

MATERIAL SAFETY DATA SHEET
ALSAN RS 222 PRIMER

WHMIS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 <p style="text-align: right;">PAINT RELATED MATERIAL Class 3 UN1263 P.G.: II</p>

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Use: PMMA liquid field membrane

Formula number: 818.1

Manufacturer:

Soprema Canada
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CANADA
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Distributors:

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

EMERGENCY OVERVIEW!!!

Clear liquid with strong solvent odour. CAUTION! This product and its vapours are extremely flammable. The vapours are heavier than air and may spread long distances. Distant ignition and flash back are possible. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

May cause skin, eye and respiratory tract irritation. May be harmful or fatal if swallowed. Ingestion of the product can cause severe lung injury when aspirated. Inhalation of high concentrations of this product may cause central nervous system (CNS) depression (headache, nausea, dizziness, drowsiness, incoordination and unconsciousness). May cause skin and respiratory sensitization.

SECTION II: COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Methyl methacrylate (MMA)	80-62-6	15-40	50 ppm	100 ppm
Acrylated resins	Confidential	10-30	Not available	Not available
2-Ethylhexyl acrylate (2-EHA)	103-11-7	7-13	Not available	Not available
Diisopropanol-P-toluidine (DPPT)	38668-48-3	0.1-1	Not available	Not available

SECTION III: POTENTIAL HEALTH EFFECTS

Effects of Short-Term (Acute) Exposure

INHALATION

Acrylated resins:

Inhalation of mists or aerosols may cause respiratory irritation. (2)

MMA:

MMA is extremely volatile and can easily form high vapour concentration at room temperatures. Low concentrations are probably irritating to the nose, throat and respiratory tract. Higher concentrations can probably cause symptoms of central nervous system (CNS) depression, such as headache, nausea, dizziness, drowsiness, and confusion. Very high concentrations may cause loss of consciousness and possibly death. Due to its irritating nature, MMA may cause a potentially fatal accumulation of fluid in the lungs. Symptoms may include shortness of breath, pain in the chest and difficulty breathing. Symptoms may not develop for up to 24 hours after exposure. (1)

2-EHA:

2-EHA is irritating to respiratory tract. (2)

DPPT:

Irritating to the respiratory system. (2)

SKIN CONTACT

Acrylated resins:

Skin contact may cause moderate irritation and allergic reactions in persons already sensitized to acrylates. (2)

MMA:

MMA is probably a mild to moderate skin irritant, based on animal information and limited human information. Mild redness was observed in approximately 16/50 volunteers, after a 48 hour exposure to cotton saturated with MMA. MMA can be absorbed through the skin but no harmful effects would be expected by this route of exposure. Repeated or prolonged skin contact can cause allergic skin sensitization. (1)

2-EHA:

2-EHA is a severe irritant based on animal information. (1)

DPPT:

Prolonged contact with the product can result in skin irritation. (2)

EYE CONTACT

Acrylated resins:

Contact with eyes may cause moderate irritation, redness and oedemas. (2)

MMA:

MMA is probably a mild to moderate eye irritant, based on animal information. (1)

2-EHA:

2-EHA is a very mild irritant based on animal information. (1)

DPPT:

Irritating to eyes and respiratory system. (2)

INGESTION

Acrylated resins:

No information available.

MMA:

Based on animal evidence, ingestion of MMA is likely to produce signs and symptoms of CNS depression. Ingestion is not a typical route of occupational exposure. (1)

2-EHA:

May be harmful if swallowed. (2)

DPPT:

Harmful if swallowed. (2)

Effects of Long-Term (Chronic) Exposure

SKIN SENSITIZATION

Acrylated resins:

Prolonged and/or repeated contact with skin or mucosa may cause irritation, redness, blisters, dermatitis, etc. (2)

MMA:

MMA is a skin sensitizer. There are numerous reports of allergic skin sensitization developing in people occupationally exposed to products containing MMA or MMA itself. These findings are supported by positive patch testing results. Once a person is sensitized to a material, contact with even a small amount causes outbreaks of dermatitis with symptoms such as skin redness, itching, rash and swelling. This can spread from the hands or arms to other parts of the body. (1)

2-EHA:

2-EHA is a skin sensitizer based on animal information. Sensitization in humans has also been reported. Several case studies have reported dermatitis and hand eczema in workers exposed to 2-EHA in adhesives, glues, inks and other products. Positive patch test reactions were obtained for 2-EHA in many of these workers. (1)

DPPT:

Skin sensitizing effects were not observed in animal studies. (2)

NERVOUS SYSTEM

MMA:

Based on human studies and supported by animal evidence, long-term exposure to MMA can probably cause mild central nervous system effects (e.g. headache, nausea, dizziness). (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

CARCINOGENICITY

MMA:

In general, human studies have not shown convincing evidence of an increased cancer risk from exposure to MMA. One study showed increased colorectal cancer in a three groups exposed to MMA and ethyl acrylate and their volatile by-products. No conclusions can be drawn from this study due limitations such as the concurrent exposures. Negative results have been obtained in animal studies. The International Agency for Research on Cancer (IARC) has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). The American Conference of Governmental Industrial Hygienists (ACGIH) has designated this chemical as not classifiable as a human carcinogen (A4). The US National Toxicology Program (NTP) has not listed this chemical in its report on carcinogens. (1)

2-EHA:

The International Agency for Research on Cancer (IARC) has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3).

Acrylated resins and DPPT:

No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

MMA:

There is no human information available. MMA has not caused teratogenic or embryotoxic effects in animals at exposures which were not maternally toxic. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

REPRODUCTIVE TOXICITY

MMA:

No human information available. No effects have been observed in limited animal studies. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

MUTAGENICITY

MMA:

The available information does not indicate that MMA is mutagenic. (1)

2-EHA:

2-eha demonstrated evidence of genotoxic activity in some assays (i.e. *In vitro* sister chromatid exchange, mouse lymphoma and *in vitro* UDS), the activity was weak and equivocal. (2)

Acrylated resins and DPPT:

No information available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS

MMA:

No information available. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

POTENTIAL FOR ACCUMULATION

MMA:

Probably does not accumulate. MMA is rapidly absorbed by the inhalation, oral and dermal routes of exposure and distributed throughout the body. It is metabolized to methanol and methacrylic acid, which is further metabolized and taken up in normal biochemical pathways in the body. Elimination is mainly by exhalation of carbon dioxide. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

RESPIRATORY SENSITIZATION

MMA:

There is insufficient information available to conclude that MMA is a respiratory sensitizer. There are only three reliable case reports of respiratory sensitization developing after occupational exposure to products containing MMA. This is a very small number of cases compared to the total population exposed to MMA in the workplace. Sensitized people can experience symptoms of bronchial asthma such as wheezing, difficult breathing, sneezing and runny or blocked nose at low airborne concentrations that have no effect on unsensitized people.

Acrylated resins, 2-EHA and DPPT:

No information available.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT

Avoid exposition to direct sunlight or UV rays while the product is on the skin. Remove contaminated clothing. Wash thoroughly with soap and water. Do not use solvents. If irritation persists, get immediate medical attention.

EYE CONTACT

Avoid exposition to direct sunlight or UV rays while the product is on the eyes. Flush thoroughly with water for at least 15 minutes. If irritation persists, get immediate 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 immediate medical attention.

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: Flammable liquid, Class 1B (NFPA)
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.

FLASH POINT: 2°C or 35.6°F (MMA, closed cup)
AUTO-IGNITION TEMPERATURE: 230°C or 446°F (2-EHA)
FLAMMABILITY LIMITS IN AIR: (% en volume) Not available
FIRE AND EXPLOSION HAZARDS

This product and its vapours are easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours are heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. The product may ignite on contact with strong oxidizing agents. Do not cut, puncture or weld empty containers.

COMBUSTION PRODUCTS

Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Toxic and/or irritating gases or fumes can emanate from empty containers when submitted to high temperatures: CO, CO₂, methacrylic acid 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.

MEANS OF EXTINCTION

Universal foam, dry chemical powder, CO₂ or sand. Use of water spray when fighting fire may be inefficient because of the low flash point of the product.

SECTION VI: ACCIDENTAL RELEASE MEASURES

RELEASE OR SPILL

Ventilate area. Wear appropriate protective equipment during cleanup. Eliminate all ignition sources. Shut off source of leak if it can be done without risk. Contain the spill. Absorb with inert material such as sand or earth. Sweep or shovel into containers with lids, use clean non-sparkling tools (sp.: plastic) to collect absorbed material. Cover and remove to appropriate well-ventilated area until disposal. Wash spill area with soap and water. Prevent entry into waterways, sewers or basements. Dispose of this product according to local environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

This product and its vapours are extremely flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash 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 would be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Ground transfer containers to avoid static accumulation. Tightly reseal all partially used containers. Do not cut, puncture or weld containers.

STORAGE

Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. 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 in polyvinyl alcohol or butyl rubber.
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:	Clear / strong solvent odour
ODOUR THRESHOLD:	Not available
VAPOUR DENSITY (air = 1):	Heavier than air
EVAPORATION RATE (Butyl acetate = 1):	Not available
BOILING POINT (760 mm Hg):	Not available
FREEZING POINT:	Not available
SPECIFIC GRAVITY (H₂O = 1):	0.99 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND (V.O.C.) CONTENT:	2.5 g/L
VISCOSITY:	1 500 centipoises (Visco Brookfield LVT)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.
CONDITIONS OF REACTIVITY: Avoid excessive heat.
INCOMPATIBILITY: Strong acids, strong oxidizing and reducing agents, basis, and halogenated compounds.
HAZARDOUS DECOMPOSITION PRODUCTS: During a fire, irritating/toxic gases, such as carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbon by-products and black smoke.
CONDITIONS TO AVOID: Open flames, sparks, electrostatic discharge, heat and other ignition sources; prolonged exposure to direct sunlight.
HAZARDOUS POLYMERISATION: Direct exposition to sunlight or storage temperatures over 60°C or 140°F can produce uncontrolled and exothermic polymerisation.

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Acrylated resins: (2)

LD50 (oral, rat): > 4 000 mg/kg
LD50 (dermal, rabbit): > 2 000 mg/kg

MMA: (1)

LC50 (inhalation, rat): 7 093 ppm (4-hour exposure)
LD50 (oral, rat): 3 205 mg/kg
LD50 (dermal, rabbit): > 7 550 mg/kg

2-EHA: (1)

LC50 (male rat): > 240 ppm (4-hour exposure)
LD50 (oral, rat): 5 753 mg/kg

DPPT: (2)

LD50 (oral, rat): 100 mg/kg

Effects of Short-Term (Acute) Exposure

INHALATION

MMA:

One study has shown lung effects (e.g. fluid accumulation and bleeding) in rats following short-term inhalation exposure to a low concentration (100 ppm). In other studies, short-term exposure to 710

to 16000 ppm has produced effects ranging from respiratory tract irritation, central nervous system (CNS) depression (e.g. reduced activity, respiratory depression, and unconsciousness) and lung damage to deaths in rats, mice, rabbits and guinea pigs. (1)

DPPT:

Inhalation-risk test (IRT) showed no mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapour-air mixture represents no acute hazard. (2)

Acrylated resins and 2-EHA:

No information available.

EYE IRRITATION

MMA:

MMA is a moderate to severe eye irritant. (1)

2-EHA:

2-EHA is a very mil irritant. (1)

DPPT:

BASF-Test on rabbits showed that DPPT is slightly irritating. (2)

Acrylated resins:

No information available.

SKIN IRRITATION

MMA:

There is insufficient information to conclude that MMA is a kin irritant. Unconfirmed studies have shown moderate to severe irritation. (1)

2-EHA:

2-EHA is a severe irritant. In a test conducted according to OECD guidelines, application of 2-ethylhexyl acrylate, covered, for 4 hours caused severe irritation in rabbits (maximum average scores at 24 hours: erythema: 3.2/4; oedema 2.7/4; average scores at 24 and 72 hours: erythema: 3/4; oedema: 1.95/4). The severity of reaction increased in 1/6 rabbits resulting in superficial chemical burns after 72 hours when the test was ended. (1)

DPPT:

BASF-Test on rabbits showed that DPPT is non-irritating. (2)

Acrylated resins:

No information available.

SKIN CONTACT

MMA:

Extremely high dermal doses (18900 or 37800 mg/kg) have produced temporary signs of CNS depression in rabbits.(3) No signs of toxicity were observed in rabbits treated dermally with up to 5000 mg/kg, under cover, for 24 hours. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

INGESTION

MMA:

Symptoms of CNS depression (increased, then decreased, respiratory rate, motor weakness, loss of reflexes, coma and death) have been reported in rats and rabbits following ingestion of very high doses (6600-18900 mg/kg). (1)

Acrylated resins, 2-EHA and DPPT:

No information available

Effects of Long-Term (Chronic) Exposure

INHALATION

MMA:

Dose-related nasal lesions (including tissue death) and lung damage (inflammation and fibrosis) have been consistently observed in rats and mice exposed by inhalation in long-term studies. In one study, rats exposed to 1000 ppm for 56 hours over 7 days showed adverse effects on the lungs (fibrosis and fluid accumulation). Decreased body, ovary, thyroid and adrenal gland, liver and kidney weights have also been observed. In one study, body, lung and spleen weights were decreased in male rats exposed to 116 ppm for 3 or 6 months. Deaths have

occurred in rats and mice with exposures to 3000 or 5000 ppm for 14 weeks. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

SKIN CONTACT

MMA:

A local neurotoxic effect was the only effect observed in male rats exposed dermally for 8 weeks. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

INGESTION

MMA:

Increased kidney weights were observed in female rats fed a high dose (775 mg/kg/day) for 2 years. No effects were seen in males fed up to 950/mg/kg/day or in females fed 3 or 25 mg/kg/day. Behavioural effects and 3 deaths were observed in male rats administered 500 mg/kg daily for 21 days. Doses of 100 and 200 mg/kg had no effect on behaviour. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

CARCINOGENICITY

MMA:

Negative results were obtained in mice and male rats exposed by inhalation to 500 or 1000 ppm, and in female rats exposed to 250 or 500 ppm for 102 weeks.(17) Negative results were also obtained in rats following dermal application of MMA for 16 weeks (3 days/week).(1) There is no information available.

Acrylated resins, 2-EHA and DPPT:

No information available.

TERATOGENOCITY, EMBRYOTOXICITY, FETOTOXICITY

MMA:

Methyl methacrylate did not produce developmental effects in one well-conducted study. The other studies located have limitations, such as incomplete evaluation of maternal toxicity, incomplete reporting, and the use of very high exposure levels. In a well-conducted study, rats were exposed to 0, 99, 304, 1178 or 2028 ppm methyl methacrylate (99.9% pure) on days 6-15 of pregnancy (6 h/d). Treatment-related reductions in maternal body weight and food consumption were noted at all exposure levels. No developmental effects were noted at any concentration. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

MUTAGENICITY

MMA:

The available information does not indicate that MMA is mutagenic. In vivo studies with rats and mice exposed by inhalation or ingestion have been negative. (1)

DPPT:

The substance was not mutagenic in bacteria. (2)

Acrylated resins and 2-EHA:

No information available

SKIN SENSITIZATION

MMA:

Skin sensitization as been produced in guinea pigs, using standards tests, in numerous studies.

2-EHA:

2-EHA is a skin sensitizer. (1)

DPPT:

Skin sensitizing effects were not observed in animal studies and Guinea pig maximization test. (2)

Acrylated resins:

No information available

REPRODUCTIVE TOXICITY

MMA:

No effects on fertility were noted in male mice exposed by inhalation to 100, 1000 or 9000 ppm MMA for 5 days and then mated for 8 weeks. (1)

Acrylated resins, 2-EHA and DPPT:

No information available.

SECTION XII: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS:

Do not allow product or runoff from fire control to enter grounds, basements, 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 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 considered a hazardous material. Consult local, state, provincial, territory or federal authorities to know disposal methods.

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG and DOT): Class 3

IDENTIFICATION NUMBER: UN 1263

SHIPPING NAME: Paint related material

PACKING GROUP: II

CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS: B2: Flammable liquid (flash point below 37.8°C).
D2B: Other toxicological effects (MMA and 2-EHA are sensitizers).

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

TSCA: All constituents of this product are included in the Toxic Substances Control Act Inventory (TSCA – USA).

Prop. 65: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

HMIS (USA):		NFPA (USA):	
Health:	2	Health:	2
Flammability:	3	Flammability:	3
Physical hazard:	1	Instability:	1
Protective equipment:	G	Specific hazard:	-

SECTION XVI: OTHER INFORMATION

Glossary:

ACGIH:	American Conference of Governmental Industrial Hygienists
ANSI:	American National Standards Institute
ASTM:	American Society for Testing and Materials
CAS:	Chemical Abstract Services
CFR:	Code of Federal Regulations (United States)
CSA:	Canadian Standardisation Association
DOT:	Department of Transportation
DSL:	Domestic Substances List (Canada)
EPA:	Environmental Protection Agency (United States)
HMIS:	Hazardous Material Information System
IARC:	International Agency for Research on Cancer
LD50/LC50:	Less high lethal dose and lethal concentration published
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health

NTP:	National Toxicology Program
OSHA:	Occupational Safety & Health Administration (United States)
RCRA:	Resource Conservation and Recovery Act (United States)
TDG:	Transportation of Dangerous Goods (Canada)
TLV-TWA:	Threshold Limit Value – Time-weighted Average
TSCA:	Toxic Substances Control Act (United States)
WHMIS:	Workplace Hazardous Materials Information System (Canada)

Reference:

- (1) CHEMINFO (2009) Canadian Centre for Occupational Health and Safety, Hamilton (Ontario) Canada
- (2) Suppliers material safety data sheets

Code of MSDS: CA U DRU SS FS 159
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.us>

Justification of the update:

- New product

This MSDS contains all the information required by ANSI Z400.1 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).

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.