclohexyl isocyanate) | - | - | Not readily |
| 2-hydroxyethyl methacrylate | - | - | Readily |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | - | - | Readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---|--------------------|-------|-----------|
| 2,2'-ethylenedioxydiethyl dimethacrylate | 1.88 | - | low |
| 4,4'-methylenedi(cyclohexyl isocyanate) | 6.11 | 10186 | high |
| 2-hydroxyethyl methacrylate | 0.42 | - | low |
| Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-3-trimethoxysilylpropyl methacrylate | 3.43 to 5.62 | 2372 | high |
| 2,3-epoxypropyl methacrylate | 0.96 | - | low |
| Propylidynetrimethanol, ethoxylated, esters with acrylic acid | 2.89 | - | low |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diyl bismethacrylate | 3 | - | low |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | 5.77 | <5 | low |

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

Disposal methods : 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.

Section 14. Transport information

| | DOT Classification | IMDG | IATA |
|----------------------------|--------------------|----------------|----------------|
| UN number | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name | - | - | - |
| Transport hazard class(es) | - | - | - |
| Packing group | - | - | - |
| Environmental hazards | No. | No. | No. |
| Additional information | - | - | - |

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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR:** 4,4'-methylenedi(cyclohexyl isocyanate); mequinol
TSCA 8(c) calls for record of SAR: 4,4'-methylenedi(cyclohexyl isocyanate)
United States inventory (TSCA 8b): Not determined.
Clean Water Act (CWA) 307: 4,4'-methylenedi(cyclohexyl isocyanate); toluene
Clean Water Act (CWA) 311: Formaldehyde; toluene

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

Section 15. Regulatory information

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

| Name | % | EHS | SARA 302 TPQ | | SARA 304 RQ | |
|----------------|---------|------|--------------|-----------|-------------|-----------|
| | | | (lbs) | (gallons) | (lbs) | (gallons) |
| Formaldehyde | 0.00325 | Yes. | 500 | 73.9 | 100 | 14.8 |
| ethylene oxide | <0.0023 | Yes. | 1000 | - | 10 | - |

SARA 304 RQ : 483091.8 lbs / 219323.7 kg [49947.6 gal / 189072.1 L]

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

| Name | % | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|---|-------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| 2,2'-ethylenedioxydiethyl dimethacrylate | 5-10 | Yes. | No. | No. | Yes. | No. |
| 4,4'-methylenedi(cyclohexyl isocyanate) | 1-5 | No. | No. | No. | Yes. | No. |
| 2-hydroxyethyl methacrylate | 1-5 | No. | No. | No. | Yes. | No. |
| Polyol | 1-5 | No. | No. | No. | Yes. | No. |
| Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-3-trimethoxysilylpropyl methacrylate | 1-5 | No. | No. | No. | Yes. | No. |
| 2,3-epoxypropyl methacrylate | 0.1-1 | Yes. | No. | No. | Yes. | No. |
| Propylidynetrimethanol, ethoxylated, esters with acrylic acid | 0.1-1 | No. | No. | No. | Yes. | No. |
| 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate | 0.1-1 | No. | No. | Yes. | Yes. | No. |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | 0.1-1 | No. | No. | No. | Yes. | No. |

SARA 313

| | Product name | CAS number | % |
|--|---|------------|-----|
| Form R - Reporting requirements | 4,4'-methylenedi(cyclohexyl isocyanate) | 5124-30-1 | 1-5 |
| Supplier notification | 4,4'-methylenedi(cyclohexyl isocyanate) | 5124-30-1 | 1-5 |

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

State regulations

Massachusetts : The following components are listed: MINERAL WOOL FIBER; METHYLENE BIS (4-CYCLOHEXYLISOCYANATE)

New York : The following components are listed: Cyanides (soluble cyanide salts), not elsewhere specified

Section 15. Regulatory information

New Jersey : The following components are listed: METHYLENE BIS(4-CYCLOHEXYLISOCYANATE); 1,1-METHYLENE BIS(4-ISOCYANATOCYCLOHEXANE)

Pennsylvania : The following components are listed: CYCLOHEXANE, 1,1'-METHYLENEBIS [4-ISOCYANATO-

California Prop. 65

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

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

Section 16. Other information

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

| | | |
|------------------|---|---|
| Health | * | 3 |
| Flammability | | 0 |
| Physical hazards | | 1 |
| | | |

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 SDSs 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.

History

Date of issue/Date of revision : 07/09/2015

Date of issue/Date of revision : 07/09/2015 **Date of previous issue** : No previous validation **Version** : 1 13/14

Section 16. Other information

| | |
|-------------------------------|--|
| Date of previous issue | : No previous validation |
| Version | : 1 |
| Key to abbreviations | : ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations |
| References | : HCS (U.S.A.)- Hazard Communication Standard International transport regulations |

✔ 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.