

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: ANCHOR-CRETE PART A RESIN

HMIS CODES: H F R P
 2 1 1 C

SECTION I: MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: INDUSTRIAL PROTECTIVE COATINGS, INC.
ADDRESS: 1855 ENTERPRISE DRIVE, DEPERE, WI 54115
EMERGENCY PHONE: CHEMTREC 1-800-424-9300
INFORMATION PHONE: 1-800-236-1164
DATE REVISED: 06/18/06

SECTION II: CHEMICAL PRODUCT IDENTIFICATION

PRODUCT NAME: ANCHOR-CRETE PART A RESIN
CHEMICAL FAMILY: Polyalcohol Emulsion

SECTION III: HAZARDOUS INGREDIENTS/SARA INFORMATION

INGREDIENTS	CAS NUMBER	OSHA	ACGIH
VEGETABLE OIL		5.00 mg/m ³	NE
BUTYL BENZYL PHTHALATE	85-68-7	NE	NE
GLYCERIN	56-81	5.00 mg/m ³	10.00 mg/m ³

SECTION IV: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! Color: Milky (White)
Form: Thixotropic Liquid; Cloudy
Odor: Weak odor; May cause respiratory tract irritation; May cause allergic respiratory reaction; May be harmful if inhaled; May cause skin irritation; May cause allergic skin reaction; May be harmful if absorbed through skin; Causes eye irritation; May be harmful if swallowed; Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition; Use cold water spray to cool fire-exposed containers to minimize the risk of rupture; Toxic gases/fumes are given off during burning or thermal decomposition; Closed container may explode under extreme heat.

POTENTIAL HEALTH EFFECTS:

ROUTE (S) OF ENTRY: Inhalation; Skin Contact; Eye Contact; Ingestion

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION: Vapors and mists of this product can be irritating to the mucous membranes and respiratory tract. Symptoms may include sore throat, coughing, shortness of breath, headache and dizziness. The vegetable oil component of this product may cause allergic asthmatic reaction in persons previously exposed. At elevated temperatures the generated vapor or mist of this product may cause irritation and dehydration of the mucous membranes of the respiratory tract. The butyl benzyl phthalate component may cause irritation and central nervous system depression if sufficient quantities are absorbed.

Revision Date: July 18, 2006

CHRONIC INHALATION: None reported for this product as a whole. Expected to be similar to effects listed for acute inhalation. However, chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms can include: loss of memory, loss of intellectual ability and loss of coordination.

ACUTE SKIN CONTACT: Repeated skin contact with this product may result in dry, defatted and cracked skin causing increased susceptibility to infection. In addition, irritation (i.e. redness and swelling) that may develop into dermatitis may occur from skin contact. Allergic reactions may occur in some individuals.

CHRONIC SKIN CONTACT: None reported for this product as a whole. It is expected that repeated or prolonged contact may cause dermatitis.

ACUTE EYE CONTACT: Liquid, aerosols and concentrated vapors of this product can be irritating to the eyes causing a stinging sensation, tearing, reddening and possibly swelling of the eyes. If left untreated, corneal injury can occur and injury is slow to heal. Damage is usually reversible.

CHRONIC EYE CONTACT: None reported for product as a whole. Based on component information prolonged vapor contact may cause conjunctivitis.

ACUTE INGESTION: The product can cause gastrointestinal distress and can result in irritation in the digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. May also cause central nervous system depression with headache, dizziness and drowsiness. Aspiration of the vegetable oil may result in lipid pneumonia.

CHRONIC INGESTION: None reported.

CARCINOGENICITY: The components of this product are not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: With repeated or prolonged contact this product may aggravate an existing dermatitis or other allergic reactions, as well as existing respiratory conditions.

SECTION V: FIRST AID MEASURES

FIRST AID FOR EYES: Flush immediately with clean, lukewarm water (low pressure) for at least 15 minutes, while using fingers to hold eyelids open. Obtain medical attention if irritation develops or persists.

FIRST AID FOR SKIN: Immediately remove contaminated clothing and shoes. Wash affected areas thoroughly with soap and lukewarm water. Wash contaminated clothing and clean shoes thoroughly before reuse. If irritation develops or persists, contact a physician.

FIRST AID FOR INHALATION: If breathing is difficult immediately remove from area to fresh air. If individual has stopped breathing administer artificial respiration. If breathing is still difficult administer oxygen. Obtain medical attention.

FIRST AID FOR INGESTION: Do not induce vomiting. Give 1 to 2 cups of water or milk to drink. Do not give anything by mouth to an unconscious or convulsing person. Consult a physician. Should vomiting occur keep head lower than hip level to prevent aspiration of fluid into the lungs.

SECTION VI: FIRE FIGHTING MEASURES

FLASH POINT: Greater than 212° F (100° C)

FLAMMABLE LIMITS:

UPPER EXPLOSIVE LIMIT (UEL) (%): 1.5% @ 200° C PMA

LOWER EXPLOSIVE LIMIT (LEL) (%): 7.0% @ 200° C PMA

AUTO-IGNITION TEMPERATURE: Approx. 707° F (375° C) – similar product

EXTINGUISHING MEDIA: Carbon Dioxide; Dry Chemical; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire irritating, toxic gases and smoke are present from decomposition and combustion. Use water to cool fire-exposed containers to prevent rupture. Solid residue will support combustion after the water has evaporated.

UNUSUAL FIRE/EXPLOSION HAZARDS: Organic solvent vapors (PMA)/air mixtures are explosive above flash point.

SECTION VII: ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Evacuate all non-essential personnel. Ventilate the area. Equip cleanup crew with appropriate protective equipment. Dike or impound spilled material and control further spillage if feasible. Do not allow spilled material to get into the sewer systems, the ground water supplies or soil. Notify appropriate authorities if necessary. Cover spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Collect material in open containers. Remove containers to safe place and cover. Flush spill area with water.

SECTION VIII: HANDLING AND STORAGE

STORAGE TEMPERATURE (MIN/MAX): 32° F (0° C) / 120° F (50° C) – contains water keep from freezing.

SHELF LIFE: Not established.

SPECIAL SENSITIVITY: Material contains water and can freeze at temperatures at or below 32° F (0° C). Do not store material at or below 32° F (0° C)

HANDLING/STORAGE PRECAUTIONS: Protect from freezing. Containers should be tightly sealed to prevent contamination with foreign materials. Store in a cool and well ventilated area in original or similar container. Avoid product temperatures above 120° F (50° C) and below 32° F (0° C). Do not get material in the eyes or on the skin. Avoid breathing vapors or mist if generated. PMA may form peroxides during prolonged storage. Avoid contact with light and check peroxide content before use. Educate and train employees in the safe handling of this product.

SECTION IX: PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS: Liquid chemical goggles or faceshield. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face-shield.

SKIN PROTECTION REQUIREMENTS: Permeation resistant gloves (butyl rubber, nitrile rubber). Cover as much of the exposed skin area as possible with appropriate clothing (long sleeve shirts, trousers). If skin creams are used, keep the area protected only by the cream to a minimum.

VENTILATION/RESPIRATORY REQUIREMENT: Exhaust ventilation sufficient to keep the airborne concentrations of the hazardous constituents below applicable exposure limits must be utilized. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent the buildup of explosive atmospheres and to prevent off gases from entering the workplace. In addition, a respirator that is recommended or approved for use in organic vapor containing environments (air purifying or fresh air supplied) may be necessary. In spray applications an organic vapor/particulate respirator or air supplied unit is necessary. Consider type of application and environmental concentrations. Take into account other materials being used concurrently. Observe OSHA regulations for respirator use (29 CFR 1910.134).

ADDITIONAL PROTECTIVE MEASURES: Safety showers and eyewash stations should be easily accessible to the work area. Educate and train employees in safe use of product. Follow all label instructions.

SECTION X: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Thixotropic Liquid
APPEARANCE: Cloudy
COLOR: Milky (White)
ODOR: Weak Odor
pH: Approximately 7.2
BOILING POINT: Approximately 208.4° F (98° C)
MELTING/FREEZING POINT: Less than or equal to 32° F (0° C) (water)

VISCOSITY:	Approximately 210 mPa.s at 68° F (20° C)
SOLUBILITY IN WATER:	Miscible
SPECIFIC GRAVITY:	Approximately 1.00 g/cm ³ at 68° F (20° C)
BULK DENSITY:	Not noted
VAPOR PRESSURE:	Approximately 33 mbar @ 68° F (20° C); Approximately 101 mbar @ 120° F (50° C); Approximately 132 mbar @ 131° F (55° C)
VAPOR DENSITY:	Not Established (Air = 1)

SECTION XI: STABILITY AND REACTIVITY

STABILITY:	This is a stable material.
HAZARDOUS POLYMERIZATION:	Will not occur.
INCOMPATIBILITIES:	Strong oxidizing agents, reducing agents, acids, alkalis.
INSTABILITY CONDITIONS:	Temperatures below 32° F (0° C) – Product will freeze.
DECOMPOSITION PRODUCTS:	By fire: oxides of carbon, oxides of nitrogen, and other unknown aliphatic fragments.

SECTION XII: TOXICOLOGICAL INFORMATION

TOXICITY DATA FOR ACUTE TOXICITY:	Vegetable Oil
EYE EFFECTS:	500 mg – Rabbit – Mild
SKIN EFFECTS:	100 mg / 24 hours – Rabbit – Severe

Fate and Transport: Bioconcentration: 480 ug/L 14 days BCF (Residue) Common, mirror, colored, Carp (Cyprinus carpio) 0.86 ug/L

TOXICITY DATA FOR ACUTE TOXICITY:	Butyl Benzyl Phthalate
ORAL LD50:	2330 mg/kg (Rat)*
DERMAL LD50:	6700 mg/kg (Rat)*
OTHER ACUTE EFFECTS:	Animal studies report that central and peripheral neuropathies may occur. Mammals exposed to 13,100 mg/m ³ suffered somnolence, withdrawal, weight loss and death of 50% of the animals tested. *
CHRONIC TOXICITY:	Chronically fed rats exhibited leukemia and lymphomas, including Hodgkin's disease. Male rats chronically fed exhibited effects on the reproductive organs. *

* MDL Information Systems, Inc. MSDS

SECTION XIII: ECOLOGICAL INFORMATION

ECOLOGY DATA FOR:	Butyl Benzyl Phthalate
FISH TOXICITY:	LC50: 510 ug/L for 96 hours (Mortality), Shiner perch (Cymatogaster aggregata)*
INVERTEBRATE TOXICITY:	EC50: 6900 ug/L for 48 hours (Shell Deposition), American or Virginia Oyster (Crassostrea virginica)*
PLANT TOXICITY:	EC50: 170 ug/L for 96 hours (Photosynthesis), Diatom (Skeletonema costatum)*

*MDL Information Systems, Inc. MSDS

SECTION XIV: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste material must be disposed of in accordance with federal, state and local environmental control regulations. Incineration is the preferred method.
EMPTY CONTAINER PRECAUTIONS: Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION XV: TRANSPORTATION INFORMATION

TECHNICAL SHIPPING NAME: Polyalcohol Emulsion containing Butyl Benzyl Phthalate
FREIGHT CLASS BULK: Chemicals, NOI
FREIGHT CLASS PACKAGE: Chemicals, NOI, NMFC 60000
PRODUCT LABEL: Product Label Established

DOT (DOMESTIC SURFACE)

PROPER SHIPPING NAME: Polyurethane Dispersion of Castor Oil
HAZARD CLASS OR DIVISION: Not D.O.T. Regulated

SECTION XVI: REGULATORY INFORMATION

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA STATUS: On TSCA Inventory
CERCLA REPORTABLE QUANTITY: Butyl Benzyl Phthalate: 100 lbs.
SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None
SECTION 311/312 HAZARD CATEGORIES: Immediate Health Hazard
SECTION 313 TOXIC CHEMICALS: None

RCRA STATUS: 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)

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.

COMPONENT NAME/CAS NUMBER	CONCENTRATION	STATE CODE
Vegetable Oil		
NJTSRN (31765300002) – 12213	38-48%	PA3, NJ4
Water	20-30%	PA3, NJ4
7732-18-5		
Butyl Benzyl Phthalate	12-20%	PA1, PA4, MA, NJ1, NJ2, CN1
85-68-7		
Glycerin	1-5%	PA1, MA, NJ4
56-81-5		
n-Methylpyrrolidinone	Aprx 0.086%	CA2
872-50-4		

CA2 = Warning! This chemical is known to the State of California to cause birth defects or other reproductive harm.

MA = Massachusetts Hazardous Substance List

NJ1 = New Jersey Hazardous Substance List

Revision Date: July 18, 2006

NJ2 = New Jersey Environmental Hazardous Substance List
NJ4 = New Jersey Other – included in 5 predominant ingredients > 1%
NJTSRN = New Jersey Trade Secret Registry Number
PA1 = Pennsylvania Hazardous Substance List
PA3 = Pennsylvania Non-hazardous present at 3% or greater.
PA4 = Pennsylvania Environmental Hazardous Substance List
CN1 = Canada WHMIS Ingredient Disclosure List over 1%.

SECTION XVII: DISCLAIMER

DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE ACCURATE. HOWEVER, I.P.C. MAKES NO WARRANTY EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS OBTAINED FROM THE USE THEREOF. I.P.C. ASSUMES NO RESPONSIBILITIES FOR INJURY FROM THE USE OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: ANCHOR-CRETE PART B HARDENER

HMIS CODES: H F R P
 2 1 1 C

SECTION I: MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: INDUSTRIAL PROTECTIVE COATINGS, INC.
ADDRESS: 1855 ENTERPRISE DRIVE, DEPERE, WI 54115
EMERGENCY PHONE: CHEMTREC 1-800-424-9300
INFORMATION PHONE: 1-800-236-1164
DATE REVISED: 06/18/06

SECTION II: CHEMICAL PRODUCT IDENTIFICATION

PRODUCT NAME: ANCHOR-CRETE PART B HARDENER
CHEMICAL FAMILY: Aromatic Isocyanate
CHEMICAL NAME: Isocyanic Acid, Polymethylenepolyphenylene Ester
SYNONYMS: Polymeric Diphenylmethane Diisocyanate (MDI)
CAS NUMBER: 9016-87-9

SECTION III: HAZARDOUS INGREDIENTS/SARA INFORMATION

INGREDIENTS	CAS NUMBER	OSHA	ACGIH	CONCENTRATION
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	.20 ppm Ceiling .20 mg/m ³ Ceiling	.005 ppm TWA .051 mg/m ³ TWA	Upper Bound 32%
Higher Oligomers of MDI	9016-87-9	NE	NE	36 – 46 %
Diphenylmethane Diisocyanate (MDI)	26447-40-5	NE	NE	24 – 34 %

SECTION IV: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING! Color: Dark Brown to Black

Form: Liquid

Odor: Slightly musty odor; May cause eye, skin, and respiratory tract irritation;

Harmful if inhaled; May cause allergic respiratory reaction; May cause allergic skin reaction; May cause lung damage; Toxic gases/fumes are given off during burning or thermal decomposition.

POTENTIAL HEALTH EFFECTS:

ROUTE (S) OF ENTRY: Skin Contact from liquid and aerosols (spray application). Inhalation: Although MDI is low in volatility an inhalation hazard can exist from MDI aerosols or vapors formed during heating, foaming, spraying or otherwise aerosolizing the material in an inadequately ventilated environment.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION: MDI vapors and mists at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyper-reactivity can respond to

Revision Date: July 18, 2006

concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

CHRONIC INHALATION: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

ACUTE SKIN CONTACT: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

CHRONIC SKIN CONTACT: Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases, skin sensitization. Individuals who have skin sensitization can develop these symptoms from contact with liquid or vapors. Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. This data reinforces the need to prevent direct skin contact with MDI. (See Toxicological Information, SENSITIZATION).

ACUTE EYE CONTACT: Liquid, aerosols and vapors are irritating and cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible. See First Aid Measures for treatment.

CHRONIC EYE CONTACT: None Found

ACUTE INGESTION: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

CHRONIC INGESTION: None Found

CARCINOGENICITY: Neither MDI nor polymeric MDI are listed by NTP, IARC or regulated by OSHA as carcinogens.

NTP: Not listed

IARC: Not listed

OSHA: Not listed

OTHER: See results of two year inhalation study in Toxicological Information, CARCINOGENICITY

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyper-reactivity), skin allergies, eczema.

SECTION V: FIRST AID MEASURES

FIRST AID FOR EYES: Flush with copious amount of water, preferably lukewarm water for at least 15 minutes, while using fingers to hold eyelids open. Refer individual to physician or ophthalmologist for immediate follow-up.

FIRST AID FOR SKIN: Immediately remove contaminated clothing and shoes. Wash affected areas thoroughly with soap and lukewarm water. Wash contaminated clothing and clean shoes thoroughly before reuse. For severe exposure, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists after the area is washed.

FIRST AID FOR INHALATION: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this occur.

FIRST AID FOR INGESTION: DO NOT INDUCE VOMITING. Wash mouth out with water. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult a physician.

NOTE TO PHYSICIAN: Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision.

Skin: This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn.

Ingestion: Treat symptomatically. MDI has a very low oral toxicity. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound.

Respiratory: This compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

SECTION VI: FIRE FIGHTING MEASURES

FLASH POINT: 428.0° F (220° C)

FLAMMABLE LIMITS:

UPPER EXPLOSIVE LIMIT (UEL) (%): NE

LOWER EXPLOSIVE LIMIT (LEL) (%): NE

AUTO-IGNITION TEMPERATURE: Greater than 752° F (400° C) – DIN 51794

EXTINGUISHING MEDIA: Carbon Dioxide; Dry Chemical; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. (See Reactivity and Stability Section). At temperatures greater than 400° F (204° C), polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

SECTION VII: ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Evacuate all non-essential personnel. Ventilate the area. Equip cleanup crew with full protective equipment, including respiratory equipment during clean up. (See Employee Protection Recommendations). Dike or impound spilled material and control further spillage if feasible. Do not allow spilled material to get into the sewer systems, the ground water supplies or soil.

Major Spill: Call CHEMTREC 800-424-9300. If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed, but not sealed, containers for disposal.

Minor Spill: Absorb isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well ventilated area (outside) and treat with neutralizing solution: mixture of water (80%) with non-ionic surfactant Tergitol TMN-10 (20%), or water (90%), concentrated ammonia (3-8%) and detergent (2%). Add about 10 parts of neutralizer per part of isocyanate, with mixing. Allow to stand uncovered for 48 hours to let CO₂ escape.

Clean Up: Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

SECTION VIII: HANDLING AND STORAGE

STORAGE TEMPERATURE (MIN/MAX): Not established – similar material 64° F (18° C) / 86° F (30° C)

SHELF LIFE: Not established – similar material 6 months.

SPECIAL SENSITIVITY: If container is exposed to high heat, 400° F (204° C) it can be pressurized and possibly rupture. MDI reacts slowly with water to form CO₂ gas. This gas can cause sealed containers to expand and possibly rupture.

HANDLING/STORAGE PRECAUTIONS: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with eyes and skin. Do not breathe aerosols or vapors. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic 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. Exposure to vapors of heated MDI can be dangerous. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard.

SECTION IX: PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS: Chemical goggles should be used in a splash environment. For additional protection, chemical goggles should be used in combination with a full face shield.

SKIN PROTECTION REQUIREMENTS: Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

VENTILATION REQUIREMENTS: Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (i.e. ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation.

RESPIRATOR REQUIREMENTS: Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected, the following conditions must be met:

- (1) (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or
- (1) (b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program, and
- (2) the airborne MDI concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/HEPA combination cartridge (OV/P100).

ADDITIONAL PROTECTIVE MEASURES: Safety showers and eyewash stations should be easily accessible to the work area. Educate and train employees in safe use of product. Follow all label instructions.

SECTION X: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	Liquid
COLOR	Dark Brown to Black
ODOR:	Slightly musty Odor
ODOR THRESHOLD:	NE
pH:	NE
BOILING POINT:	406° F (208° C) at 5 mm Hg for MDI
MELTING/FREEZING POINT:	Below 32° F (0° C) for MDI
VISCOSITY:	Approximately 90 mPa.s at 77° F (25° C)
SOLUBILITY IN WATER:	Not Soluble. Reacts slowly with water to liberate CO ₂ gas
SPECIFIC GRAVITY:	1.24 @ 77° F (25° C)
BULK DENSITY:	10.3 lbs/gal
% VOLATILE BY VOLUME:	Negligible
VAPOR PRESSURE:	Less than 0.00001 mm Hg @ 77° F (25° C) for MDI
Revision Date: July 18, 2006	

VAPOR DENSITY: 8.5 (MDI) (Air = 1)

SECTION XI: STABILITY AND REACTIVITY

STABILITY: This is a stable material.
 HAZARDOUS POLYMERIZATION: May occur; Contact with moisture, other materials which react with isocyanates, or temperatures above 400° F (204° C), may cause polymerization.
 INCOMPATIBILITIES: Water, amines, strong bases, alcohols. Will cause some corrosion to copper alloys and aluminum.
 INSTABILITY CONDITIONS: Contamination with water and high temperatures (above 400° F (204° C)).
 DECOMPOSITION PRODUCTS: By high heat and fire: carbon monoxide, oxides of nitrogen, traces of HCN, MDI vapors or aerosols.

SECTION XII: TOXICOLOGICAL INFORMATION

TOXICITY DATA FOR ACUTE TOXICITY: Diphenylmethane Diisocyanate (Monomeric and Polymeric)
 ORAL LD50: > 10000 mg/kg (Rat)
 DERMAL LD50: > 6200 mg/kg (Rabbit)
 INHALATION LC50: The 4-hour LC50 for polymeric MDI in rats ranges from 370 to 490 mg/m³. The 4-hour LC50 for monomeric MDI in rats was estimated to be between 172 and 187 mg/m³.
 EYE EFFECTS: Slight to moderate irritation (Rabbit).
 SKIN EFFECTS: Slight to moderate irritation (Rabbit).
 SENSITIZATION: MDI has been shown to produce dermal sensitization in laboratory animals. Evidence of respiratory sensitization has also been observed in guinea pigs. In addition, there is some evidence suggestive of cross-sensitization between different types of diisocyanates.
 CHRONIC TOXICITY: In a combined chronic inhalation toxicity/oncogenicity study, rats were exposed to an aerosol of polymeric MDI for 6 hours per day, 5 days per week for one or two years. The exposure concentrations were 0, 0.2, 1.0 and 6.0 mg/m³. Microscopic examination of tissues revealed the effects of irritation to the nasal cavity and lungs in animals exposed to 1.0 and 6.0 mg/m³. The No Observable Effect Level (NOEL) was 0.2 mg/m³.
 CARCINOGENICITY: In the study described above (See CHRONIC TOXICITY), the occurrence of pulmonary adenomas and a single pulmonary adenocarcinoma was considered to be related to MDI. These tumors were observed only in rats exposed to the high concentration of 6.0 mg/m³.
 MUTAGENICITY: Positive (Salmonella microsome test with metabolic activation; cell transformation assay) as well as negative (mouse lymphoma specific locus mutation test with or without metabolic activation) results have been observed "in vitro". The use of certain solvents which rapidly hydrolyze MDI is suspected of producing mutagenicity in some of these studies. MDI was negative in an "in vivo" (mouse micronucleus) assay.
 DEVELOPMENTAL TOXICITY: Rats were exposed to polymeric MDI at air concentrations of 0, 1, 4, and 12 mg/m³ during days 6-15 of gestation. Maternal Toxicity (including mortality) was observed at the highest concentration of 12 mg/m³ accompanied by embryo and fetal toxicity. However, no teratogenic effects were observed even at this lethal concentration.

SECTION XIII: ECOLOGICAL INFORMATION

ECOLOGY DATA FOR: Diphenylmethane Diisocyanate (Monomeric and Polymeric)
 AQUATIC TOXICITY: LC50 – 24 hr. (static): Greater than 500 mg/liter for Daphnia magna, Limnea Stagnalis, and Zebra fish (Brachydanio rerio) for both polymeric and monomeric MDI.

FISH TOXICITY: LC0 = > 1000mg/l; Test species: Brachydanio rerio;
 Duration of test: 96 hr.
 INHIBITION BACTERIA: EC50 = > 100 mg/l; Tested on activated sludge
 microorganism. Duration of test: 3 hr.

SECTION XIV: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste material must be disposed of in accordance with federal, state and local environmental control regulations. Incineration is the preferred method.
 EMPTY CONTAINER PRECAUTIONS: Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH. (See Fire Fighting Measures or Stability and Reactivity). Gases may be highly toxic.

SECTION XV: TRANSPORTATION INFORMATION

TECHNICAL SHIPPING NAME: Methylene diphenyl diisocyanate
 FREIGHT CLASS BULK: Methylene diphenyl diisocyanate
 FREIGHT CLASS PACKAGE: Chemicals, NOI (Isocyanate), NMFC 60000
 PRODUCT LABEL: Product Label Established

DOT (DOMESTIC SURFACE)

PROPER SHIPPING NAME: Polyisocyanate of MDI
 HAZARD CLASS OR DIVISION: Not D.O.T. Regulated

SECTION XVI: REGULATORY INFORMATION

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: On TSCA Inventory
 CERCLA REPORTABLE QUANTITY: 5000 lbs. for 4,4'-Diphenylmethane Diisocyanate, CAS#101-68-8.

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None
 SECTION 311/312 HAZARD CATEGORIES: Immediate Health Hazard, Delayed Health Hazard
 SECTION 313 TOXIC CHEMICALS: Polymeric Diphenylmethane Diisocyanate,
 CAS# 9016-87-9, 100%;
 Contained in this polymeric MDI product is 4,4'-Diphenylmethane Diisocyanate,
 CAS#101-68-8, Upper Bound 32%.

RCRA STATUS: MDI is not listed as a hazardous waste. To the best of our knowledge, MDI does not meet the criteria of a hazardous waste if discarded in its purchased form. However, under RCRA, it is the responsibility of the user of products to determine, at the time of disposal, whether a product meets any of the criteria for a hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting material hazardous, under the criteria of ignitability, corrosivity, reactivity and toxicity characteristics under the new Toxicity Characteristic Leaching Procedure (TCLP) 40 Code of Federal Regulations 261.20-24.

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.

COMPONENT NAME/CAS NUMBER	CONCENTRATION	STATE CODE
4,4'-Diphenylmethane Diisocyanate (MDI) 101-68-8	Upper Bound 32%	PA1, PA4, FL, IL, MA,

Higher Oligomers of MDI 9016-87-9	36-46%	RI, NJ1, NJ4, CN2 PA3, NJ4
Diphenylmethane Diisocyanate (MDI) 26447-40-5	24-34%	PA3, NJ4
Phenyl Isocyanate 103-71-9	Trace –ppm	MA

FL =	Florida Substance List
IL =	Illinois Toxic Substance List
MA =	Massachusetts Hazardous Substance List
NJ1 =	New Jersey Hazardous Substance List
NJ4 =	New Jersey Other – included in 5 predominant ingredients > 1%
PA1 =	Pennsylvania Hazardous Substance List
PA3 =	Pennsylvania Non-hazardous present at 3% or greater.
PA4 =	Pennsylvania Environmental Hazardous Substance List
RI =	Rhode Island List of Designated Substances
CN2 =	Canada WHMIS Ingredient Disclosure List over 0.1%.

SECTION XVII: DISCLAIMER

DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE ACCURATE. HOWEVER, I.P.C. MAKES NO WARRANTY EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS OBTAINED FROM THE USE THEREOF. I.P.C. ASSUMES NO RESPONSIBILITIES FOR INJURY FROM THE USE OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME: INDUSTRIAL PROTECTIVE COATINGS
 ADDRESS: 1855 ENTERPRISE DRIVE, DE PERE, WI 54115
 EMERGENCY PHONE: CHEM TREC 1-800-424-9300

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). Where a proprietary ingredient is shown, the identity may be made available as provided in this standard.

All components of this product are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

1. PRODUCT NAME: ANCHOR CRETE PART C SAND - Pigmented

Chemical Family: Hydraulic cement patching compound.

2. HAZARDOUS INGREDIENTS:

EXPOSURE LIMITS*					
HAZARDOUS INGREDIENTS	CAS NUMBER	TLV	STEL	PEL	CONTENT
Silica, Crystalline Quartz**	14808-60-7	***	None	****	70-85 %
Portland Cement	65997-15-1	10 mg/M3	None	None	10-25 %
Calcium Magnesium Hydroxide	39445-23-3	3mg/m3*****	None	5 mg/m3	<6 %

(*) Refer to Section 7 for available LD/LC (50) Health Hazard Data.

(**) Contains less than 0.1% w/w 53 micron or smaller Crystalline Quartz

(***) 0.1 mg/m3 respirable quartz

(****) 10 mg/m3 divided by %SiO₂+2 (respirable quartz)

(*****) Particulates NOC - Respirable

3. PHYSICAL DATA:

Boiling Point (°C):	N/Ap	Water/Oil Distribution Coefficient:	N/Av
Percent VOC (w/w):	0	Solubility in Water:	Slight
Freezing Point (°C):	N/Ap	Specific Gravity:	N/Av
Vapor Pressure mmHg @ 20 (°C):	N/Av	pH:	N/Ap
Vapor Density:	>Air		
Odor Threshold:	N/Av	Evaporation Rate:	N/Av
Appearance:	Pigmented Powder	Odor:	Odorless
N/Av = Not Available	N/Ap = Not Applicable	ca. = Approximate	

4. FIRE AND EXPLOSION HAZARD DATA: HMIS Hazard Rating No. 0 (Minimal)

Flash Point: Non-combustible Method: Not Applicable

Auto-Ignition Temperature: Non-combustible

Limits of Flammability: LEL: Not Available UEL: Not Available

Extinguishing Media: Use extinguishing media suitable for surrounding fires.

Special Fire & Unusual Hazards: None.

5. REACTIVITY DATA: HMIS Hazard Rating No. 0 (Minimal)

Stability: Stable. Not sensitive to mechanical impact.

Incompatibility: Strong mineral acids. Hydrofluoric acid slowly dissolves silicon dioxides (Silicon Tetrafluoride, a toxic substance, is formed).

REACTIVITY DATA (cont.):

Hazardous Decomposition Products: None known.

Hazardous Polymerization: Will not occur.

6. ENVIRONMENTAL AND DISPOSAL INFORMATION:

Action to Take for Spills/Leaks: No special procedures are required for cleanup of spills or leaks of this material. Sweep up and return for reuse or discard. Landfill at agency approved waste-disposal facilities.

Waste Disposal Method: Does not contain hazardous chemicals as defined in 40 CFR 260. Handle disposal of waste material in accordance with local, state, province and federal regulation. Landfill agency approved waste disposal facilities.

7. HEALTH HAZARD DATA: HMIS Hazard Rating No. 3 (Serious)

PRIMARY ROUTE OF ENTRY: Inhalation.

Effects of Overexposure

Inhalation: May cause irritation to mucous membranes, upper respiratory tract, coughing and labored breathing.

Eyes: Abrasive action may cause damage to the outer surface of the eye. In combination with water may cause severe irritation with corneal injury.

Skin Contact: Abrasive action may cause slight to moderate irritation. In combination with water dermal exposure may cause severe alkali burns.

Skin Absorption: Does not absorb through skin.

Ingestion: Not likely source of entry due to physical nature of material.

Chronic: Materials are not known mutagenic, teratogenic, or reproductive health hazards.

Repeated inhalation of respiratory silica in excess of the TLV over extended periods can result in irreversible fibrosis of the lungs (silicosis). An IARC evaluation concluded that there is sufficient evidence (Group I) that crystalline silica may be carcinogenic to humans.

8. FIRST AID:

Inhalation: Remove victim from exposure. If difficulty with breathing, administer oxygen. If breathing has stopped administer artificial respiration, preferably mouth-to-mouth. Seek medical attention.

Eyes: Flush eyes with water, lifting upper and lower lids occasionally for 15 minutes. Seek medical attention.

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists seek medical attention. Wash contaminated clothing before reuse.

Ingestion: Do NOT induce vomiting; give large quantities of water; get immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquids into lungs. Do NOT give anything by mouth to an unconscious person.

9. SPECIAL PROTECTION INFORMATION:

Ventilation: Ventilation is recommended. Air movement must be designed to insure turnover at all locations in work area to avoid build up of airborne dust concentrations.

Personal Protection Equipment: Do NOT wear contact lenses when working with this material. Use safety glasses with side shields and Rubber/Latex gloves. Selection of specific items such as boots and apron will depend on operation. Wear respirator protection whenever airborne concentrations exceed TLV or TWA limits. Use NIOSH/OSHA approved respirators equipped with a dust cartridge for listed hazard.

Confined spaces, rooms, or tanks are areas where concern for TLV's is especially important. Reference OSHA Regulation CFR 29 1910.134 for recommended respiratory protection.

10. ADDITIONAL INFORMATION:

Average Shelf Life: Refer to Product Data Sheet

Special Instructions: Store in a cool, dry place.

REGULATORY INFORMATION:

Title III Section 302: No reportable chemicals.

Title III Section 311/312: Health hazard: Immediate
Delayed
Physical hazard: None

Title III Section 313: None above deminimis.

State: California: This product contains a chemical known to the state of California to cause cancer.

Silica, Crystalline Quartz (Respirable) 14808-60-7 < 0.1 %

WHMIS Classification: Class D, Div. 2, Sub. A
Class D, Div. 2, Sub. B
Class E

Canadian Domestic Substance List: All chemicals are listed.

TRANSPORTATION:

National Motor Freight Classification (NMFC): 149980 Sub: - Class: 55

Description: PAINT AND RELATED MATERIAL

Emergency Response Guide Page No.: NOT REGULATED

DOT Reportable Quantity: NOT REGULATED

Proper Shipping Name: NOT REGULATED – USE NMFC DESCRIPTION

Marine Pollutant: NL

P = Moderate PP = Severe WS = Water Sheen
NL = Not listed ND = Not Determined

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