



MATERIAL SAFETY DATA SHEET

International Epoxies & Sealers
30241 Commerce Drive
San Antonio, FL 33576
USA

EMERGENCY TELEPHONE
CALL INFOTRAC: 1-800-535-5053
OUTSIDE THE U.S.A : 1-352-323-3500

1. Product and Company Identification

Product Name: INTER-LINER BLACK HYBRID COATING (SIDE A)
Material Number: 8710
Chemical Family: Aliphatic Polyisocyanate

2. Hazards Identification

Emergency Overview

WARNING! **Color:** Colorless to light yellow **Form:** liquid **Odor:** Mild, Characteristic.
Toxic gases/fumes may be given off during burning or thermal decomposition. Closed container may forcibly rupture under extreme heat or when contents have been contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Causes eye irritation. May cause lung damage.

Potential Health Effects

Primary Routes of Entry: Skin Contact, Inhalation, Eye Contact

Medical Conditions Aggravated by Exposure: Skin Allergies, Eczema, Asthma, Respiratory disorders

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation

Acute Inhalation

Diisocyanate or polyisocyanate 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

Material Name: Inter-Liner Black Hybrid Coating

Article Number: 8710

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.

Chronic Inhalation

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates or polyisocyanates 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 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 diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

Skin

Acute Skin

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

Chronic Skin

Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization.

Eye

Acute Eye

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

Chronic Eye

Prolonged vapor contact may cause conjunctivitis.

Ingestion

Acute Ingestion

May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Carcinogenicity:

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

3. Composition/Information on Ingredients

Hazardous Components

Residual diisocyanate monomer content:, <0.60%

Weight %	Components	CAS-No.
95 - 100%	Homopolymer of Hexamethylene	28182-81-2

<=0.6%

Diisocyanate
Hexamethylene-1,6-Diisocyanate

822-06-0

4. First Aid Measures

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. 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. Extreme asthmatic reactions can be life threatening.

Ingestion

Do not induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

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.

5. Fire-Fighting Measures

Suitable Extinguishing Media: dry chemical, carbon dioxide (CO₂), foam, water spray for large fires.

Special Fire Fighting Procedures

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.

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.

6. Accidental release measures

Spill and Leak Procedures

Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Call IES at 800-451-7206 for assistance and advice. Major Spill or Leak (Standing liquid): To minimize vapor, cover the spillage with fire fighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Minor Spill or Leak (Wet surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype® test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO₂) escape.

Additional Spill Procedures/Neutralization

Neutralization solutions:

- (1) Colorimetric Laboratories Inc. (CLI) decontamination solution.
- (2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10) and 5% n-propanol.
- (3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10).
- (4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

IES requires that INFOTRAC be immediately notified (800-535-5053) when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Distribution includes transportation, storage incidental to transportation, loading and unloading. Such notification must be immediate and made by the person having knowledge of the release.

7. Handling and Storage

Storage Temperature:

minimum: 0 °C (32 °F)
maximum: 50 °C (122 °F)

Storage Period

6 Months @ 25 °C (77 °F): based on similar material

Handling/Storage Precautions

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.

Further Info on Storage Conditions

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

8. Exposure Controls / Personal Protection

Homopolymer of Hexamethylene Diisocyanate (28182-81-2)

Bayer Exposure Limit

Time Weighted Average (TWA): 0.5 mg/m³

Bayer Exposure Limit

Short Term Exposure Limit (STEL): 1.00 mg/m³ (15-min)

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

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 0.005 ppm

Bayer Exposure Limit

Ceiling Limit Value: 0.02 ppm

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. Therefore, when the coatings system will be applied in a non-spray manner, 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 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 concentrations of the isocyanate monomer are below 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); and - the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m³ averaged over eight (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.

Hand Protection

Gloves should be worn., Nitrile rubber gloves., Butyl rubber gloves., Neoprene gloves

Eye Protection

When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

Skin and body protection

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Gloves, long sleeved shirts and pants.

Medical Surveillance

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted. Refer to the Bayer pamphlet (Medical Surveillance Program for Isocyanate Workers) for additional guidance.

Additional Protective Measures

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

9. Physical and chemical properties

Form:	liquid
Color:	Colorless to light yellow
Odor:	Mild, Characteristic
pH:	Not Applicable
Boiling Point/Range:	Begins at > 300 °C (> 572 °F) (DIN 53171) Estimated based on component(s)
Flash Point:	Approximately 216 °C (420.8 °F) (DIN 22719) based on similar material
Lower Explosion Limit:	Not Established
Upper Explosion Limit:	Not Established
Vapor Pressure:	Approximately 9 mbar @ 20 °C (68 °F) Estimated based on

component(s)
Approximately 19 mbar @ 50 °C (122 °F) Estimated based on component(s)
Approximately 20 mbar @ 55 °C (131 °F) Estimated based on component(s)
Specific Gravity: Approximately 1.12 @ 20 °C (68 °F) (DIN 51757)
Solubility in Water: Insoluble - Reacts slowly with water to liberate CO2 gas
Viscosity, Dynamic: Approximately 500 - 900 cP @ 25 °C (77 °F)
Bulk Density: Approximately 9.31 lb/gal
Molecular Weight: 500 Approximate Value, For the polyisocyanate
Pour Point: Approximately -51 °C (-59.8 °F) (DIN ISO 3016) Estimated based on component(s)

10. Stability and Reactivity

Hazardous Reactions

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

None known.

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

11. Toxicological Information

Toxicity Data for Homopolymer of Hexamethylene Diisocyanate

Acute Oral Toxicity

LD50: > 5,000 mg/kg (Rat)
Estimated Value

Acute Inhalation Toxicity

LC50: 390-453 mg/m³, aerosol, 4 hrs (Rat, Male/Female)
RD50: 20.8 mg/m³, 3 hrs

Acute dermal toxicity

LD50: > 5,000 mg/kg (rabbit)

Skin Irritation

rabbit, Draize, Slightly irritating

Eye Irritation

rabbit, Draize, Slightly irritating

Sensitization

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

dermal: non-sensitizer (Guinea pig, Buehler)

inhalation: non-sensitizer (guinea pig)

Repeated Dose Toxicity

3 wks, inhalation: NOAEL: 3.7 - 4.3 mg/m³, (Rat)

90 ds, inhalation: NOAEL: 3.3 - 3.4 mg/m³, (Rat)

Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

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

12. Ecological Information

Ecological Data for Homopolymer of Hexamethylene Diisocyanate

Biodegradation

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

Acute and Prolonged Toxicity to Fish

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

Acute Toxicity to Aquatic Invertebrates

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

Toxicity to Aquatic Plants

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

Toxicity to Microorganisms

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

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 Container Precautions

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.

14. Transportation information

Land transport (DOT)

Non-Regulated

RSPA/DOT Regulated Components:

Hexamethylene-1,6-Diisocyanate

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.

15. Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

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, Reactivity 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):**

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

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 MSDS 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:

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
95 - 100%	Homopolymer of Hexamethylene Diisocyanate	28182-81-2

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

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
<=0.6%	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.

16. Other Information

NFPA 704M Rating

Health	2
Flammability	1
Reactivity	1
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

HMIS Rating

Health	2*
Flammability	1
Physical Hazard	1

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* = Chronic Health Hazard

The method of hazard communication for International Epoxies & Sealers is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by International Epoxies & Sealers as a customer service.

The handling of products containing reactive HDI polyisocyanate/prepolymer and/or monomeric HDI requires appropriate protective measures referred to in this MSDS. These products are therefore recommended only for use in industrial or trade (commercial) applications. They are not suitable for use in Do-It-Yourself applications.

Contact Person: Product Safety Department
Telephone: (800)451-7206
MSDS Number: 8710
Version Date: 07/15/09
Report Version: 1.1

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of IES. The information in this MSDS relates only

to the specific material designated herein. IES assumes no legal responsibility for use of or reliance upon the information in this MSDS.



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CALL INFOTRAC: 1-800-535-5053
OUTSIDE THE U.S.A: 1-352-323-3500

1. Product and Company Identification

Product Name: INTER-LINER BLACK HYBRID COATING (SIDE B)
Material Number: 8710
Chemical Family: Polyol System

2. Hazards Identification

Emergency Overview

WARNING! Color: Black **Form:** liquid **Odor:** Amine.
Harmful by inhalation, in contact with skin and if swallowed. Inhalation, skin absorption, or ingestion may cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom of this may be cyanosis (purplish-blue coloring of skin, fingernails, and lips). Toxic gases/fumes may be given off during burning or thermal decomposition. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. May cause respiratory tract irritation. May cause skin irritation. May cause allergic skin reaction. Causes eye irritation. Harmful if swallowed. May cause liver damage. May cause kidney damage. Contains material which may cause cancer.

Potential Health Effects

Primary Routes of Entry: Skin Contact, Eye Contact

Medical Conditions Aggravated by Exposure: Eye disorders, Respiratory disorders, Skin disorders

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation

Acute Inhalation

For Component: Aromatic Amine

May cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom of this may be cyanosis (purplish-blue coloring of the skin, fingernails, and lips). Inhalation is unlikely due to the low vapor pressure. If misted or handled at elevated temperatures, high concentrations may cause respiratory tract irritation.

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For Component: Calcium Silicate

May cause mechanical irritation.

For Component: Aliphatic Amine

Inhalation is unlikely due to the low vapor pressure. If misted or handled at elevated temperatures, high concentrations may cause respiratory tract irritation. May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest. Corrosive with symptoms of coughing, burning, ulceration, and pain.

For Component: Amorphous Silica

May cause mechanical irritation.

For Component: Aluminum Oxide

May cause mechanical irritation.

For Component: Potassium oxide

Corrosive with symptoms of coughing, burning, ulceration, and pain. May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

For Component: Calcium Oxide

Corrosive with symptoms of coughing, burning, ulceration, and pain.

For Component: Sodium oxide

Corrosive with symptoms of coughing, burning, ulceration, and pain. May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

For Component: Dibutyltin Diacetate

May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion.

For Component: Polysiloxane

Inhalation is unlikely due to the low vapor pressure. If misted or handled at elevated temperatures, high concentrations may cause respiratory tract irritation.

For Component: Carbon Black

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

Chronic Inhalation

For Component: Aromatic Amine

May cause liver damage.

For Component: Amorphous Silica

Prolonged inhalation of amorphous silica may produce x-ray changes in the lungs without disability.

For Component: Carbon Black

Epidemiological studies of workers in the carbon black producing industry have shown no significant health effects due to occupational exposure to carbon black. In addition, studies in rats have shown effects due only to the prolonged exposure from the accumulation of nontoxic dust in the pulmonary system including chronic inflammation, lung fibrosis, and lung tumors.

Skin

Acute Skin

For Component: Aromatic Amine

May cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom of this may be cyanosis (purplish-blue coloring of the skin, fingernails, and lips). If sufficient amounts are absorbed, systemic toxicity may occur with symptoms similar to those described in acute

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inhalation.

For Component: Aliphatic Amine

Moderately toxic by skin absorption. Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage. May cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash.

For Component: Aliphatic Glycol

Not expected to be irritating. Slightly toxic by skin absorption.

For Component: Aluminum Oxide

May cause mechanical irritation.

For Component: Potassium oxide

Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.

For Component: Calcium Oxide

Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.

For Component: Sodium oxide

Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.

For Component: Dibutyltin Diacetate

Causes irritation with symptoms of reddening, itching, and swelling. If sufficient amounts are absorbed, systemic toxicity may occur with symptoms similar to those described in acute inhalation.

For Component: Polysiloxane

May cause slight irritation.

For Component: UV Stabilizer

May cause slight irritation. May cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash.

For Component: Carbon Black

May cause mechanical irritation.

Eye

Acute Eye

For Component: Aromatic Amine

Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

For Component: Calcium Silicate

May cause irritation with symptoms of reddening, tearing and stinging.

For Component: Aliphatic Amine

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.

For Component: Aliphatic Glycol

May cause irritation with symptoms of reddening, tearing and stinging.

For Component: Amorphous Silica

May cause mechanical irritation.

For Component: Aluminum Oxide

May cause mechanical irritation.

For Component: Potassium oxide

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Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage. May cause blindness.

For Component: Calcium Oxide

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.

For Component: Sodium oxide

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.

For Component: Dibutyltin Diacetate

Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

For Component: Polysiloxane

May cause irritation with symptoms of reddening, tearing and stinging.

For Component: UV Stabilizer

May cause slight irritation.

For Component: Carbon Black

May cause mechanical irritation.

Ingestion

Acute Ingestion

For Component: Aromatic Amine

Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. May cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom of this may be cyanosis (purplish-blue coloring of the skin, fingernails, and lips). Harmful if swallowed.

For Component: Aliphatic Amine

Moderately toxic by ingestion. Ingestion and/or vomiting may cause aspiration into the lungs resulting in chemical pneumonitis (inflammation of the lungs). May cause digestive tract burns.

For Component: Aliphatic Glycol

Slightly toxic by ingestion.

For Component: Aluminum Oxide

Not expected to be harmful if swallowed.

For Component: Potassium oxide

Corrosive to the digestive tract with symptoms of burning and ulceration.

For Component: Calcium Oxide

Corrosive to the digestive tract with symptoms of burning and ulceration.

For Component: Sodium oxide

Corrosive to the digestive tract with symptoms of burning and ulceration.

For Component: Dibutyltin Diacetate

May be fatal if swallowed. May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.

For Component: UV Stabilizer

Not expected to be harmful if swallowed.

Chronic Ingestion

For Component: Aromatic Amine

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May cause liver damage.

General Effects of Exposure

Chronic Effects of Exposure

For Component: Polysiloxane

No applicable information was found concerning any adverse chronic health effects from overexposure to this product.

Carcinogenicity:

Carbon Black

IARC - Overall evaluation: 2B Possible carcinogen.

3. Composition/Information on Ingredients

Hazardous Components

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
10 - 20%	Aromatic Amine	CAS# is a trade secret
5 - 10%	Calcium Silicate	13983-17-0
1 - 5%	Aliphatic Amine	CAS# is a trade secret
1 - 5%	Aliphatic Glycol	CAS# is a trade secret
1 - 5%	Amorphous Silica	7631-86-9
1 - 5%	Aluminum Oxide	1344-28-1
1 - 5%	Potassium oxide	12136-45-7
1 - 5%	Calcium Oxide	1305-78-8
1 - 5%	Sodium oxide	1313-59-3
1 - 5%	Dibutyltin Diacetate	1067-33-0
1 - 5%	Polysiloxane	
1 - 5%	UV Stabilizer	41556-26-7
1 - 5%	Carbon Black	1333-86-4

4. First Aid Measures

Eye Contact

In case of contact, flush with plenty of water for at least 15 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Call a physician immediately.

Skin Contact

Immediately remove contaminated clothing and shoes. Wash affected areas, including hair, beneath nails and other concealed areas with Polyethylene Glycol 400. Repeat the washing with soap and water. If Polyethylene Glycol 400 is not available, wash immediately with soap and plenty of cold water. Wash clothing and shoes before reuse. Get medical attention.

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration using a pocket mask type resuscitator. If breathing is difficult, give oxygen. In case of blue discoloration (cyanosis) of skin, lips, or fingernails, give oxygen to breathe. Get medical attention.

Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. Give two glasses of water for dilution. Do not give anything by mouth to an unconscious person. Call a physician.

Notes to physician

Immediately give oxygen if victim turns blue (lips, ears, fingernails). Since reversion of methaemoglobin to

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haemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need to be treated only by supportive measures.

5. Fire-Fighting Measures

Suitable Extinguishing Media: carbon dioxide (CO₂), dry chemical, foam, water spray for large fires.

Special Fire Fighting Procedures

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

6. Accidental release measures

Spill and Leak Procedures

Remove all sources of ignition, including flames, heat, and sparks. Ventilate area to remove vapors or dust. Evacuate and keep unnecessary people out of spill area. Use appropriate personal protective equipment during clean up. Dike or dam spilled material and control further spillage, if possible. Do not allow spilled material or wash water to enter sewers, surface waters, or groundwater systems. Large spills should be contained and pumped into original or similar containers. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Wash spill area with soap and water. Collect wash water for approved disposal. Notify local health and safety authorities and other appropriate agencies if necessary.

7. Handling and Storage

Storage Temperature:

minimum: 0 °C (32 °F)
maximum: 60 °C (140 °F)

Storage Period

6 Months: after receipt of material by customer

Handling/Storage Precautions

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Material is hygroscopic and may absorb small amounts of atmospheric moisture. If contamination with isocyanates is suspected, do not reseal containers. Do not get on skin or clothing. Do not get in eyes. Do not breathe vapours or spray mist.

Further Info on Storage Conditions

Store separate from food products. Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

8. Exposure Controls / Personal Protection

Aromatic Amine (CAS# is a trade secret)

Bayer Exposure Limit

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Time Weighted Average (TWA): 0.02 ppm

Calcium Oxide (1305-78-8)

US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 2 mg/m³
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 5 mg/m³

Aluminum Oxide (1344-28-1)

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 5 mg/m³ (Respirable fraction.)
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 15 mg/m³ (Total dust.)
US. ACGIH Threshold Limit Values
Hazard Designation: Group A4 Not classifiable as a human carcinogen.

Dibutyltin Diacetate (1067-33-0)

US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 0.1 mg/m³ as Sn
US. ACGIH Threshold Limit Values
Short Term Exposure Limit (STEL): 0.2 mg/m³ as Sn
US. ACGIH Threshold Limit Values
Skin designation: as Sn Can be absorbed through the skin.
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 0.1 mg/m³ as Sn
US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 2 mg/m³ as Sn
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 2 mg/m³ as Sn
US. ACGIH Threshold Limit Values
Hazard Designation: Group A4 Not classifiable as a human carcinogen.

Carbon Black (1333-86-4)

US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 3.5 mg/m³
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 3.5 mg/m³
US. ACGIH Threshold Limit Values
Hazard Designation: Group A4 Not classifiable as a human carcinogen.

Industrial Hygiene/Ventilation Measures

Use local and general exhaust ventilation to control levels of exposure.

Respiratory Protection

None required under normal conditions of use., The following respirator is recommended if airborne concentrations exceed the appropriate standard/guideline., NIOSH approved, air-purifying respirator with organic vapor cartridges and N-95 filters, Full face-piece is recommended.

Hand Protection

Permeation resistant gloves.

Eye Protection

Chemical resistant goggles must be worn.

Skin and body protection

Permeation resistant clothing

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Additional Protective Measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.

9. Physical and chemical properties

Form:	liquid
Color:	Black
Odor:	Amine
pH:	no data available
Freezing Point:	Not Established
Boiling Point/Range:	Not Established
Flash Point:	Not Established
Lower Explosion Limit:	Not Established
Upper Explosion Limit:	Not Established
Vapor Pressure:	Not Established
Density:	no data available
Specific Gravity:	Approximately 1.10
Solubility in Water:	Partially soluble
Autoignition Temperature:	Not Established
Viscosity, Dynamic:	Begins at 500 mPa.s
Bulk Density:	Approximately 9.18 lb/gal

10. Stability and Reactivity

Hazardous Reactions

Hazardous polymerization does not occur.

Stability

Stable

Materials to avoid

oxidizing agents, Isocyanates

Conditions to avoid

Avoid extreme heat or cold.

Hazardous decomposition products

By Fire: Carbon Dioxide; Carbon Monoxide; Hydrogen cyanide, nitrogen oxides (NO_x), Amines, other aliphatic fragments which have not been determined

11. Toxicological Information

Toxicity Data for Aromatic Amine

Acute Oral Toxicity

LD50: 472 mg/kg (Rat, Female)

LD50: 542 mg/kg (rat, male)

Acute Inhalation Toxicity

LC50: > 2.45 mg/l, 1 hrs (Rat)

Acute dermal toxicity

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LD50: > 1,000 mg/kg (rabbit)

Skin Irritation

rabbit, OECD Guideline for Testing of Chemicals, No. 404, Non-irritating

Eye Irritation

rabbit, Irritating to eyes.

Sensitization

Maximisation Test (GPMT): non-sensitizer (guinea pig)

Repeated Dose Toxicity

21 Days, dermal: NOAEL: 1 mg/kg, (rabbit, Male/Female, daily)

13 Days, inhalation: NOAEL: < 10 mg/l, (Rat,)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: positive (Salmonella typhimurium, Metabolic Activation: with)

Positive and negative results were seen in various in vitro studies.

Genetic Toxicity in Vivo:

Dominant Lethal Assay: negative (rat, Male/Female, oral)

Cytogenetic assay: positive (Rat, male, oral)

Micronucleus Assay: negative (mouse, Male/Female, intraperitoneal)

Carcinogenicity

Rat, Male/Female, oral, 2 years, daily
positive

Toxicity Data for Calcium Silicate

Eye Irritation

Eye Irritation

Repeated Dose Toxicity

12 -24 m, Inhalation: LOAEL: 10 mg/m3, (Rat, male)

Mutagenicity

Genetic Toxicity in Vitro:

Bacterial - gene mutation assay: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity

Rat, male, inhalation, 12 - 24 w,

No carcinogenic effects observed at the doses tested.

Toxicity Data for Aliphatic Amine

Acute Oral Toxicity

LD50: 1,030 mg/kg (Rat)

Acute dermal toxicity

LD50: 1,800 mg/kg (rabbit)

Skin Irritation

rabbit, irritating

Eye Irritation

rabbit, OECD Test Guideline 405, Corrosive

Sensitization

Material Name: Inter-Liner Black Hybrid Coating C
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dermal: sensitizer (Human, Patch Test)

Repeated Dose Toxicity

13 weeks, oral: NOAEL: approximately 60 mg/kg, (Rat, Male/Female, daily)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: Negative results were reported in various in vitro studies. (Salmonella typhimurium, Metabolic

Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (mouse, Male/Female, oral)

Toxicity Data for Aliphatic Glycol

Acute Oral Toxicity

LD50: 5,040 mg/kg (Rat)

Acute dermal toxicity

LD50: 3,810 mg/kg (rabbit)

Skin Irritation

rabbit, Non-irritating

Eye Irritation

rabbit, Severely irritating

rabbit, No eye irritation

Sensitization

Maximisation Test (GPMT): non-sensitizer

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative

Toxicity Data for Aliphatic Glycols

Acute Oral Toxicity

LD50: 2,000 mg/kg (Rat)

Acute dermal toxicity

LD50: 6.3 mL/kg (rabbit)

Skin Irritation

rabbit, Draize Test, Exposure Time: 24 hrs, Mild skin irritation

Toxicity Data for Amorphous Silica

Acute Oral Toxicity

LD50: > 5,000 mg/kg (Rat)

Acute Inhalation Toxicity

LC50: > 2.2 mg/l, 1 hrs (Rat)

Acute dermal toxicity

LD50: > 5,000 mg/kg (rabbit)

Skin Irritation

rabbit, Non-irritating

Eye Irritation

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Article Number: 8710

rabbit, Non-irritating

Sensitization

dermal: non-sensitizer (Guinea pig, Magnusson/Kligmann (Maximization Test))

Repeated Dose Toxicity

90 Days, inhalation: NOAEL: < 0.001 mg/l, (Rat)

Mutagenicity

Genetic Toxicity in Vitro:

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

Genetic Toxicity in Vivo:

Cytogenetic assay: negative (Rat)

Carcinogenicity

Rat, Male/Female, oral, 2 Years, daily

negative

Toxicity Data for Calcium Oxide

Skin Irritation

rabbit, OECD Test Guideline 404, No skin irritation

Human, Corrosive

Eye Irritation

rabbit, Severely irritating

Sensitization

dermal: non-sensitizer (Human)

Mutagenicity

Genetic Toxicity in Vitro:

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

Yeast - gene mutation assay: negative (Saccharomyces species, Metabolic Activation: with/without)

Toxicity to Reproduction/Fertility

One generation study, oral, (rat) NOAEL (parental): 680 mg/kg,

No effects on Reproductive parameters observed at doses tested.

Developmental Toxicity/Teratogenicity

rat, oral, NOAEL (teratogenicity): 680 mg/kg, NOAEL (maternal): 680 mg/kg,

No Teratogenic effects observed at doses tested. No fetotoxicity observed at doses tested.

Toxicity Data for Aluminum Oxide

Acute Oral Toxicity

LD50: > 5,000 mg/kg (Rat)

Skin Irritation

rabbit, OECD Test Guideline 404, Non-irritating

Eye Irritation

rabbit, OECD Test Guideline 405, Non-irritating

Mutagenicity

Genetic Toxicity in Vitro:

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

Toxicity Data for Antioxidant

Material Name: Inter-Liner Black Hybrid Coating C
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Article Number: 8710

Acute Oral Toxicity

LD50: > 2,000 mg/kg (Rat)

Acute dermal toxicity

LD50: > 2,000 mg/kg (Rat)

Skin Irritation

rabbit, Non-irritating

Eye Irritation

rabbit, Non-irritating

Sensitization

dermal: non-sensitizer (Guinea pig, Maximization Test)

Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative

Toxicity to Reproduction/Fertility

(mouse) NOAEL (F1): 500 mg/kg,

No effects on Reproductive parameters observed at doses tested.

Toxicity Data for Dibutyltin Diacetate**Acute Oral Toxicity**

LD50: 32 mg/kg (Rat)

Acute dermal toxicity

LD50: 2,318 mg/kg (rabbit)

Skin Irritation

rabbit, Draize, Exposure Time: 30 min, Severely irritating

Mutagenicity

Genetic Toxicity in Vitro:

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

Positive and negative results were seen in various in vitro studies.

Chromosome aberration test: positive

Genetic Toxicity in Vivo:

Drosophila SLRL test: negative (Drosophila melanogaster, Male, oral)

Carcinogenicity

Rat, Male/Female, oral, 78 weeks, daily

No carcinogenic effects observed at the doses tested.

mouse, Male/Female, oral, 78 weeks, daily

Toxicity Data for UV Stabilizer**Acute Oral Toxicity**

LD50: 2,615 - 4,247 mg/kg (Rat)

Skin Irritation

rabbit, Moderately irritating

Eye Irritation

rabbit, Slightly irritating

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Sensitization

Maximisation Test (GPMT): sensitizer (Guinea pig)

Mutagenicity

Genetic Toxicity in Vitro:

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

Toxicity Data for Carbon Black**Acute Oral Toxicity**

LD50: > 5,000 mg/kg (Rat)

Acute dermal toxicity

LD50: > 3,000 mg/kg (rabbit)

Skin Irritation

rabbit, Non-irritating

Eye Irritation

rabbit, Non-irritating

Carcinogenicity

Several inhalation studies involving carbon black in female rats have shown increases in benign and malignant lung tumors. Although a large body of data on possible mechanisms of carcinogenicity in rats was considered by the IARC Working Group, it was not possible to state with confidence that the mechanisms of carcinogenicity in rats correlate to exposure in humans. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions.

12. Ecological Information**Ecological Data for Aromatic Amine****Biodegradation**

aerobic, 0 %, Exposure time: 28 Days

Chemical Oxygen Demand (COD)

2,370 mg/g

Acute and Prolonged Toxicity to Fish

LC50: approximately 194 mg/l (Golden orfe (Leuciscus idus), 48 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: approximately 0.5 mg/l (Water flea (Daphnia magna), 48 hrs)

Toxicity to Microorganisms

EC10: 170 mg/l, (Pseudomonas putida, 24 hrs)

Ecological Data for Aliphatic Amine**Biodegradation**

Aerobic, 8 %, Exposure time: 28 Days

Bioaccumulation

Not expected to bio-accumulate.

Acute and Prolonged Toxicity to Fish

LC50: 110 mg/l (Golden orfe (Leuciscus idus), 96 hrs)

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Acute Toxicity to Aquatic Invertebrates

EC50: 1 - 50 mg/l (Water flea (Daphnia magna), 48 hrs)

Toxicity to Aquatic Plants

EC50: 37 mg/l, End Point: biomass (Green algae (Scenedesmus subspicatus), 72 hrs)

Toxicity to Microorganisms

EC10: 1,120 mg/l, (Pseudomonas putida, 18 hrs)

Ecological Data for Aliphatic Glycol

Biodegradation

79 %,

Chemical Oxygen Demand (COD)

2,430 mg/g

Bioaccumulation

Does not bioaccumulate.

Acute and Prolonged Toxicity to Fish

LC50: > 100 mg/l (96 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: > 100 mg/l (Water flea (Daphnia magna), 478 hrs)

Toxicity to Aquatic Plants

EC50: > 95 mg/l, (other: algae, 72 hrs)

Ecological Data for Aliphatic Glycols

Biodegradation

approximately 2.4 BCF

Ecological Data for Amorphous Silica

Biodegradation

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulation

Not expected to bio-accumulate.

Acute and Prolonged Toxicity to Fish

LC50: 5,000 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)

Calculated value

Acute Toxicity to Aquatic Invertebrates

EC0: 10,000 mg/l (Water flea (Daphnia magna), 24 hrs)

EC50: 7,600 mg/l (Ceriodaphnia sp, 48 hrs)

Calculated value

Toxicity to Aquatic Plants

EC50: 440 mg/l, End Point: growth (Green algae (Selenastrum capricornutum), 72 hrs)

Toxicity to Microorganisms

EC50: 8,700 mg/l, (Photobacterium phosphoreum, 15 min)

Ecological Data for Calcium Oxide

Acute and Prolonged Toxicity to Fish

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LC50: 1,070 mg/l (Common Carp (Cyprinus carpio), 96 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: 159.6 mg/l (24 hrs)

Additional Ecotoxicological Remarks

Harmful ecological effects due to the pH shift are expected.

Ecological Data for Aluminum Oxide

Acute and Prolonged Toxicity to Fish

LC50: > 100 mg/l (Other marine species, 96 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: > 100 mg/l (Water flea (Daphnia magna), 48 hrs)

Toxicity to Aquatic Plants

EC50: > 100 mg/l, End Point: growth (Green algae (Selenastrum capricornutum), 72 hrs)

Ecological Data for Potassium oxide

Biodegradation

The methods for determining the biological degradability are not applicable to inorganic substances.

Acute and Prolonged Toxicity to Fish

LC50: 917.6 mg/l (Other fish, 96 hrs)

Additional Ecotoxicological Remarks

Harmful ecological effects due to the pH shift are expected. No data available for this component.

Ecological Data for Antioxidant

Biodegradation

2 - 4 %, Exposure time: 28 Days

Under test conditions no biodegradation observed.

Chemical Oxygen Demand (COD)

2.42 mg/g

Acute and Prolonged Toxicity to Fish

LC50: > 74 ppm (Zebra fish (Brachydanio rerio), 96 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: 4.3 ppm (Water flea (Daphnia magna), 24 hrs)

Toxicity to Aquatic Plants

EC50: > 3 mg/l, (Green algae (Scenedesmus subspicatus))

Toxicity to Microorganisms

IC50: > 100 ppm, (Wastewater bacteria)

Ecological Data for Dibutyltin Diacetate

Biodegradation

Not readily biodegradable.

Acute and Prolonged Toxicity to Fish

LC50: > 11 mg/l (48 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: 1.3 mg/l (Water flea (Daphnia magna))

Ecological Data for UV Stabilizer

Material Name: Inter-Liner Black Hybrid Coating C
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Article Number: 8710

Biodegradation

Aerobic, 38 %, Exposure time: 28 d
Under test conditions no biodegradation observed.

Acute and Prolonged Toxicity to Fish

LC50: 0.97 mg/l (Bluegill (*Lepomis macrochirus*), 96 h)
LC50: 7.9 mg/l (Rainbow trout (*Salmo gairdneri*), 96 h)

Acute Toxicity to Aquatic Invertebrates

EC50: 20 mg/l (Water flea (*Daphnia magna*), 24 h)

Toxicity to Microorganisms

> 100 mg/l, (Activated sludge microorganisms, 3 h)

Ecological Data for Carbon Black**Acute and Prolonged Toxicity to Fish**

NOEC: 1,000 mg/l (Zebra fish (*Brachydanio rerio*), 96 hrs)

Acute Toxicity to Aquatic Invertebrates

EC50: > 5,600 mg/l (Water flea (*Daphnia magna*), 24 hrs)

Toxicity to Microorganisms

EC0: 100 - 800 mg/l, (Activated sludge microorganisms, 3 hrs)

13. Disposal considerations**Waste Disposal Method**

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

Empty Container Precautions

Recondition or dispose of empty container in accordance with governmental regulations. Do not heat or cut container with electric or gas torch. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous.

14. Transportation information**Land transport (DOT)**

Non-Regulated

Sea transport (IMDG)

Non-Regulated

Air transport (ICAO/IATA)

Non-Regulated

15. Regulatory Information**United States Federal Regulations**

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OSHA Hazcom Standard Rating: Hazardous

|| US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components

None

Marine Pollutant Components:

Dibutyltin Diacetate Severe marine pollutant.
Dibutyltin Diacetate Severe marine pollutant.

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

Aluminum Oxide

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

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

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 MSDS 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:

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Polyester Polyol	CAS# is a trade secret
10 - 20%	Aromatic Amine	CAS# is a trade secret
5 - 10%	Calcium Silicate	13983-17-0
>=1%	Polyether Polyol	9082-00-2
1 - 5%	Aliphatic Amine	CAS# is a trade secret
1 - 5%	Aliphatic Glycol	CAS# is a trade secret
1 - 5%	Amorphous Silica	7631-86-9
1 - 5%	Potassium oxide	12136-45-7
1 - 5%	Calcium Oxide	1305-78-8
1 - 5%	Aluminum Oxide	1344-28-1
1 - 5%	Dibutyltin Diacetate	1067-33-0
1 - 5%	Carbon Black	1333-86-4

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

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
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1 - 5%	Aliphatic Amine	CAS# is a trade secret
1 - 5%	Potassium oxide	12136-45-7
1 - 5%	Aluminum Oxide	1344-28-1

California Prop. 65:

Warning! This product contains chemical(s) known to the State of California to be Carcinogenic.

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
1 - 5%	Carbon Black	1333-86-4

16. Other Information

NFPA 704M Rating

Health	2
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

HMIS Rating

Health	2*
Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* = Chronic Health Hazard

The method of hazard communication for International Epoxies & Sealers is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by International Epoxies & Sealers as a customer service.

Contact Person:	Product Safety Department
Telephone:	(800)451-7206
MSDS Number:	8710
Version Date:	07/15/09
Report Version:	3.0

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of IES. The information in this MSDS relates only to the specific material designated herein. IES assumes no legal responsibility for use of or reliance upon the information in this MSDS.

Changes since the last version will be highlighted in the margin. This version replaces all previous versions.

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