

Safety Data Sheet



ONYX Crete SL – PART A

1. IDENTIFICATION

| 24 HOUR EMERGENCY ASSISTANCE | MANUFACTURER/GENERAL MSDS ASSISTANCE |
|------------------------------|---|
| CHEM-TEL 1-800-255-3924 | ONYX CONCRETE COATINGS Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870 |

PRODUCT IDENTIFIER/NAME: ONYX Crete SL – PART A
RECOMMENDED USE: Chemical intermediate for polyurethane

2. HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Skin Sens. 1 H317 May cause an allergic skin reaction.

NFPA ratings (scale 0 – 4):

| | |
|------------|---|
| HEALTH | 1 |
| FIRE | 1 |
| REACTIVITY | 0 |
| SPECIAL | - |

NFPA HAZARD RATING:

4= EXTREME 2= MODERATE 0= INSIGNIFICANT
3= HIGH 1= SLIGHT



HAZARD PICTOGRAMS:

SIGNAL WORD: Warning

PHYSICAL APPEARANCE: Milky white or colored liquid with faint castor oil odor.

· **Hazard-determining components of labeling:**

2-n-butyl-benzo[d]isothiazol-3-one

· **Hazard statements**

H317 May cause an allergic skin reaction.

· **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves.

P272 Contaminated work clothing must not be allowed out of the workplace.

P321 Specific treatment (see on this label).
P363 Wash contaminated clothing before reuse.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

· **Description:** POLYALCOHOL EMULSION

Dangerous components:

| | | |
|------------|--|------------|
| 64742-95-6 | Solvent naphtha (petroleum), light arom. | 0.3-<1% |
| 4299-07-4 | 2-n-butyl-benzo[d]isothiazol-3-one | 0.1-<0.25% |

Additional information:

Indicated concentrations are average values.
For the wording of the listed risk phrases refer to section 16.

4. FIRST AID MEASURES

· **Description of first aid measures**

· **General information:**

In all cases of doubt, or when symptoms persist, seek medical advice immediately.

For symptoms, see Section 11.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. FIRE-FIGHTING MEASURES

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fire with alcohol resistant foam.

Use firefighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

· **Advice for firefighters**

· **Protective equipment:** Wear self-contained respiratory protective device.

· **Additional information**

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated firefighting water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

· **Personal precautions, protective equipment and emergency procedures**

Keep away from ignition sources

Wear protective clothing.

· **Environmental precautions:**

Do not allow product to reach sewage system or any water course.

In case of seepage into the ground inform responsible authorities.

Prevent from spreading (e.g., by damming-in or oil barriers).

Keep contaminated washing water and dispose of appropriately.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.

· **Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. HANDLING AND STORAGE

Handling:

Apply proper ventilation, possibly combined with local exhaust. Do not eat, smoke or drink during use.

For personal protection see Section 8.

Use only explosion proof equipment.

Avoid contact with strong oxidizers.

· **Precautions for safe handling**

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

Keep away from sources of ignition - no smoking. Store in a cool, well-ventilated place. Keep in original, closed packaging. Comply with governmental regulations. Keep from freezing.

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** None.

· **Specific end use(s)** No further relevant information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

· **Respiratory protection:** Not required.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.

· **Body protection:**

· **Light weight protective clothing** made from strong material.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Milky emulsion
COLOR: Milky emulsion
BOILING POINT: Not Available
SOL. IN WATER: Insoluble.
SP. GRAVITY: .99 ± 0.1
FLASH POINT: 450°C (255°F)
APPEARANCE/DESCRIPTION: milky liquid
ODOR: Mild
BULK DENSITY: No data available
UEL: No data available
LEL: No data available
NVW: 100% ca

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: The material is stable.
POSSIBILITY OF HAZARDOUS REACTIONS: None expected to occur.
CONDITIONS TO AVOID: Keep from contact with oxidizing materials, acids, sparks, and open flame.
INCOMPATIBLE MATERIALS: Acids, alkalies, oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Products of incomplete combustion may include CO, CO₂ and dense smoke

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Available data:

No experimental data available.

The health hazard is mainly caused by the solvent(s).

Primary irritant effect:

on the skin: No irritant effect.

on the eye: No irritating effect.

Sensitization: No sensitizing effects known.

Carcinogenic categories

| |
|--|
| · IARC (International Agency for Research on Cancer) |
| <i>None of the ingredients is listed.</i> |
| · NTP (National Toxicology Program) |
| <i>None of the ingredients is listed.</i> |
| · OSHA-Ca (Occupational Safety & Health Administration) |
| <i>None of the ingredients is listed.</i> |

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12. ECOLOGICAL INFORMATION

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS: Do NOT dump into any sewers, on the ground or into any body of water. Waste disposal of this material should be dealt with in accordance with standard practice for disposal of potentially hazardous materials as required by federal, state and local regulations. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

NOTE: Generator is responsible for proper waste characterization. State (USA) hazardous materials as required by applicable international, national, regional, state or local laws.

Empty Container Precautions: Disposal regulations may also apply to empty containers and equipment rinsates.

14. TRANSPORT INFORMATION

| | |
|--|---|
| UN proper shipping name DOT TDG, ADN, IMDG, IATA | <i>RESIN SOLUTION, NOT REGULATED</i> <i>Void</i> |
| Transport hazard class(es) DOT Class Label TDG, ADN, IMDG, IATA Class | <i>Void</i> <i>-</i> <i>Void</i> |
| Packing group DOT, TDG, IMDG, IATA | <i>Void</i> |
| Environmental hazards: Marine pollutant: | <i>No</i> |
| Special precautions for user | <i>Keep from freezing.</i> |
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | <i>Not</i> |
| Transport/Additional information: DOT Remarks: | <i>RESIN SOLUTION, NOT REGULATED</i> |
| UN "Model Regulation": | <i>-</i> |

15. REGULATORY INFORMATION

Safety and Environmental Regulations/ Legislation Specific for the Substance or Mixture Sara

| |
|--|
| · Section 355 (extremely hazardous substances): |
| <i>None of the ingredient is listed.</i> |
| · Section 313 (Specific toxic chemical listings): |
| <i>None of the ingredients is listed.</i> |
| · TSCA (Toxic Substances Control Act): |
| <i>All ingredients are listed.</i> |
| Proposition 65 |
| · Chemicals known to cause cancer: |
| <i>None of the ingredients is listed.</i> |
| · Chemicals known to cause reproductive toxicity for females: |
| <i>None of the ingredients is listed.</i> |

| |
|--|
| · Chemicals known to cause reproductive toxicity females: |
| None of the ingredients is listed. |
| · Chemicals known to cause developmental toxicity: |
| None of the ingredients is listed. |

Carcinogenity categories

| |
|---|
| · EPA (Environmental Protection Agency) |
| None of the ingredients is listed. |
| · TLV (Threshold Limit Value established by ACGIH) |
| None of the ingredients is listed. |
| · NIOSH-Ca (National Institute for Occupational Safety and Health) |
| None of the ingredients is listed. |

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

All components in this product have been verified as being on the CEPA DSL Inventory.

| | |
|---|---|
| 8001-79-4 | Castor oil |
| 7732-18-5 | water, distilled, conductivity or of similar purity |
| · Canadian Ingredient Disclosure list (limit 0.1%) | |
| None of the ingredients is listed. | |
| · Canadian Ingredient Disclosure list (limit 1%) | |
| 8001-79-4 | Castor oil |

GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms GHS07

Signal word Warning

Hazard-determining components of labeling:

2-n-butyl-benzo[d]isothiazol-3-one

Hazard statements

H317 May cause an allergic skin reaction.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves.

P272 Contaminated work clothing must not be allowed out of the workplace.

P321 Specific treatment (see on this label).

P363 Wash contaminated clothing before reuse.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P302+P352 If on skin: Wash with plenty of water.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Date Revised: 10/27/2017

MANUFACTURER'S NAME AND ADDRESS:

ONYX CONCRETE COATINGS

1610 E. Miraloma Ave.

Placentia, CA 92870

Telephone: 714-572-6723

The information herein is given in good faith, but no warranty expressed or implied is made. Onyx Concrete Coatings urges users of this product to evaluate its suitability and compliance with local regulations as Onyx cannot foresee the nature of the final application or final location of usage.

Safety Data Sheet



ONYX Crete SL – PART B

1. IDENTIFICATION

| 24 HOUR EMERGENCY ASSISTANCE | MANUFACTURER/GENERAL MSDS ASSISTANCE |
|------------------------------|---|
| CHEM-TEL 1-800-255-3924 | ONYX CONCRETE COATINGS Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870 |

PRODUCT IDENTIFIER/NAME: ONYX Crete SL – PART B

RECOMMENDED USE: Chemical intermediate for polyurethane

2. HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Acute Oral Toxicity Category 4
Acute Dermal Toxicity Category 4
Acute Vapors Toxicity Category 5
Skin Corrosion Category 1C
Eye Irritation Category 2
Skin Sensitizer Category 1
Respiratory Sensitizer Category 1
Germ Cell Mutagenicity Category 2
Carcinogenicity Category 2
TOST: Single Exposure Category 3
TOST: Repeated Exposure Category 2

NFPA ratings (scale 0 – 4):

| | |
|------------|---|
| HEALTH | 2 |
| FIRE | 1 |
| REACTIVITY | 1 |
| SPECIAL | - |

NFPA HAZARD RATING:

4= EXTREME 2= MODERATE 0= INSIGNIFICANT
3= HIGH 1= SLIGHT



HAZARD PICTOGRAMS:

SIGNAL WORD: Danger!

PHYSICAL APPEARANCE: Dark brown liquid with faint musky odor.

HAZARD STATEMENTS:

Hazard(s) not otherwise classified (HNOC): No specific dangers known, if the regulations/notes for storage and handling are considered.

Inhalation: Inhalation of isocyanate mists or vapors may cause respiratory irritation, breathlessness, chest discomfort and reduced pulmonary function. Overexposure well above the PEL may result in bronchitis, bronchial spasms and pulmonary edema. Long-term exposure to isocyanates has been reported to cause lung damage, including reduced lung function which may be permanent. Acute or chronic overexposure to isocyanates may cause sensitization in some individuals, resulting in allergic respiratory reactions including wheezing, shortness of breath and difficulty breathing. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

Skin and Eyes: Avoid contact with skin and eyes. Skin or eye contact may cause irritation.

Ingestion: May cause irritation of the digestive tract with symptoms that include abdominal pain, nausea, vomiting, and diarrhea.

Carcinogenicity: No carcinogenic substances as defined by IARC, NTP and/or OSHA.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | | |
|--|-----------------|-------|
| <i>Polymeric diphenylmethane diisocyanate</i> | (CAS 9016-87-9) | < 50% |
| <i>4,4' - Diphenylmethane diisocyanate (MDI)</i> | (CAS101-68-8) | <45% |

4. FIRST AID MEASURES

INHALTION: Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention is required.

SKIN: Remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

EYE: In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

INGESTION: Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

ADDITIONAL INFORMATION:

SYMPTOMS: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11: Eye irritation, skin irritation, allergic symptoms

Hazards: Symptoms can appear later.

Hazard Information on Diphenylmethane-4,4'-diisocyanate (MDI): Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Substances eliciting lower respiratory tract irritation may worsen the asthma-like reactions that may be produced by product exposures.

Indication of any immediate medical attention and special treatment needed

Note to physician

ANTIDOTE: Specific antidotes or neutralizers to isocyanates do not exist.

TREATMENT: Treatment should be supportive and based on the judgement of the Physician in response to the reaction of the patient.

5. FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Use water spray, dry powder, carbon dioxide, foam.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

HAZARDS DURING FIRE FIGHTING: nitrous gases, fumes/smoke, isocyanate, vapor.

ADVICE FOR FIRE FIGHTERS: Firefighters should be equipped with self-contained breathing apparatus and turn-out gear. Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

Clear area. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

ENVIRONMENTAL PRECAUTIONS: Do not discharge into drains/surface waters/groundwater.

CONTAINMENT/CLEAN-UP MEASURES:

For small amounts: Absorb isocyanate with suitable absorbent material (see § 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Do not make container pressure tight. Move container to a well-ventilated area (outside). Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 8 % concentrated ammonia, 2 % detergent. Treat spill at a 10 to 1 ratio. Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide.

FOR LARGE AMOUNTS: If temporary control of isocyanate vapor is required, a blanket of protein foam or other suitable foam (available from most fire departments) may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal.

FOR RESIDUES: The following measures should be taken for final cleanup: Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes. Dike spillage.

7. HANDLING AND STORAGE

HANDLING: Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapors of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gastight. Protect against moisture. If bulging of drum occurs, transfer to well-ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

STORAGE: Keep away from water. Segregate from foods and animal feeds. Segregate from acids and bases. Segregate from bases.

SUITABLE MATERIALS FOR CONTAINERS: Carbon steel (Iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2)

FURTHER INFORMATION ON STORAGE CONDITIONS Formation of CO₂ and buildup of pressure possible. Keep container tightly closed and in a well-ventilated place. Empty spaces of containers should be filled with dry inert gas at atmospheric pressure to avoid reaction with moisture.

STORAGE STABILITY:

Storage temperature: 60 - 80 °F

Protect against moisture and moisture contamination.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| Exposure Limits/ Guidelines | | |
|--|--------|------------------------------------|
| Chemical Name | Result | ACGIH/OSHA |
| Diphenylmethane-4,4'-diisocyanate (MDI) CAS 101-68-8 | STEL | |
| | TWA | 0.005 ppm |
| | PEL | CLV 0.02 ppm/0.2 mg/m ³ |
| P-MDI CAS 9016-87-9 | STEL | |
| | TWA | 0.005 ppm |
| | PEL | CLV 0.02 ppm/0.2 mg/m ³ |

ENGINEERING MEASURES/CONTROLS: Provide local exhaust ventilation to maintain recommended P.E.L..

ENVIRONMENTAL EXPOSURE CONTROLS: Avoid release to the environment. Construct a dike to prevent spreading of spills. 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.

HYGIENE MEASURES: Wear protective clothing as necessary to prevent contact. Eye wash fountains and safety showers must be easily accessible. Observe the appropriate PEL or TLV value. Wash soiled clothing immediately. Contaminated equipment or clothing should be cleaned after each use or disposed of.

Personal Protective Equipment

RESPIRATORY: When workers are facing concentrations above the occupational exposure limits, they must use appropriate certified respirators. When atmospheric levels may exceed the occupational exposure limit (PEL or TLV) NIOSH-certified air-purifying respirators equipped with an organic vapor sorbent and particulate filter can be used as long as appropriate precautions and change out schedules are in place. For emergency or non-routine, high exposure situations, including confined space entry, use a NIOSH-certified full face-piece pressure demand self-contained breathing apparatus (SCBA) or a full face-piece pressure demand supplied-air respirator (SAR) with escape provisions.

EYE/FACE: Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

HANDS: Chemical resistant protective gloves should be worn to prevent all skin contact., Suitable materials may include, chloroprene rubber (Neoprene), nitrile rubber (Buna N), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, depending upon conditions of use.

SKIN/BODY: Cover as much of the exposed skin as possible to prevent all skin contact. Suitable materials may include saran-coated material, depending upon conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

| INFORMATION ON PHYSICAL AND CHEMICAL PROPERTIES | | | |
|---|-----------------------------------|------------------------|----------------------|
| PHYSICAL FORM | Liquid | APPEARANCE/DESCRIPTION | Dark Amber Liquid |
| COLOR | Dark Amber | ODOR | Faint Odor, Aromatic |
| BOILING POINT | 200°C | BULK DENSITY | No Data |
| SPECIFIC GRAVITY | Ca. 1.23 g/cm ³ @ 20°C | UEL | No Data |
| WATER SOLUBILITY | Reacts | LEL | No Data |
| FLASHPOINT | Approx. 200°C | NVW | No Data |

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions of use and storage.

POSSIBILITY OF HAZARDOUS REACTIONS: Reacts with water, with formation of carbon dioxide (risk of bursting). Reacts with alcohols. Reacts with acids. Reacts with alkalis. Reacts with amines. Risk of exothermic reaction. Risk of polymerization. Contact with certain rubbers and plastics can cause brittleness of the substance/product with subsequent loss in strength.

CONDITIONS TO AVOID: Moisture.

INCOMPATIBLE MATERIALS: Acids, amines, alcohols, water, alkaline, strong bases, substances/products that react with isocyanates.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, nitrogen oxide, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, gases/vapors.

THERMAL DECOMPOSITION: No decomposition if stored and handled as prescribed/indicated.

11. TOXICOLOGICAL INFORMATION

PRIMARY ROUTES OF EXPOSURE

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

ACUTE TOXICITY

Assessment of acute toxicity: Inhalation of vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Inhalation exposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
LD50 Oral Rat (male/female) > 2,000 mg/kg (Directive 84/449/EEC, B.1)
LC50 rat (male/female) 2.0 mg/l (OECD Guideline 403). An aerosol was tested.
LD50 rabbit (male/female) > 9,400 mg/kg

ASSESSMENT OTHER ACUTE EFFECTS

Assessment of STOT single: Causes temporary irritation of the respiratory tract.
Irritation / corrosion: Assessment of irritating effects: Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Skin Corrosion/Irritation (Rabbit, Draize Test): Irritating.
Eye Corrosion/Irritation (Rabbit, Draize Test): Irritating.

SENSITIZATION

Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapor-only exposure. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Buehler test (guinea pig): Sensitizing
Local Lymph Node Assay (Mouse, LLNA): Sensitizing. Can cause skin sensitization.
Skin Corrosion/Irritation (Guinea Pig): Sensitizing. Note: Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.

CHRONIC TOXICITY/EFFECTS

Assessment of repeated dose toxicity: The substance may cause damage to the olfactory epithelium after repeated inhalation. The substance may cause damage to the lung after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure.

Information on Diphenylmethane-4,4'-diisocyanate (MDI):
Experimental/calculated data: rat (Wistar) (male/female) Inhalation 2 years, 6 hr/day 0, 0.2, 1, 6 mg/m³, olfactory epithelium
NOAEL: 0.2 mg/m³
LOAEL: 1 mg/m³

The substance may cause damage to the olfactory epithelium after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure. Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

GENETIC TOXICITY

Assessment of mutagenicity: The substance was mutagenic in various bacterial test systems; however, these results could not be confirmed in tests with mammals.

Information on Diphenylmethane-4,4'-diisocyanate (MDI):
Genetic toxicity in vitro: OECD Guideline 471 Ames-test Salmonella typhimurium: with and without metabolic activation, ambiguous.

Information on Diphenylmethane-4,4'-diisocyanate (MDI):
Genetic toxicity in vivo: OECD Guideline 474 Micronucleus assay rat (male) Inhalation negative. No clastogenic effect reported.

CARCINOGENICTY

Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure. Experimental/calculated data: OECD Guideline 453 rat Inhalation 0, 0.2, 1, 6 mg/m³. Result: Lung tumors

REPRODUCTIVE TOXICITY

Assessment of reproduction toxicity: Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

TERATOGENICITY

Assessment of teratogenicity: The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

Development

OECD Guideline 414 rat Inhalation 0, 1, 4, 12 mg/m³

NOAEL Mat.: 4 mg/m³

NOAEL Teratog.: 4 mg/m³

The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

SYMPTOMS OF EXPOSURE

Eye irritation, skin irritation, allergic symptoms

Medical conditions aggravated by overexposure. The isocyanate component is a respiratory sensitizer. It may cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Pre-employment and periodic medical examinations with respiratory function tests (FEV₁, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

12. ECOLOGICAL INFORMATION

TOXICITY:

Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms.

The product may hydrolyze. The test result may be partially due to degradation products. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Toxicity to fish

LC₀ (96 h) > 1,000 mg/l, *Brachydanio rerio* (OECD Guideline 203, static)

Aquatic invertebrates

EC₅₀ (24 h) > 1,000 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)

Aquatic plants

EC₀ (72 h) 1,640 mg/l (growth rate), *Scenedesmus subspicatus* (OECD Guideline 201, static)

MICROORGANISMS/EFFECT ON ACTIVATED SLUDGE

TOXICITY TO MICROORGANISMS

OECD Guideline 209 aquatic aerobic bacteria from a domestic water treatment plant/EC50 (3 h): > 100 mg/l

PERSISTENCE AND DEGRADABILITY

Assessment biodegradation and elimination (H₂O): Not readily biodegradable. The product is unstable in water. The elimination data also refer to products of hydrolysis.

ELIMINATION INFORMATION

0 % BOD of the ThOD (28 d) (OECD Guideline 302 C) (aerobic, activated sludge) Poorly biodegradable.

ASSESSMENT OF STABILITY IN WATER

In contact with water the substance will hydrolyze slowly.

INFORMATION ON STABILITY IN WATER HYDROLYSIS

t_{1/2} 20 h (25 °C)

BIOACCUMULATION POTENTIAL

Assessment of bioaccumulation potential: Significant accumulation in organisms is not to be expected. Bioconcentration factor: 200 (28 d), *Cyprinus carpio* (OECD Guideline 305 E).

Mobility in soil

Assessment of transport between environmental compartments: The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS: Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system.

EMPTY CONTAINER PRECAUTIONS:

Steel drums must be emptied and can be sent to a licensed drum reconditioner for re-use, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove. Under no circumstances should empty drums be burned or cut open with gas or electric torch as toxic decomposition products may be liberated. Do not reuse empty containers.

14. TRANSPORT INFORMATION

LAND TRANSPORT

USDOT Not classified as a dangerous good under transport regulations

SEA TRANSPORT

IMDG Not classified as a dangerous good under transport regulations

AIR TRANSPORT

IATA/ICAO Not classified as a dangerous good under transport regulations

FURTHER INFORMATION

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Please refer to Section 15 of this MSDS for the RQ for this product.

15. REGULATORY INFORMATION

Federal Regulations Registration Status:

TSCA listed

EPCRA 311/312 (Hazard categories): Acute; Chronic

EPCRA 313:

CAS Number 9016-87-9

Chemical name: 101-68-8 Diphenylmethane-4,4'-diisocyanate (MDI) P-MDI CERCLA RQ 5000 LBS

CAS Number 9016-87-9; 101- 68-8

Chemical name P-MDI; Diphenylmethane-4,4'-diisocyanate (MDI)

STATE REGULATIONS

STATE RTK

MA, NJ, PA

MA, NJ, PA

NJ

CAS NUMBER

9016-87-9

101-68-8

26447-40-5

CHEMICAL NAME

P-MDI

Diphenylmethane-4,4'-diisocyanate (MDI)

Methylenediphenyl diisocyanate

16. OTHER INFORMATION

Date Revised: 12/20/2016

MANUFACTURER'S NAME AND ADDRESS:

ONYX CONCRETE COATINGS

1610 E. Miraloma Ave.

Placentia, CA 92870

Telephone: 714-572-6723

The information herein is given in good faith, but no warranty expressed or implied is made. Onyx Concrete Coatings urges users of this product to evaluate its suitability and compliance with local regulations as Onyx cannot foresee the nature of the final application or final location of usage.

Safety Data Sheet



ONYX Crete SL – PART C

1. IDENTIFICATION

| 24 HOUR EMERGENCY ASSISTANCE | MANUFACTURER/GENERAL MSDS ASSISTANCE |
|------------------------------|---|
| CHEM-TEL 1-800-255-3924 | ONYX CONCRETE COATINGS Tel.: (888)-497-3872 1610 E. Miraloma Ave. Placentia, CA 92870 |

PRODUCT IDENTIFIER/NAME: ONYX Crete SL – PART C
RECOMMENDED USE: Chemical intermediate for polyurethane Concrete

2. HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:

Acute Oral Toxicity Category 5
Acute Dust Toxicity Category 5
Skin Irritation Category 2
Eye Irritation Category 2
Skin Sensitizer Category 1
TOST: Single Exposure Category 3

NFPA ratings (scale 0 – 4):

| | |
|------------|---|
| HEALTH | 2 |
| FIRE | 0 |
| REACTIVITY | 1 |
| SPECIAL | - |

NFPA HAZARD RATING:

4= EXTREME 2= MODERATE 0= INSIGNIFICANT
3= HIGH 1= SLIGHT



HAZARD PICTOGRAMS:

SIGNAL WORD: Warning

PHYSICAL APPEARANCE: Fine white powder.

HAZARD STATEMENTS:

EYE: Minor transient irritation. Possible caustic burning can occur.

SKIN CONTACT: May cause allergic skin reaction in susceptible individuals. Prolonged exposure not

likely to cause significant skin irritation. Repeated exposure may cause skin irritation.

SKIN ABSORPTION: A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Low acute oral toxicity; LD₅₀ (rat) greater than 4000 mg/kg. No hazards anticipated from ingestion incidental to industrial exposure.

INHALATION: Vapors are unlikely due to physical properties. Over exposure may produce irritation of the mucous membranes, nose, throat, coughing and shortness of breath. Use NIOSH- approved air purifying or supplied-air respirator where airborne concentrations of crystalline silica (quartz) are expected to exceed exposure limits.

| Chemical | Percentage (by wt.) | Exposure Guidelines | | | | | | UNIT |
|-----------------------------|---------------------|-----------------------------------|------|-------------------|------|-------|------|-------------------|
| | | OSHA | | NIOSH | | ACGIH | | |
| | | TWA | STEL | TWA | STEL | TWA | STEL | |
| Crystalline Silica (Quartz) | < 85 % | 10 mg/m ³ ^a | N.E. | 0.05 ^a | N.E. | 0.025 | N.E. | Mg/m ³ |
| | | %SiO ₃ +2 | | | | | | |

**N.E. = Not Established, a = respirable dust

SYSTEMIC AND OTHER EFFECTS: Except for skin sensitization, repeated exposure to the product is not anticipated to pose an acute or significant health hazard. Calcium oxide is caustic to living tissue. Over exposure may cause irritation of the eyes, skin and upper respiratory tract.

PRECAUTIONARY STATEMENTS: Use personal protective equipment as required to minimize repeated skin exposure. Wash thoroughly after handling. If skin irritation or rash occurs: Wash with plenty of soap and water and avoid repeated exposure. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | | |
|-----------------------------|------------------|--------|
| Crystalline Silica (Quartz) | (CAS 14808-60-7) | < 85 % |
| White Portland Cement | (CAS 65997-15-1) | <20 % |
| Hydrated Lime | (CAS 305-52-0) | < 5 % |
| Gypsum | (CAS 13397-24-5) | <2 % |

4. FIRST AID MEASURES

EYES: Irrigation of the eye immediately with water for fifteen minutes is a good safety practice.

SKIN: Contact will probably cause no more than irritation. Wash off in flowing water or shower. Wash clothing before reuse.

INGESTION: Give 1 –2 large glasses of water or milk. Immediately seek medical aid.

INHALATION: Remove to fresh air if effect occurs. Consult medical personnel.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE-FIGHTING MEASURES

FLASH POINT: 1076°F

METHOD USED: PMCC

FLAMMABLE LIMITS

LFL: Not applicable

UFL: Not applicable

EXTINGUISHING MEDIA: Will not ignite

FIRE AND EXPLOSION HAZARDS: None.

FIRE-FIGHTING EQUIPMENT: Wear positive pressure SCBA.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: Collect in suitable containers. Residual may be removed using steam or hot soapy water.

DISPOSAL METHOD: Bury in an approved landfill; in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Practice good caution and personnel cleanliness to avoid skin and eye contact. Avoid breathing dust. Store in a cool dry place. Avoid exposure to moisture as material may solidify.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Good room ventilation usually adequate for most operations.

RESPIRATORY PROTECTION: None normally needed.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. Use impervious gloves when prolonged or frequently repeated contact could occur.

EYE PROTECTION: Use chemical goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: Not applicable

VAP PRESS: Not applicable

VAP DENSITY: Not applicable

SOL. IN WATER: None

SP. GRAVITY: 2.70- 2.80

APPEARANCE: Fine White powder.

ODOR: No Odor

10. STABILITY AND REACTIVITY

STABILITY: (CONDITIONS TO AVOID) Stable

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Acid

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity: No Data Available

Environmental Fate: No Data Available

Bioaccumulation: No Data Available

Biodegradation: No Date Available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Large quantities should be recovered. Collect small quantities in waste metal drums and seal for removal to an approved landfill, or incinerate in accordance with current local, state, and federal regulations.

14. TRANSPORT INFORMATION

Transportation Emergency Number: CHEMTEL 1-800-255-3924.

DOT Shipping Name: NOT REGULATED

15. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown in this document are maximum or ceiling levels (expressed in weight %, unless otherwise specified) to be used for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA:

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, and LIABILITY ACT of 1980 (CERCLA): Requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at level which could require reporting under the statute are:

| Chemical Name | CAS Number | % By Weight | RQ |
|---------------|------------|-------------|----|
| NONE | | | |

0SUPERFUND AMENDMENTS and REAUTHORIZATION ACT of 1986 (SARA) TITLE III:

Sections 301-304 require emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355. Components present in this product at a level which could require reporting under this statute are:

| Chemical Name | CAS Number | % By Weight |
|---------------|------------|-------------|
| NONE | | |

Sections 311-312 require products be reviewed and applicable EPA Hazard Definitions be identified and made known.

EPA HAZARD CLASSIFICATIONS:

| | | | | |
|-----------|-----------|-----------|-----------|-----------|
| Acute | Chronic | Fire | Pressure | Reactive |
| Hazard | Hazard | Hazard | Hazard | Hazard |
| No | No | No | No | No |

Section 313 requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at level which could require reporting under the statute are:

| Chemical Name | CAS Number | % By Weight |
|---------------|------------|-------------|
| NONE | | |

If you are unsure if you must report more information, call the EPA Emergency Planning and Right-To-Know Hot Line: 800-535-0202 or 202-479-2449.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The components of this product are contained on the chemical substance inventory list.

16. OTHER INFORMATION

Date Revised: 05/06/2015

MANUFACTURER'S NAME AND ADDRESS:

ONYX CONCRETE COATINGS
1610 E. Miraloma Ave.
Placentia, CA 92870
Telephone: 714-572-6723

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