



SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product name : **STRONGSEAL PLUS**
 Product Code: **PART A**
 Product Use : Aqueous polyurethane dispersion
 Manufacturer/Supplier : CoverTec Products LLC
 10821 NW 50th Street
 Sunrise, FL 33351
 United States of America
 Product Information : 754-223-2465
 Transport Emergency : INFOTRAC: +1-800-535-5053
 Revision Date: 02/23/2020
 Preparation Date: 06/25/2015

SECTION 2 – HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Mixture
Classification (Regulation (EC) No 1272/2008)
 Skin Irritation - Category 2 [H315]
 Eye Irritation - Category 2A [H319]
 Specific Target Organ Toxicity, Single Exposure - Category 3; STOT RE 3 [H335]

2.2 Label Elements

This material is not considered hazardous according to OSHA HazCom 2012 (29 CFR 1910.1200)

Signal Word: None required

Hazard Statement(s): H315 – May Cause skin irritation
 H319 – May Cause eye irritation

Precautionary Statements:

[Prevention] H335– May Cause respiratory irritation
 P261 – Avoid breathing dust fumes and vapors
 P264 - Wash hands and other skin areas exposed to material thoroughly after handling.
 P271 - Use in a well-ventilated area.
 P280 - Wear protective gloves, protective clothing and eye protection.

[Response] P302 + P352 – If on skin: Wash with soap and water
 P362 - Take off contaminated clothing and wash before reuse.
 P332 + P313 - If skin irritation occurs: Get medical attention.
 P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if the victim feels unwell.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.
 P321 - Specific treatment: Call a POISON CENTER or doctor, or refer to Section 4 of this SDS.

[Storage] P405 – Store above 41
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

[Disposal] P501 – Dispose of contents in accordance with national and local regulations

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

| <u>INGREDIENT</u> | <u>CAS NO.</u> | <u>OSHA PEL</u> | <u>ACGIH TLV</u> | <u>OSHA STEL</u> | <u>WEIGHT %</u> |
|----------------------------------|----------------|-----------------|------------------|------------------|-----------------|
| Acrylic Polymer | Trade Secret | NONE | NONE | NONE | <45 |
| Diethylene Glycol Monbutyl Ether | 112-34-5 | NONE | NONE | NONE | <10 |
| Triethanolamine | 102-71-6 | NONE | NONE | NONE | <3 |

There are no additional components above the relevant concentration limits according to OSHA HazCom 2012.

SECTION 4 – FIRST AID MEASURES

4.1 Description of first aid measures



Inhalation: If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight fitting clothing such as a collar, tie, belt or waistband. Seek medical attention immediately.

Eyes: Immediately flush eyes with large amounts of water for at least 15 minutes, holding the eyes open with finger tips and occasionally lifting the upper and lower lids. Use lukewarm water if possible. Remove contact lenses, if present and easy to do, after the first 2 minutes and continue rinsing. If eye irritation persists, seek immediate medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing and continue rinsing for at least 15 minutes. Use lukewarm water, if possible. Wash contaminated clothing and shoes thoroughly before reuse. If skin irritation persists, if rash develops or if victim feels unwell, seek medical attention. Cured material may be difficult to remove from skin.

Ingestion: Rinse mouth thoroughly with water if victim is conscious. Remove dentures, if any. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. To prevent aspiration of swallowed product, lay victim on side the head lower than the waist. If victim feels unwell, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes eye irritation. Symptoms may include redness, swelling, stinging and tearing.

Skin: Causes mild, transient skin irritation. Symptoms include localized redness, itching and discomfort. May cause skin rash in susceptible individuals. Mist or vapor may cause irritation of the nose, throat and respiratory tract. Symptoms may include sore throat, coughing, headache, nausea and shortness of breath.

Ingestion: May cause gastrointestinal irritation with nausea, abdominal pain, vomiting and diarrhea. May cause headache and dizziness. Repeated ingestion may be harmful.

Chronic: Pre-existing disorders of the skin and respiratory system may be aggravated by exposure to this product. Triethanolamine is a suspected carcinogen (refer to Section 11.2).

4.3 Indication of any immediate medical attention and special treatment needed

Advice to Doctor and Hospital Personnel: Treat symptomatically and supportively.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: Use dry chemical, carbon dioxide, foam and water spray

Unsuitable methods of extinction: None known

5.2 Special hazards arising from the substance or mixture

Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

5.3 Advice for firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible auto-ignition or explosion when exposed to extreme heat. If possible, firefighters should control runoff water to prevent environmental contamination.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate protective clothing designated in Section 8. Remove all sources of ignition. Ventilate the area.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Cover drains and contain spill. Cover with a large quantity of inert absorbent. Do not use combustible material such as saw dust. Shovel or sweep up product and place into an approved container for proper disposal. Clean contaminated area with soap and water.

6.4 Reference to other sections

For indications about waste treatment, see Section 13.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for safe handling

Observe label precautions. Wear all appropriate protective equipment specified in Section 8. Keep containers closed when not in use.

Advice on protection against fire and explosion

No special precautions against fire and explosion are required.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Keep container tightly closed. Keep from freezing. Protect container against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers of this material may be hazardous when empty as they contain product residue. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION



8.1 Control parameters

| <u>CAS Number</u> | <u>Ingredient</u> | <u>OSHA PEL</u> | <u>ACGIH TLV</u> | <u>NIOSH</u> |
|-------------------|-------------------|-----------------|------------------|--------------|
| 102-71-6 | Tetraethanolamine | | 5 mg/m3 TWA | |

8.2 Exposure controls

Engineering Measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking or using the lavatory.

Eye/face protection: Wear protective goggles or safety glasses with unperforated side shields during use. Refer to 29 CFR 1910.133, ANSI Z87.1 or European Standard EN 166.

Hand Protection: Wear gloves recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Other protective equipment: Protective clothing. Protective boots, if the situation requires.

Respiratory Protection: None required with normal use. Always use an approved respirator when vapor/aerosols are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls: Do not empty into drains

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form: Milky white liquid

Odor: slight

Autoignition temperature No Data Available

Flash Point > 200 °C (>392 °F)

Flammable Limits - LEL Not Applicable

Flammable Limits - UEL Not Applicable

Boiling point 100 degrees Celsius, 212 degrees Fahrenheit

Freezing point similar to water

Density Not determined

Vapor Density No Data Available

Vapor Pressure No Data Available

Specific Gravity 1.1

pH No Data Available

Melting point Not Applicable

Solubility in Water Soluble

Volatile Organic Compounds = >80%

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

No specific test data related to reactivity is available for this product.

10.2 Chemical stability

Stable under normal conditions of use and recommended storage conditions

10.3 Possibility of hazardous reactions

None known

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Extreme temperatures, incompatible materials

10.5 Incompatible materials

Isocyanates, strong alkalis, strong acids, strong oxidizing agents

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, oxides of nitrogen and other toxic gases.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity

Expected to have low acute oral toxicity

Acute inhalation toxicity

No data available

Acute dermal toxicity

Expected to have low acute dermal toxicity

Skin irritation

May cause mild, transient skin irritation.

**Eye irritation**

Causes eye irritation.

Sensitization

May cause skin sensitization in susceptible individuals.

Genotoxicity in vitro

No data available

Mutagenicity

No data available

Specific organ toxicity - single exposure

No data available

Specific organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Further information

Triethanolamine: IARC Class 3 carcinogen: Not classifiable as to its carcinogenicity to humans. Not classified as a carcinogen by OSHA, NTP or ACGIH.

No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 – ECOLOGICAL INFORMATION**12.1 Toxicity**

The aquatic toxicity of this product has not been experimentally determined. However, it is expected to have low acute aquatic toxicity based on the acute aquatic toxicity of the individual components and their concentrations in this composition.

12.2 Persistence and degradability

Product is not readily biodegradable.

12.3 Bioaccumulation potential

Product is not expected to bioaccumulate.

12.4 Mobility

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects**Additional ecological information**

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 – DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues; observe all precautions for product. Do not heat or cut empty containers with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If containers are to be disposed, ensure that all product residues are removed prior to disposal.

This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff contact with soil and entry into waterways, drains and sewers.

Hazardous waste: The classification of this product may meet the criteria for a hazardous waste.

SECTION 14 – TRANSPORTATION INFORMATION**Not regulated for transport**

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

SECTION 15 – REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for substance or mixture****U. S. Federal Regulations**

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.



TSCA Status: All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory.

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

SARA 313 Information: Glycol Ethers (SARA code N230) are subject to the reporting levels established by Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: No components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: No components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): This product contains the following CERCLA reportable substances: Glycol Ethers - There is no RQ assigned to this broad class, although the class is a CERCLA hazardous substances. Refer to 50 Federal Register 13456 (April 4, 1985).

Clean Air Act (CAA)

Glycol Ethers (EDF-109) are listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112(b).

This product does not contain any Class 1 Ozone depleters.

This product does not contain any Class 2 Ozone depleters.

Clean Water Act (CWA)

Glycol Ethers (EDF-109) are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains trace amounts of substances known to the State of California to cause cancer.

Other U.S. State Inventories:

Tetraethanolamine (CAS #102-71-6) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, MA, MN, NJ, PA.

Canada

WHMIS Hazard Symbol and Classification: None allocated

Canadian Controlled Products Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations, and the SDS contains all the information required by the Controlled Products Regulations.

Canadian Ingredient Disclosure List (IDL): Tetraethanolamine and 2 proprietary components contained at <1% each are listed on the IDL.

Canadian National Pollutant Release Inventory (NPRI): A proprietary component is listed on the NPRI.

European Economic Community

Labeling (67/548/EEC or 1999/45/EC): None allocated

WGK, Germany (Water danger/protection): 1

SECTION 16- OTHER INFORMATION

HMIS HAZARD CLASSIFICATION

HEALTH: 1 FLAMMIBILITY: 0 REACTIVITY: 0 PERSONAL PROTECTIVE EQUIPMENT: B



guarantee of any kind, expressed or implied, and we assume no responsibility for any loss, damage, expense, direct or consequential, arising from their use.

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product name : **STRONGSEAL PLUS**

Product Code: **PART B**

Product Use : Catalyst based on Hexamethylene Diisocyanate

Manufacturer/Supplier : CoverTec Products LLC

10857 NW 50th Street

Sunrise, FL 33351

United States of America

Product Information : 754-223-2465

Transport Emergency : INFOTRAC: +1-800-535-5053

Revision Date: 02/23/2020

Preparation Date: 06/25/2015

SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification Acute toxicity (Inhalation):

Category 4

Respiratory sensitisation:

Category 1

Skin sensitisation:

Category 1

Specific target organ toxicity - single exposure:

Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure (Inhalation):

Category 2 (Lungs)

GHS Label Elements Hazard pictograms:



Signal Word: Danger Hazard Statements:

May cause an allergic skin reaction.

Harmful if inhaled.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause respiratory irritation.

May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

Precautionary statements:

Prevention:

Do not breathe dust, mist, gas, vapors or spray. Use only outdoors or in a well-ventilated area.

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

Wear protective gloves.

In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards. For additional details, see section 8 of the SDS.

Response:

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

Call a doctor or emergency medical facility (i.e. 911) if you feel unwell.

If skin irritation or rash occurs: Get medical attention. If experiencing respiratory symptoms: Call a doctor or emergency medical facility (i.e. 911). Wash contaminated clothing before reuse.

Storage:

Store locked up.

Store in a well-ventilated place. Keep container tightly closed

Disposal:

Dispose of contents and container in accordance with existing federal, state, and local environmental control laws



SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Components Weight Percent | Components | CAS-No. | Classification |
|--|--|----------------|---|
| 55 - 90% | Homopolymer of Hexamethylene Diisocyanate | 28182-81-2 | Acute toxicity Category 4 Inhalation. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. Specific target organ toxicity - repeated exposure Category 2 Inhalation Lungs. |
| 10 - 20% | Hydrophilic Aliphatic Polyisocyanate based on Hexamethylene Diisocyanate | 666723-27-9 | Acute toxicity Category 3 Inhalation. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system. |
| 0.1 - 1% | Hexamethylene-1,6-Diisocyanate | 822-06-0 | Acute toxicity Category 4 Oral. Acute toxicity Category 1 Inhalation. Skin corrosion Category 1. Serious eye damage Category 1. Respiratory sensitisation Category 1. Skin sensitisation Category 1. Specific target organ toxicity - single exposure Category 3 Respiratory system |

SECTION 4 – FIRST AID MEASURES

Most Important Symptom(s)/Effect(s)Acute: Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible. May cause skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing. May cause irritation of the digestive tract; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention if irritation develops.

Skin Contact:

Immediately remove contaminated clothing and shoes. Wash off with soap and water. Use lukewarm water if possible. Wash contaminated clothing before reuse. For severe exposures, immediately get under safety shower and begin rinsing. Get medical attention if irritation develops and persists.

Inhalation:

Move to an area free from further exposure. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

Notes to Physician:

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.



SECTION 5 – FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, Carbon dioxide (CO₂), Foam, water spray for large fires.

Unsuitable Extinguishing Media: High volume water jet

Fire Fighting Procedure: Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

Hazardous Decomposition Products: By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds.

Unusual Fire/Explosion Hazards: Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO₂ formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures: Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area and prevent access of unauthorized personnel. Notify management.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material such as vermiculite, etc. Allow the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface.

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralization process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

Neutralization options: ZEP® Commercial Heavy-Duty Floor Stripper, EASY OFF® Grill and Oven Cleaner, or a mixture of 90% Fantastic® Heavy Duty All Purpose Cleaner and 10% household ammonia

SECTION 7 – HANDLING AND STORAGE

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

Storage period: 1 year at 25degrees Celsius or 77 degrees Fahrenheit
Minimum storage temperature is 7 degrees Celsius or 44 degrees Fahrenheit
Maximum storage temperature is 50 degrees Celsius or 122 degrees Fahrenheit
Store away from food.

Avoid water, amines, strong bases, alcohols, copper alloys

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Homopolymer of Hexamethylene Diisocyanate (28182-81-2)

Hexamethylene-1,6-Diisocyanate (822-06-0)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 0.005 ppm

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Industrial Hygiene/Ventilation Measures

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne monomeric HDI.

Respiratory Protection:

A respirator that is recommended or approved for use in isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature

use which may produce inhalation exposures. A supplied-air respirator (either positive pressure or continuous flow-type) is recommended. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and HDI polyisocyanate. Specific conditions under which air-purifying respirators can be used are outlined in the following sections.

Observe OSHA regulations for respirator use (29 CFR 1910.134).



SPRAY APPLICATION:

A. Good industrial hygiene practice dictates that when isocyanate-based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of coatings containing this product the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: - the airborne isocyanate concentrations are not known; or -the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or -the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or -operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -The airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) hours (10 times 8 hour TWA exposure limit); and -the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m³ averaged over 8 hours or 10 mg/m³ averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

NON-SPRAY OPERATIONS:

A. During non-spray operations such as mixing, batch-making, brush or roller application, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form: liquid

Odor: slight

Autoignition temperature ca. 445 °C (833 °F) (DIN 51794)

Flash Point: 365 Fahrenheit

Flammable Limits - LEL Not Applicable

Flammable Limits - UEL Not Applicable

Boiling point: Decomposition

Freezing point: not determined

Density: Not determined

Vapor Density: No Data Available

Vapor Pressure: HDI Polyisocyanate: 5.2 X 10⁻⁹ @ 68 F (20 C) mmHg

Specific Gravity: 1.15 (25 degrees Celsius)

Density ca. 1.15 g/cm³ @ 20 °C (68 °F) (DIN 51757)

pH no data

Specific Gravity: Approximately 1.15 @ 20 °C (68 °F)

Melting point: Not Applicable

Solubility in Water: Insoluble - Reacts slowly with water to liberate CO₂ gas

SECTION 10 – STABILITY AND REACTIVITY

Hazardous Reaction: Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization

Stability: Stable under normal conditions of use and storage.

Materials to Avoid : Water, Amines, Strong bases, Alcohols, Copper alloys

Conditions to Avoid : Heat, flames and sparks. Protect from freezing.

Hazardous Decomposition Products: By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin contact, Inhalation, Eye contact

Health Effects and SymptomsAcute: Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

May cause skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several



hours after exposure. Extreme asthmatic reactions can be life threatening. 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. Sensitization can be permanent. Chronic overexposure to isocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates. Prolonged vapor contact with the eyes may cause conjunctivitis.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Data on the product is not available.

Please find the data available for the components.

Toxicity Data for Homopolymer of Hexamethylene Diisocyanate

Toxicity Note

Data is based on a similar product, including residual monomer.

Acute Oral Toxicity

LD50: \geq 5000 mg/kg (rat, female) (OECD Test Guideline 423)

Toxicological studies at the product

Acute Inhalation Toxicity

LC50: 0.39 mg/l, 4 h (rat, female) (OECD Test Guideline 403)

Toxicological studies of a comparable product. The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: $>$ 2000 mg/kg (rat, male/female) (OECD Test Guideline 402)

Studies of a comparable product.

LD50: $>$ 2000 mg/kg (rabbit, male/female)

Studies of a comparable product.

Skin Irritation

rabbit, OECD Test Guideline 404, slight irritant

Toxicological studies at the product

Eye Irritation

rabbit, OECD Test Guideline 405, slight irritant

Toxicological studies at the product

Sensitization

Skin sensitization (local lymph node assay (LLNA)):: Causes sensitisation. (mouse, OECD Test Guideline 429)

Toxicological studies at the product

Respiratory sensitization: sensitizer

Studies of a comparable product.

Repeated Dose Toxicity

90 d, Inhalative: NOAEL: 3,3, (rat, male/female, 6 hours a day, 5 days a week)

Toxicological studies of a comparable product. Evidence of damage to organs other than the organs of respiration was not found.

Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): No indication of mutagenic effects. (Metabolic Activation: with/without)

Toxicological studies at the product

Chromosome aberration test in vitro: negative (Chinese hamster V79 cell line, Metabolic Activation: with/without)

Toxicological studies of a comparable product.

Point mutation in mammalian cells (HPRT test): negative (Metabolic Activation: with/without)

Toxicological studies of a comparable product.

Toxicity Data for Hydrophilic Aliphatic Polyisocyanate based on Hexamethylene Diisocyanate

Toxicity Note

Data is based on a similar product, including residual monomer.

Acute Oral Toxicity

LD50: \geq 5000 mg/kg (rat) (OECD Test Guideline 423)

Studies of a comparable product.

Acute Inhalation Toxicity

LC50: 0.158 mg/l, 4 h (rat, male/female) (OECD Test Guideline 403)

Toxicological studies of a comparable product. The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Skin Irritation

rabbit, OECD Test Guideline 404, An irritant effect cannot be distinguished from a mechanical load caused by the removal of the test specimen.

Toxicological studies of a comparable product.

Eye Irritation

rabbit, OECD Test Guideline 405, slight irritant

Toxicological studies of a comparable product.

Sensitization

Skin sensitization (local lymph node assay (LLNA)):: positive (mouse, OECD Test Guideline 429)

Toxicological studies of a comparable product.

Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): No indication of mutagenic effects.

Toxicological studies of a comparable product.



Toxicity Data for Hexamethylene-1,6-Diisocyanate

Acute Oral Toxicity

LD50: 746 mg/kg (rat, male) (OECD Test Guideline 401)

LD50: 959 mg/kg (rat, male) (OECD Test Guideline 401)

Acute Inhalation Toxicity

LC50: 0.124 mg/l, 4 h (rat, male/female) (OECD Test Guideline 403)

Acute Dermal Toxicity

LD50: > 7000 mg/kg (rat, male/female) (OECD Test Guideline 402)

Skin Irritation

rabbit, OECD Test Guideline 404, Corrosive

Eye Irritation

rabbit, OECD Test Guideline 405, Corrosive

Sensitization

dermal: sensitizer (guinea pig, Maximisation Test (GPMT))

Other isocyanates have been shown to produce dermal and respiratory sensitization in several species (guinea pigs, mice, rabbits, dogs). In addition, there is some evidence to suggest that cross-sensitization between different types of diisocyanates may occur.

dermal: sensitizer (Human, Case Report)

Respiratory sensitization: sensitizer (guinea pig)

Repeated Dose Toxicity

2 years, inhalation: NOAEL: < 0.005 ppm, LOAEL: 0.005 ppm, (rat, Male/Female, 6 hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): negative (Salmonella typhimurium, Metabolic Activation: with/without)

Point mutation in mammalian cells (HPRT test): negative (Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus test: negative (mouse, male/female, Inhalative)

negative

Carcinogenicity

rat, male/female, Inhalative, 2 yrs, 6 hours/day, 5 days/week, Did not show carcinogenic effects in animal experiments.

Toxicity to Reproduction/Fertility

Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test, Inhalative, 6 hours/day 7 days/week, (rat, male/female)

NOAEL (F2): 0.3 ppm Fertility and developmental toxicity tests did not reveal any effect on reproduction.

Developmental Toxicity/Teratogenicity

Rat, female, inhalation, gestation days 0 - 19, daily, NOAEL (teratogenicity): >0.3 ppm, NOAEL (maternal): < 0.3 ppm No Teratogenic effects observed at doses tested.

No fetotoxicity observed at doses tested.

Neurological Effects

Rats exposed by inhalation, 6 hours/day, for approximately 3 weeks, to concentrations as high as 0.3 ppm showed no neurobehavioral effects or damage to nerve tissues.

Carcinogenicity:

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

SECTION 12 – ECOLOGICAL INFORMATION

Biodegradation

0 %, Exposure time: 28 Days, Not readily biodegradable.

Acute and Prolonged Toxicity to Fish

LC0: > 100 mg/l (Zebra fish (Brachydanio rerio), 96 h)

Acute Toxicity to Aquatic Invertebrates

EC0: > 100 mg/l (Water flea (Daphnia magna), 48 h)

Toxicity to Aquatic Plants

EC50: > 1,000 mg/l, (Green algae (Scenedesmus subspicatus), 72 h)

Toxicity to Microorganisms

EC50: > 1,000 mg/l, (Activated sludge microorganisms, 3 h)

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method: Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Incineration is the preferred method.

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

RCRA Hazard Class: Non-regulated

SECTION 14 – TRANSPORTATION INFORMATION

Land transport (DOT) Proper Shipping Name:

Other regulated substances, liquid, n.o.s. (contains Hexamethylene-1,6-Diisocyanate)

Hazard Class or Division: 9

UN/NA Number: NA3082



Packaging Group: III

Hazard Label(s): Class 9

RSPA/DOT Regulated Components: Hexamethylene-1,6-Diisocyanate

Reportable Quantity: 9074 kg (20005 lb)

Sea transport (IMDG) Non-Regulated

Air transport (ICAO/IATA) Non-Regulated

Additional Transportation Information

When in individual containers of less than the Product RQ, this material ships as non-regulated.

SECTION 15 – REGULATORY INFORMATION

United States Federal Regulations

US. Toxic Substances Control Act:

Listed on the TSCA Inventory

US. EPA CERCLA Hazardous Substances (40 CFR 302)

Components: None

SARA Section 311/312 Hazard Categories:

Acute Health Hazard

Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

Components:

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:

None

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual

states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

| Weight percent | Components | CAS-No. |
|----------------|--|-------------|
| 55-90% | Homopolymer of Hexamethylene Diisocyanate | 28182-81-2 |
| 10 - 20% | Hydrophilic Aliphatic Polyisocyanate based on Hexamethylene Diisocyanate | 666723-27-9 |
| 0.1 - 1% | N,N-dimethylcyclohexylamine | 98-94-2 |
| 0.1 - 1% | Hexamethylene-1,6-Diisocyanate | 822-06-0 |

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

| Weight percent | Components | CAS-No. |
|----------------|--------------------------------|----------|
| 0.1 - 1% | N,N-dimethylcyclohexylamine | 98-94-2 |
| 0.1 - 1% | Hexamethylene-1,6-Diisocyanate | 822-06-0 |

California Prop. 65:

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

SECTION 16– OTHER INFORMATION

HMIS HAZARD CLASSIFICATION

HEALTH: 2 FLAMMIBILITY: 1 REACTIVITY: 0 PERSONAL PROTECTIVE EQUIPMENT: B