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SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product Code: MC446R
Product Trade Name: Armaglaze 9000 Part B
Product Class / Intended End Use: Coating Auxillary
Emergency Telephone Numbers: For emergency health, safety and environmental information call 416-252-5676 (Monday to Friday 9am-4pm est/edt)

For Emergency Transportation Information call CANUTEC at 613-996-6666

SECTION 2: HAZARDS IDENTIFICATION

Classification:

	Category
Acute toxicity, inhalation	5
Serious eye damage/eye irritation	2A
Respiratory sensitization	1
Skin Sensitization	1
Signal word:	DANGER!

Hazard Statements:

- May cause an allergic skin reaction
- Causes serious eye irritation
- May be harmful if inhaled
- May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary Statements:

- Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray
- Wash skin thoroughly after handling
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves/ protective clothing/ eye protection/ face protection
- Wear respiratory protection

Other Hazards not Otherwise Classified:

- None noted

Hazard Pictograms:



PROTEK PAINT – SAFETY DATA SHEET

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS #	WT RANGE %
Hexane, 1,6-diisocyanato-, homopolymer	28182-81-2	100
<i>N/A = Not Available N/E = Not Established</i>		

SECTION 4: FIRST-AID MEASURES

- Ingestion:** Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.
- Inhalation:** Move to an area free from further exposure. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.
- 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.
- 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.
- Notes to Physician:** Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapours 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.

Call a poison centre or doctor/physician if you feel unwell.

PROTEK PAINT – SAFETY DATA SHEET

Most Important Symptoms and Effects of Overexposure:

- Acute Inhalation:** Diisocyanate or polyisocyanate vapours or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.
- 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.
- Acute Skin:** Causes skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.
- Chronic Skin:** Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.
- 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 vapour contact may cause conjunctivitis.
- 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 ACGIH.

SECTION 5: FIRE-FIGHTING MEASURES

- Suitable Extinguishing Media:** Use a fire fighting agent suitable for flammable liquids such as dry chemical, carbon dioxide (CO₂), foam, water spray for large fires.
- Unsuitable Extinguishing Media:** Do not use a heavy water stream.
- Specific Hazards Arising from the Substance or Mixture:** Harmful vapours. Evolution of fog: The substances/groups of substances mentioned can be released in case of fire. Combustible liquid and vapour. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.
- 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 vapours 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.

PROTEK PAINT – SAFETY DATA SHEET

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures:

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

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

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container.

Environmental Precautions:

Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Do not breathe vapours, 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.

Conditions for Safe Storage:

Store in a cool, dry, well-ventilated area. Store away from incompatible materials and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Keep container tightly closed. Keep separate from food products.

Incompatibles:

Store away from acids, oxidizing agents, amines.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Name	ACGIH TLV (ppm)		OSHA PEL (ppm)	
	TWA	STEL	PEL	STEL
Hexane, 1,6-diisocyanato-, homopolymer	0.05000	N/A	N/A	N/A
<i>N/A = Not Available N/E = Not Established</i>				

PROTEK PAINT – SAFETY DATA SHEET

Control Parameters:	No TLV data available on product.
Industrial Hygiene/Ventilation Measures:	<p>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.</p> <p>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.</p>
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.
Respiratory Protection:	<p>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).</p> <p>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 exist: -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.</p> <p>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 exist: - 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.</p>
Eye/Face Protection:	When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggles, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.
Skin/Hand 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 should be worn, long sleeved shirts and pants. Nitrile rubber gloves. Butyl rubber gloves. Neoprene gloves.

PROTEK PAINT – SAFETY DATA SHEET

SECTION 9: PHYSICAL PROPERTIES

% Volatiles by Weight:	0
Auto Ignition Temperature:	Data not Available
Boiling Point:	136°C / 276.8°F
Decomposition Temperature:	Data not Available
Explosive Limit:	Data not Available
Flammability (solid, gas):	Flammable
Flash Point (Setaflash Closed Cup):	169 °C / 336.2 °F
Melting/Freezing Point:	Not Applicable
Odour Threshold:	Data not Available
Odour:	Almost Odourless
Partition Coefficient:	Data not Available
pH:	Not Applicable
Physical State/Appearance:	Clear Viscous Liquid
Relative Evaporation Rate (Butylacetate=1)	Data not Available
Solubility in Water:	Insoluble
Specific Gravity:	1.12
Vapour Density:	Data not Available
Vapour Pressure:	Data not Available
Viscosity:	800-1000 cps

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Not normally reactive.
Chemical Stability:	Stable under the recommended storage and handling conditions prescribed.
Possibility of Hazardous Reactions:	Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization
Conditions to Avoid:	Heat, flames and sparks.
Incompatibles:	Water, Amines, Strong bases, Alcohols, Copper alloys.
Hazardous Decomposition Products:	By Fire and High Heat: Carbon dioxide (CO ₂), carbon monoxide (CO), oxides of nitrogen (NO _x), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

PROTEK PAINT – SAFETY DATA SHEET

SECTION 11: TOXICOLOGICAL INFORMATION

Name	LD 50			LC 50		
	mg/kg	Animal	Route	ppm	Animal	Route
Hexane, 1,6-diisocyanato-, homopolymer	>5000	Rat	Oral	158 mg/m ³	Rat	Inhalation, 4h
<i>N/A = Not Available N/E = Not Established</i>						

Acute Toxicity:	See above.
No Test Data for the Mixture On:	Skin corrosion/irritation, eye damage/irritation, skin sensitization, respiratory sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, STOT- single exposure, STOT- repeated exposure, aspiration.
Symptoms/Injuries Eye Exposure:	Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. May cause temporary corneal injury. Vapour may cause irritation with symptoms of burning and tearing.
Symptoms/Injuries Skin Exposure:	Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May be corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage. Toxic by skin absorption.
Symptoms/Injuries Inhalation:	Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Also shortness of breath and reduced lung function (difficulty breathing). Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.
Symptoms/Injuries ingestion:	Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
Additional Information:	Persons previously sensitized to isocyanates may develop a cross sensitization reaction to other isocyanates.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:	No test data on mixture.
VOC (g/L):	0
Persistence and Degradability:	No data available.
Bio-accumulative Potential:	No data available.
Mobility in Soil:	No data available.
Other Adverse Effects:	No data available.

PROTEK PAINT – SAFETY DATA SHEET

SECTION 13: DISPOSAL CONSIDERATIONS

- Handling for Disposal:** See Section 7 (Handling and Storage) for further details. Empty containers may contain hazardous residues.
- Methods of Disposal:** Dispose in accordance with all applicable federal, state, provincial and local regulations. 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.
- RCRA:** If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

DO NOT INCINERATE CLOSED CONTAINERS

SECTION 14: TRANSPORTATION INFORMATION

UN Number:	Not regulated
UN Proper Shipping Name:	Not regulated
Transport Hazard Class:	Not regulated
Packing Group:	Not regulated
Environmental Hazards:	This product does not meet the criteria for an environmentally hazardous mixture.
Special Precautions for User:	Keep away from heat, sparks and open flame. No smoking.
Transport in Bulk:	Information not available.

SECTION 15: REGULATORY INFORMATION

- Canada:** All components are in compliance with the Canadian environmental protection act and are present on the domestic substances list. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.
- USA:**
TSCA: All components of this material are on the US TSCA inventory or are exempt.
OSHA: This material is classified as hazardous under OSHA regulation (29CFR 1910.1200).
CERCLA: Reportable quantities (RQ) (40 CFR 117.302). Data not available.
SARA TITLE 111: Sec 302, extremely hazardous substances, 40 CFR 355 - Data not available
SARA TITLE 111: Sec 313, toxic chemical notification, 40 CFR 372 - Data not available

SECTION 16: OTHER INFORMATION

HMIS:	Health 3	Flammability 2	Reactivity 0	
NFPA:	Health 3	Flammability 2	Reactive Instability 0	Special Hazard 0

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DISCLAIMER

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END OF SAFETY DATA SHEET