

Freedom Tuff 2270 Isocyanate

MATERIAL SAFETY DATA

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SECTION I - NAME

Product Name: Freedom Tuff 2270 Isocyanate

Manufactured By: Freedom Chemical Corporation
12026 Centralia Rd., Suite C
Hawaiian Gardens, CA 90716
562-343-9697

FOR CHEMICAL Spill, leak, fire, exposure, or EMERGENCY accident, call 24 hours CHEMTREC: 800.424.9300

TSCA Inventory: All components of this product are included, or are exempt from inclusion, in the EPA Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Canadian DSL: All components of this product are included, or are exempt from inclusion, in the Canadian Domestic Substance List (DSL).

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Components	CAS#	Weight %
Methylene Bis(phenylisocyanate) (MDI) (Containing 4,4'Methylene bisphenyl Isocyanate CAS #101-68-8.)	26447-40-5	15 - 40%

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview:

Primary Routes of Entry:	Route	Entry Risk
	Inhalation	Possible
	Skin Contact	Possible
	Eye Contact	Possible

Potential Health Effects:

Inhalation

Acute Inhalation - Diisocyanate or polyisocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate the mucus membranes in the respiratory tract with symptoms of runny nose, sore throat, chest discomfort, shortness of breath and reduced lung function. Persons with preexisting, nonspecific bronchial hyper reactivity can respond to concentrations below 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. Chemical or hypersensitivity pneumonitis, with flu like symptoms, 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 repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates or polyisocyanates that

may cause them to react to a later exposure to diisocyanates or polyisocyanates well below the exposure limits or guidelines. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage that may be permanent.

Ingestion

Acute Ingestion - May cause irritation. Symptoms may include abdominal pain, nausea, vomiting and diarrhea.

Skin

Acute Skin - Causes irritation with symptoms of reddening, itching and swelling. Persons previously sensitized can show allergic reactions.

Chronic Skin - Prolonged exposure can cause skin sensitization.

Eye Contact

Acute Eye - Causes irritation. Symptoms include reddening, tearing, stinging and swelling. May cause temporary corneal injury. Vapor may cause irritation.

Chronic Eye - Prolonged vapor may cause conjunctivitis.

Medical Conditions Generally Aggravated by Exposure: Skin and eye sensitization. Depending on individual skin sensitivity, chronic or prolonged exposure may result in irritation, blistering, burning and peeling of skin layers.

Carcinogenicity:

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

SECTION IV - FIRST AID MEASURES

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, seek medical attention.

Skin Contact: Remove from skin immediately. Rinse with clean water for 20-30 minutes. Use soapy water if needed. If redness, itching, or a burning sensation develops, seek medical attention.

Ingestion: Do NOT induce vomiting! Dilute with water and seek medical attention immediately.

Inhalation: Move victim to fresh air immediately. Give oxygen and seek medical attention. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

SECTION V - FIRE FIGHTING MEASURES

Extinguishing Media: dry chemical, carbon dioxide, foam, water spray for large fires.

Special Fire Fighting Procedures: Firefighters should wear NFPA compliant firefighting protective equipment, including self-contained breathing apparatus. Avoid contact with product. Exposure to heated diisocyanate products can be extremely dangerous.

Unusual Fire and Explosion Hazards: Closed containers may rupture due to build-up of pressure when exposed to extreme heat or when contents are contaminated with water. Use cold water spray to cool fire-exposed containers to minimize risk of rupture.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Avoid contact with material. Persons not wearing appropriate protective equipment should be excluded until spill is cleaned up. Stop spill at source, pump liquid to salvage container. Remaining liquid may be taken up on clay, diatomaceous earth, or other absorbent. Treat with Decontamination Solutions: Nonionic surfactant Union Carbide's Tergitol TMN-10 (20%) and water (80%); concentrated ammonia (3-8%), detergent (2%) and water (90-95%).

SECTION VII – HANDLING and STORAGE

Handling & Storage Precautions: Prevent all skin and eye contact. Avoid breathing vapors. Re-seal partially used containers. Wash with soap and water before eating or drinking. Protect from moisture contamination. Exothermic generation of carbon dioxide may cause dangerous pressure. Keep away from all ignitable sources as well as extreme heat. Do not expose to excessive moisture.

SECTION VIII – EXPOSURE CONTROL/PERSONAL PROTECTION

Ventilation: Adequate ventilation required. Local exhaust may be required in some areas. Special exhausting generally not required. Mechanical exhaust usually adequate.

Respiratory Protection: Respiratory masks should be worn at all times when adequate ventilation does not exist. A NIOSH/MSHA respirator is acceptable. Observe OSHA regulations for respirator use. (29 CFR 1910.134)

Eye Protection: Chemical tight goggles; full face shield if splashing is possible.

Skin Protection: Coveralls and impervious foot covering is recommended.

Other Protective Clothing or Equipment: Use impervious gloves, neoprene or rubber.

Work/ Hygienic Practices: Good air flow in working area. Eyewash station and safety shower should be available. Gloves and respiratory equipment should be worn at all times.

SECTION IX – PHYSICAL and CHEMICAL PROPERTIES

Appearance: Clear, light yellow

Odor: Negligible

Physical State: Liquid

Ph: Not established

Boiling Point: Not applicable, decomposition

Freezing Point: Approximately - 60° F

Vapor Pressure (mmHg): <1 x 10⁽⁻⁵⁾ mm Hg @ 25C

Specific Gravity (Water=1): 1.161 @ 77° Fahrenheit

Flash Point: Approximately 360° F.

Solubility in Water: Insoluble; reacts slowly with water to liberate CO₂ gas.

SECTION X – STABILITY and REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid (Stability): Avoid excessive heats. Protect from atmospheric moisture. Replace outage with inert dry nitrogen.

Incompatibility (Materials to Avoid): Avoid water, amines, strong bases, alcohols, copper alloys.

Hazardous Decomposition or Byproducts: Isocyanate vapors or mist, carbon dioxide, carbon monoxide, nitrogen oxides.

Hazardous Polymerization: Will not occur under normal circumstances.

SECTION XI - TOXICOLOGICAL INFORMATION

Toxicological Information for homopolymer of Methylenediphenyl Diisocyanate:

Acute Oral LD50: Estimated to be greater than 10,000 MG/KG (rats)

Acute Dermal LD50: > 2000 MG/KG (rabbits)

Skin Irritation

Rabbit, Draize, Slightly irritating

Eye Irritation

Rabbit, Draize, Slightly irritating

Sensitization

Dermal: sensitizer (guinea pig, Maximization 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)

90days, inhalation: NOAEL: 3.3-3.4 mg/m³, (rat)

Irritation to lungs and nasal cavity.

Mutagenicity

AMES: negative (salmonella typhimurium, Metabolic Activation: with/without)

SECTION XII - ECOLOGICAL INFORMATION

Ecological Data for Homopolymer of Methylenediphenyl 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)

SECTION XIII - DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Dispose of according to current local, state, and federal regulations.

Empty Container Precautions

Empty containers contain residue; observe all precautions for product.

SECTION XIV - TRANSPORT INFORMATION

U.S. Department of Transportation

Proper Shipping Name: Methylene Bis(phenylisocyanate) (MDI)

Hazard Class: 9

UN/NA Number: UN 2206

Packaging Group: III

Hazard Label(s): Class 9

RSPA/DOT Regulated Components:

This product is not regulated when packaged in containers holding less than 5000 lbs. of MDI.

Sea Transport (IMDG)

Non-regulated

Air Transport (ICAO/IATA)

Non-regulated

SECTION XV – REGULATORY INFORMATION

U.S. Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

US Toxic Substances Control Act: All materials are listed on the TSCA inventory.

US EPA CERCLA Hazardous Substances (40 CFR 302):

Components: Methylene bisphenyl Isocyanate (MDI) CAS # 000101-68-8

SARA Section 311/312 Hazard Categories:

Acute health hazard, chronic health hazard, reactivity hazard.

US EPA Emergency Planning and Right-to-Know Act (EPCRA) ASARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

Components: None

US EPA Emergency Planning and Right-to-Know Act (EPCRA) ASARA 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. (40CFR 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:

Weight%	Components	CAS number
20-40%	Methylene bisphenyl Isocyanate	000101-68-8

New Jersey environmental Hazardous Substances List and/or New Jersey right-to-know special hazardous substances list:

Weight%	Components	CAS number
<=0.5%	Methylene bisphenyl Isocyanate	000101-68-8

California Proposition 65:

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.

SECTION XVI - OTHER INFORMATION**NFPA 704M Rating****Health = 2****Fire = 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**

Disclaimer: This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Name. Name assumes no legal responsibility for use of or reliance upon the information in this MSDS.