



DUOTACK PART A

WHMIS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		NOT REGULATED

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Use: Adhesive for insulating material
 Formula number: 719.1

Manufacturer: Soprema Canada
 1675 Haggerty Street
 Drummondville (Quebec) J2C 5P7
 CANADA
 Tel.: 819 478-8163

Distributors: Soprema Inc. 44955 Yale Road West Chilliwack (B.-C.) V2R 4H3 CANADA Tel.: 604 793-7100
 Soprema USA 310 Quadral Drive Wadsworth (Ohio) 44281 UNITED STATES Tel.: 1 800 356-3521

In case of emergency:

SOPREMA (8:00am to 5:00pm): 1 800 567-1492 CANUTEC (Canada) (24h.): 613 996-6666 CHEMTREC (USA) (24h.): 1 800 424-9300

EMERGENCY OVERVIEW!!!

Toxic if inhaled. Cause skin irritation. May cause damage to lung if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Can decompose at high temperatures forming toxic gases, such as nitrogen oxides and hydrogen cyanide.

SECTION II: COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Polymeric diphenylmethane diisocyanate (PMPPI)	9016-87-9	60-100	Not established	Not established
Methylene diphenyl diisocyanate (MDI)	101-68-8	10-30	0.005 ppm	Not established

SECTION III: POTENTIAL HEALTH EFFECTS

Effects of Short-Term (Acute) Exposure

INHALATION

Exposures by inhalation are unlikely to occur unless the product is heated or if it forms an aerosol or mist during pouring or spraying operations. Short-term inhalation exposure can cause respiratory and mucous membrane irritation. Symptoms include eye and nose irritation, dry or sore throat, runny nose, shortness of breath, wheezing and laryngitis. Coughing with chest pain or tightness may also occur, frequently at night. These symptoms may occur during exposure or may be delayed of several hours. High aerosol concentrations could cause inflammation of the lung tissue (chemical pneumonitis), chemical bronchitis with severe asthma-like wheezing, severe coughing spasms and accumulation of fluid in the lungs (pulmonary oedema), which could prove fatal. Symptoms of pulmonary oedema may not appear until several hours after exposure and are aggravated by physical exertion. (1)

SKIN CONTACT

MDI and PMPPI are severe skin irritant. Isocyanates, in general, can cause skin discolouration (staining) and hardening of the skin after repeated exposures. Skin sensitization, resulting in dermatitis, may occur in some individuals. Skin contact is not expected to result in the absorption of harmful amounts. (1)

EYE CONTACT

Eye contact with the product may cause moderate irritation.

INGESTION

It is unlikely that toxic amounts of this product would be ingested with normal handling and use.

Effects of Long-Term (Chronic) Exposure

RESPIRATORY SENSITIZATION

The sensitization is usually caused by a very large exposure or by multiple exposures. Although varying periods of exposure (1 day to years) may elapse before sensitization occurs, it develops more often during the first few months of exposure. Sensitized individuals react to very low levels of MDI or PMPPI (as low as 0.0014 ppm) that have no effect on unsensitized people. At first, the symptoms may appear to be a cold or mild hay fever. However, severe asthmatic symptoms can develop and include wheezing, chest tightness, shortness of breath, difficulty breathing and/or coughing. Fever, chills, general feelings of discomfort, headache and fatigue can also occur. Symptoms may occur immediately upon exposure, within an hour or several hours after exposure or both and/or at night. Typically the asthma improves with removal from exposure (e.g. weekends and vacations) and returns, in some cases, in the form of an "acute attack" on renewed exposure. Sensitized people who continue to work with MDI or PMPPI may develop symptoms sooner after each exposure. The number and severity of symptoms may increase. Following removal from exposure,

some workers may continue to have persistent respiratory problems such as asthmatic symptoms, bronchial problems and hypersensitivity. Others may recover fully and may gradually lose their sensitivity within several years. It may also cause hypersensitivity pneumonitis, another allergic lung disease, which is characterized by symptoms such as shortness of breath, fever, tiredness, non-productive cough, and chills. Several studies have shown that continued exposure to low levels of MDI and other isocyanates may cause impaired lung function, such as diminished respiratory capacity. Other studies have shown that extremely low levels of MDI (e.g. less than 0.003 ppm) do not decrease lung function. Cross-sensitization between different isocyanates may occur. People sensitized to toluene diisocyanate (TDI) or hexamethylene diisocyanate (HDI) may show sensitization to MDI or PMPPI, without having previous exposure to this chemical. (1)

SKIN SENSITIZATION

Allergic contact dermatitis can be developed from contact with the product. (1)

CARCINOGENICITY

MDI; PMPPI: The IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). The ACGIH has not assigned a carcinogenicity designation to this chemical. The NTP has not listed this chemical in its report on carcinogens. (1)

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

No information available.

REPRODUCTIVE TOXICITY

No information is available on others products.

MUTAGENICITY

MDI: In one case report, MDI caused DNA damage in human white blood cells after inhalation exposure to 5 to 20 ppb. This report provides insufficient information for determining the mutagenicity of MDI. No other human or animal in vivo studies have been reported. (1)

SECTION IV: FIRST AID MEASURES

SKIN CONTACT

Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists, get medical attention.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.

INHALATION

In case of gas or vapour inhalation, move victim to fresh air. If breathing is difficult, give oxygen. If breathing stops, give respiratory assistance. Obtain medical assistance.

SWALLOWING

Do not induce vomiting. Immediately contact local poison control centre. Should vomiting occur, be sure to keep the victim's head below hips to avoid aspiration of vomit into the lungs. Maintain the victim at rest and obtain immediate medical attention.

SECTION V: FIRE-FIGHTING MEASURES

FLAMMABILITY: Non Flammable.

EXPLOSION DATA: Sensitivity to mechanical impact: no

FLASH POINT: Greater than 150 °C (ASTM D93)

AUTO-IGNITION TEMPERATURE: Not available

FLAMMABILITY LIMITS IN AIR: (% in volume) Not available

FIRE AND EXPLOSION HAZARDS

This product can probably burn if strongly heated. Irritating and/or toxic gases nitrogen oxides and hydrogen cyanide may be generated by thermal decomposition or combustion. Reacts vigorously with water above 50 °C. Close containers may rupture violently when heated.

COMBUSTION PRODUCTS

Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures. Combustion of this product may release gaseous hydrocarbons, hydrogen fluoride, hydrogen chloride, carbon oxides, formaldehyde, acetaldehyde, methylglyoxal, nitrogen oxides, hydrogen cyanide, silicon oxides, phosgene, hydrochloric acid and other irritating and toxic fumes.

FIRE FIGHTING INSTRUCTIONS

Evacuate area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from containers because of the high risk of explosion. Stop leak before attempting to put out the fire. If leak cannot be stopped, and if there is no risk to the surrounding area, let the fire burn itself out. Move containers from fire area if this can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

EXTINGUISHING MEDIA

Foam anti-alcohol or universal, dry chemical powder, CO₂, sand. Water or water-based foam, if used in very large quantities, may be effective. However, care must be taken since the reaction between water or water-base foam and hot MDI can be vigorous.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL

Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all sources of ignition. Shut off source of leak if you can do it without risk. Contain the spill. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Sweep or shovel into containers with lids, use clean non-sparking tools (e.g. plastic) to collect absorbed material. Cover and remove to appropriate well ventilated area until disposal. Do not touch or walk through spilled material. Wash spill area with soap and water. Prevent entry into waterways, sewers, basements or confined areas. Dispose of material according to the local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash hands thoroughly after handling. Before handling, it is very important that ventilation controls are operating and protective equipment requirements are being followed. People working with this product should be properly trained regarding its hazards and its safe use. Tightly reseal all partially used containers. Do not cut, puncture or weld empty containers.

STORAGE

Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. Keep storage areas clear of combustible materials. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment near storage area. Inspect all containers to make sure they are properly labelled.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS: Wear gloves made from nitrile.

RESPIRATORY: If the TLV is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards.

EYES: Wear chemical safety goggles in accordance with standards.

OTHERS: Eye bath and safety shower.

CONTROL OF VAPOURS: Local exhaust is needed to control vapour and dust level to below recommended limits.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
ODOUR AND APPEARANCE:	Amber liquid
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Not available
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H₂O = 1):	1.19 kg / L
SOLUBILITY IN WATER (20°C):	Insoluble
VOLATILE ORGANIC COMPOUND (V.O.C.) CONTENT:	0 g / L
VISCOSITY:	3500 Centipoises (Visco Brookfield, 25 °C)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable at handling and storage conditions recommended under the Section VII.

CONDITIONS OF REACTIVITY: Avoid excessive heat.

INCOMPATIBILITY: Water. Reacts slowly, forming carbon dioxide and inert material comprised of non-toxic polyureas which could rupture closed containers. 4,4' Methylene dianiline is formed as an intermediate product in this reaction. Above 50 deg C, the reaction may become progressively more vigorous. Amines, alcohols, acids, bases, metal compounds, amides, phenols, mercaptans, urethanes, ureas and surface active compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: This product reacts with water and causes an emanation of carbonic gas which would lead to pressure increasing in closed containers.

SECTION XI: TOXICOLOGICAL INFORMATION**TOXICOLOGICAL DATA****MDI and PMPPI: (1)**

CL50 (inhalation, rat):	369 mg/m ³ (4 hours exposition, aerosol)
DL50 (oral, rat):	> 10000 mg/kg
DL50 (skin, rabbit):	> 10000 mg/kg

Effects of Short-Term (Acute) Exposure**INHALATION**

MDI: No significant effects were found when rats were exposed to 2, 5 and 15 mg/m³ of MDI aerosol for 6 hours/day, 5 days/week for 2 weeks. (1)

EYE CONTACT

MDI: MDI has caused no irritation or slight irritation of the eyes. (1)

PMPPI: PMPPI is a mild eye irritant. (1)

SKIN CONTACT

MDI: MDI is a severe skin irritant. (1)

Effects of Long-Term (Chronic) Exposure**TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY**

No information.

MUTAGENICITY

MDI: It is not possible to conclude that MDI is mutagenic. (1)

CARCINOGENICITY

MDI: IARC has determined there is limited evidence for the carcinogenicity of a mixture containing monomeric and polymeric MDI to experimental animals. (1)

SECTION XII: ECOLOGICAL INFORMATION**ENVIRONMENTAL EFFECTS**

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and / or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life.

SECTION XIII: DISPOSAL CONSIDERATIONS**WASTE DISPOSAL**

This product is listed as hazardous waste. Consult local, state, provincial or territory authorities to know disposal methods. Also listed as hazardous waste by the RCRA (USA); waste disposal as to follow EPA regulations. Do not dispose of waste with normal garbage or sewers systems.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG – DOT): Not Regulated.

IDENTIFICATION NUMBER: Not applicable.

SHIPPING NAME: Not applicable.

PACKING GROUP: Not applicable.

CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS: Class D2A: Very toxic material causing other effects. (MDI: respiratory tract sensitization)

Class D2B: Poisonous and infectious material - Other effects – Toxic (MDI: skin irritation, skin sensitization)

DSL: All constituents of this product are included on the Domestic Substances List (DSL – Canada)

TSCA: All constituents of this product are included on the Toxic Substances Control Act Inventory (TSCA – United States).

HMIS (USA):		NFPA (USA):	
Health:	2	Health:	2
Flammability:	1	Flammability:	1
Reactivity:	1	Reactivity:	1
Protective equipment:	G	Specific hazard:	-

SECTION XVI: OTHER INFORMATION**Glossary:**

ANSI:	American National Standards Institute
ASTM:	American Society for Testing and Materials
CAS:	Chemical Abstract Services
CSA:	Canadian Standardisation Association
DOT:	Department of Transportation (United States)
EPA:	Environmental Protection Agency (United States)
HMIS:	Hazardous Material Information System
LD50/LC50:	Less high lethal dose and lethal concentration published
NFPA:	National Fire Protection Association (United States)
OSHA:	Occupational Safety & Health Administration (United States)
RCRA:	Resource Conservation and Recovery Act (United States)
TDG:	Transportation of Dangerous Goods
TLV-TWA:	Threshold Limit Value – Time-weighted average
WHMIS:	Workplace Hazardous Materials Information System (Canada)

References:

- (1) CHEMINFO (2010) Canadian Centre of Occupational Health and Safety, Hamilton (Ontario) Canada.
- (2) Material Safety Data Sheet of the supplier.

Code of MSDS:**CA U DRU SS FS 145****For more information:**

1 800 567-1492

The Material Safety Data Sheets of SOPREMA Canada are available on Internet at the following site: <http://www.soprema.ca>.

Justification of the update:

- New formula.

This MSDS contains all the information required by ANSI Z-400.1-1998 standard (United States), by regulation 29 CFR Part 1910.1200 of the Hazard Communication Standard of OSHA, and is in accordance with standard DORS/88-66 OF WHMIS Canada.

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