

COLTACK

WHMIS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 <p>ADHESIVE Class 3 UN 1133 P.G.: II</p>

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Use: Adhesive composed of bitumen and polyurethane.

Formula number: 560.1

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

Distributors: Soprema Inc.
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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!!!

CAUTION! This product and its vapours are very flammable. The vapours are heavier than air and may spread long distances. Distant ignition and flash back are possible. Do not smoke. Adequate ventilation to the outside must be provided. All ignition source must be eliminated near working area (spark-producing devices or switches, furnaces, all pilot lights). Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

May cause irritation to eyes, skin and respiratory tract. Harmful or fatal if swallowed. Ingestion of the product can cause severe lung injury when aspirated. Inhalation of high vapour concentrations may cause central nervous system (CNS) depression (headache, nausea, dizziness, drowsiness, incoordination and unconsciousness). This product contains isocyanates. May cause sensitization by inhalation and by contact with skin.

SECTION II: COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Asphalt	8052-42-4	60-100	0.5 mg/m ³	Not established
Toluene	108-88-3	10-30	20 ppm	Not established
Methylene Di p-phenyl Di Isocyanate (MDI) and isomers	101-68-8	1-5	0.005 ppm	Not established
Stannane dibutylbis[(1-oxododecyl)oxy]	77-58-7	0.1-1	0.1 mg/m ³ (OSHA PEL)	Not established

SECTION III: POTENTIAL HEALTH EFFECTS

Effects of Short-Term (Acute) Exposure

INHALATION

Inhalation of vapours of toluene and isocyanates (MDI) can occur. The exposition to vapours of solvents over exposure limits may cause irritation of the respiratory system and central system depression (headaches, dizziness, nausea, tiredness, confusion and coma). MDI may cause respiratory sensitization, an allergic reaction (e.g. asthma, difficulty to breath, angina) which becomes evident upon re-exposure to this material.

Toluene: Symptoms are related to exposure concentration. At approximately 50 ppm, slight drowsiness and headache have been reported. Irritation of the nose, throat and respiratory tract has occurred between 50 and 100 ppm. Concentrations of about 100 ppm have caused fatigue and dizziness; over 200 ppm have caused symptoms similar to drunkenness (giddiness), numbness, and mild nausea; over 500 ppm have caused mental confusion and incoordination. (1)

MDI: MDI has a very low vapour pressure. Therefore, airborne exposures are unlikely to occur unless MDI is heated or forms an aerosol or mist during pouring, frothing or spraying operations. Short-term inhalation exposure to isocyanates 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 several hours. Some people may become sensitized to isocyanates. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: Not likely route of entry unless heated. Mist or fog if inhaled can cause harm. (2)

SKIN CONTACT

Frequent or prolonged contacts can remove the natural fat from the skin and may cause redness, skin irritation and dermatitis. Isocyanates (MDI) may cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Isocyanates can cause skin discoloration and hardening of the skin after repeated exposures. Toluene can be absorbed through the skin but skin contact is not expected to result in the absorption of harmful amounts. (1)

MDI: MDI is a severe skin irritant based on animal information. In general, isocyanates can cause skin discoloration (staining) and hardening of the skin after repeated exposures. Skin sensitization can occur in some people (see Effects of Long-Term (Chronic) Exposure for more information). Skin contact is not expected to result in the absorption of harmful amounts. (1)

EYE CONTACT

The vapours may cause irritation with tearing and discomfort, redness and pain. Eye contact with the product may cause moderate to severe irritation. Alterations in vision, for example, reduced acuity and suppressed colour vision, have been documented following exposure to mixed solvents. (1)

MDI: MDI may cause no irritation or slight eye irritation based on animal information. (1)

INGESTION

It is unlikely that toxic amounts of this product would be ingested with normal handling and use. If significant amount of the product were ingested, symptoms as described for inhalation might occur. This product may cause irritation, mouth and throat burns and abdominal pains. The product can be aspirated (inhaled) into the lungs during ingestion or vomiting. Aspiration of even a small amount of liquid could result in a life threatening accumulation of fluid in the lungs. Severe lung damage (oedema), respiratory failure, cardiac arrest and death may result. (1)

Effects of Long-Term (Chronic) Exposure

NERVOUS SYSTEMS

Toluene: Long-term exposure to solvent may cause harmful effects on the nervous system, but there is not enough information available to draw firm conclusions. Symptoms such as headaches, irritability, depression, insomnia, agitation, extreme tiredness, tremors, and impaired concentration and short-term memory have been reported following long-term occupational exposure to solvents. This condition is sometimes generally referred to as "organic solvent syndrome". Numerous studies of rotogravure printers, painters and rubberized-matting workers with chronic exposure to toluene are inconclusive about chronic CNS damage. Some studies report changes such as memory loss, sleep disturbances, loss of ability to concentrate, or incoordination, while others report no effects. Recent studies using sensitive neurobehavioral tests have shown altered scores for exposed workers but whether or not these indicate CNS damage is not clear. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

SENSITIZATION

MDI: Respiratory sensitization has developed in people working with isocyanates. 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 isocyanates (for MDI, 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, difficult 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 isocyanates 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 to isocyanates. Others may recover fully and may gradually lose their sensitivity within several years. Isocyanates 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, without having previous exposure to this chemical. Exposure to isocyanates is likely to cause aggravation to individuals with existing respiratory disease, such as chronic bronchitis and emphysema. (1)

TARGET ORGANS

Toluene: A number of case reports and occupational studies have suggested that liver and kidney damage may result from long-term occupational exposure to toluene. However, it is not possible to attribute these effects directly to a specific exposure because generally

there was exposure to other chemicals at the same time, particularly other solvents, and there was no information provided on the exposure levels or duration of exposure. There is some evidence to suggest that long-term exposure to toluene may affect hearing. However, the limited information available does not allow a conclusion to be drawn. Although minor changes in blood parameters have been observed, it is generally accepted that toluene does not cause significant blood disorders. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

CARCINOGENICITY

Toluene: There have been several human population studies which have examined the possible relationship between toluene exposure and cancer. Cancers of most sites were not significantly associated with toluene exposure in any study. The International Agency for Research on Cancer (IARC) has concluded there is inadequate evidence for the carcinogenicity of toluene in humans. There is evidence suggesting a lack of carcinogenicity to o-toluene in experimental animals. 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)

MDI: The risk of cancer associated with exposure to isocyanates has been examined in 4 human population studies. No strong association or consistent pattern has been observed. It is not possible to draw any conclusions from this case report. The International Agency for Research on Cancer (IARC) has determined there is inadequate evidence for the carcinogenicity of MDI or polymeric MDI in humans. There is limited evidence for the carcinogenicity of a mixture containing MDI and polymeric MDI in experimental animals. IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans (Group 3). ACGIH has not assigned a carcinogenicity designation to this chemical. NTP has not listed this chemical in its report on carcinogens. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available. IARC has not evaluated the carcinogenicity of these chemicals. ACGIH has not listed these chemicals. NTP has not listed these chemicals in its report on carcinogens. (1)

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Toluene: Toluene is a developmental toxicity hazard, based on information obtained from animal studies. A detailed review of toluene and its potential to cause teratogenicity/embryotoxicity in occupational situations has been published. This review concludes that although many occupational studies have evaluated general solvent exposure and pregnancy outcomes, few studies have specifically investigated toluene exposure. Most of these studies have involved exposure to solvents in general or to certain solvent classes, with toluene exposure addressed as a co-exposure or identified as a common exposure in a sub-group. Outcomes of concern included spontaneous abortion (miscarriage) and teratogenicity (congenital malformations). These studies do provide evidence suggesting there may be an association between occupational toluene exposure and the occurrence of spontaneous abortions. Nevertheless, further research is required before it will be possible to conclude that there is a causal relationship between toluene exposure and an increased incidence of spontaneous abortions. Concerns about the potential teratogenicity of toluene in humans have also arisen due to effects (usually renal/urinary) seen in solvent abuse cases (glue-sniffing). These extreme exposures to toluene, as well as other confounding factors such as tobacco and alcohol abuse, are not relevant to occupational situations. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

REPRODUCTIVE TOXICITY

Toluene: No conclusions can be drawn based on the available human information. Reproductive effects have not been observed in animal studies. A review of toluene and its potential to cause reproductive toxicity in workers has been published. Three cross-sectional studies evaluated fertility in women exposed to toluene or in the wives of exposed men. No conclusions can be drawn. Another study suggests that menstrual function is not affected by exposure to toluene. Another report describes testicular atrophy and reduced spermatogenesis in one man who abused toluene for 10 years. This extreme exposure situation is not relevant to occupational exposures. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

MUTAGENICITY

Toluene: Results from the available human studies are inconclusive. Both positive and negative results have been obtained in human studies, but no studies were carried out with toluene exposure only, or with adequate control of other factors. (1)

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)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS

Toluene: Exposure to other solvents such as benzene, xylene and ethanol (alcohol) slows the rate of clearance of toluene from the body, thereby enhancing the toxicity of toluene. The toxic effects of this material can probably be increased by the consumption of alcohol. No specific information is available, but alcohol increases the toxicity of related chemicals such as toluene. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

POTENTIAL FOR ACCUMULATION

Toluene: Toluene is readily absorbed by inhalation or ingestion and tends to be deposited more in tissues that are fatty or have a rich blood supply (e.g. brain, liver, and kidney) and excreted by the kidneys in the urine. It can also be exhaled unchanged. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No human or animal information is available.

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: Flammable Class 1B (NFPA)
FLASH POINT: 4°C
EXPLOSION DATA: Sensitivity to mechanical impact: No
Sensitivity to static charge: Can accumulate static charge by flow.

AUTO-IGNITION TEMPERATURE: Not available
FLAMMABILITY LIMITS IN AIR: (% in volume) Not available

FIRE AND EXPLOSION HAZARDS

This product may be ignited by heat, sparks or flames. 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 as carbon oxide, nitrogen oxide, trace of hydrocyanic acid.

FIRE FIGHTING INSTRUCTIONS

Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Approach fire from upwind. Evacuate area and fight fire from maximum distance. Always stay away from containers because of the high risk of explosion. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Stop leak before attempting to put out the fire. 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

Dry chemical powder, CO₂, foam.

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 absorbent material, dry earth, sand or other non-combustible material and transfer to containers. Sweep or shovel into containers with lids, use clean non-sparking tools 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 this product according to environmental regulations.

SECTION VII: HANDLING AND STORAGE

HANDLING

This product is very flammable and toxic. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing mist, vapour or dust. Wash thoroughly after handling. Persons with antecedents of asthma, allergies, chronic or periodic respiratory disorders should never manipulate this product. 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. 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 empty containers.

STORAGE

Store containers in a cool well-ventilated area out of direct sunlight and away from humidity, 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 PVA® or Silvershield®.

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:	Paste
ODOUR AND APPEARANCE:	Black paste with 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):	0.96 kg/L
SOLUBILITY IN WATER (20°C):	Not soluble
VOLATILE ORGANIC COMPOUND CONTENT (V.O.C.):	150 g/L
VISCOSITY:	15 000 centipoises

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. Exposed to high temperatures this product can emit dangerous decomposition products, such as fumes, carbon oxide, nitrogen oxide, hydrocyanic acid, amines and alcohols.

INCOMPATIBILITY

Keep away from oxidizing agent and from highly acid and basic materials to avoid exothermic reactions.

HAZARDOUS DECOMPOSITION PRODUCTS

This product slowly reacts with water and causes an emanation of carbonic gas which would lead to pressure increasing in closed container.

HAZARDOUS POLYMERISATION: None

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Toluene: (1)

LC50 (rat): 7 350 ppm (4-hour exposure, inhalation)

LD50 (oral, rat) 2 600-7 500 mg/kg

LD50 (dermal, rabbit): 12 225 mg/kg

MDI: (1)

LC50 (rat): 490 mg/m³ (4-hour exposure; whole-body; aerosol; particle size: 95% less than 5 microns) (polymeric MDI containing approximately 50% 4,4'-MDI)

LD50 (oral, rat): > 10 000 mg/kg

LD50 (dermal, rabbit): > 10 000 mg/kg

Stannane dibutylbis[(1-oxododecyl)oxy]:

LC50 (rat): No information available (4-hour exposure, inhalation)

LD50 (oral, rat): 450 mg/kg

LD50 (dermal, rabbit): No information available

Asphalt: No information available.

EYE IRRITATION

MDI: MDI has caused no irritation or slight irritation of the eyes. In a well-conducted study, 0.1 ml of "generic" MDI was instilled into the conjunctival sac of one eye of each of three female rabbits. The treated eye was rinsed with saline 24 hours after instillation. MDI was not irritating (the irritation index for the cornea, iris, and conjunctiva (redness and swelling) was 0.0 for all animals. (1)

SKIN IRRITATION

MDI: MDI is a severe skin irritant. In a study conducted according to OECD guidelines, application of 0.5 ml undiluted "generic" MDI, to intact skin under a partial cover, for 4 hours caused severe irritation in rabbits (maximum average score at 7 days: erythema: 3.2/4; oedema: 3.3/4; average scores for 24, 48 and 72 hours: erythema: 2.1/4; oedema: 1.4/4; irritation index for erythema: 2.1/4; for oedema: 1.5/4). In 2/6 rabbits a marked lesion was not reversed within 14 days. This study was evaluated as reliable without restriction. (1)

Effects of Short-Term (Acute) Exposure

INHALATION

Toluene: The major effect of toluene is on the CNS. Studies with rats have shown that up to approximately 1 000 ppm causes excitation and increased activity. At approximately 2 000 ppm, there is CNS depression with drowsiness, incoordination and unconsciousness. Death at higher concentrations is from respiratory failure. Animal studies have indicated that toluene is not directly toxic to the cardiovascular system. Recovery is rapid following cessation of exposure. Studies indicate no permanent damage to body systems. Studies in rats have shown hearing loss at high frequencies following toluene exposure both by inhalation (threshold concentration between 700 and 1 000 ppm) and orally (620 mg/kg/day for 4 weeks). This effect has also been observed in a mouse strain that had a genetic predisposition to hearing loss. (1)

MDI: MDI has a very low vapour pressure and it is difficult to achieve vapour concentrations necessary for inhalation toxicity testing. Therefore, inhalation toxicity studies have focused on the effects of the aerosol. 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)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

EYE IRRITATION

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

MDI: MDI has been reported to cause slight eye irritation. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

SKIN IRRITATION

Toluene: Toluene is a moderate skin irritant. (1)

MDI: MDI has been reported to cause slight to moderate irritation. The sensitizing potency of MDI was investigated. MDI was less potent than hexamethylene diisocyanate (HDI) and dicyclohexylmethane diisocyanate (HMDI), but more sensitizing than toluene diisocyanate (TDI). Cross reactivity was observed between MDI and HDI, HMDI and TDI. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

SKIN SENSITIZATION

MDI: The sensitizing potency of MDI was investigated using the mouse ear-swelling test (MEST). The dose required to sensitize 50% of the animals was 0.73 mg/kg. (1)

INGESTION

MDI: Rats were given daily doses of 4.3 to 5 g/kg for 5 days. The only effect was a slight enlargement of the spleen in 2 of 5 rats. (1)

Effects of Long-Term (Chronic) Exposure

INHALATION

Toluene: Daily inhalation by rats of toluene concentrations below 400 ppm for up to 24 months resulted in no significant toxicity. Evidence for chronic CNS neurotoxicity is inconclusive. Numerous studies on rats and mice have shown reduced performance on some neurobehavioral tests but not others, both during and after toluene inhalation exposures (usually at greater than 500 ppm). (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

INGESTION

Toluene: No significant toxicity was seen after oral administration of up to 590 mg/kg to female rats for up to six months. (1)

MDI: Rats were given daily doses of 4.3 to 5 g/kg for 5 days. The only effect was a slight enlargement of the spleen in 2 of 5 rats. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

CARCINOGENICITY

Toluene: IARC has concluded there is inadequate evidence for the carcinogenicity of toluene in experimental animals. (1)

MDI: There is no animal information on the carcinogenicity of MDI itself. In one study, polymeric MDI containing 44.8-50.2% monomeric MDI was tested for carcinogenicity by inhalation in rats. An increased incidence of lung tumours was observed. IARC has determined there is limited evidence for the carcinogenicity of a mixture containing monomeric and polymeric MDI to experimental animals. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Toluene: Toluene does cause developmental effects in animals, based on fetotoxicity (reduced foetal weight), behavioural effects (effects on learning and memory) and hearing loss (in males) observed in the offspring of rats exposed by inhalation to 1200 or 1800 ppm toluene. These effects were observed in the absence of maternal toxicity. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

REPRODUCTIVE TOXICITY

Toluene: No adverse effects on reproduction were observed in several studies on both rats and mice, even at maternally toxic exposures. (1)

Asphalt, MDI, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

MUTAGENICITY

Toluene: There is insufficient information available to conclude that toluene is mutagenic. There is some evidence that toluene can cause chromosome damage in vivo when administered to mice by injection, although conflicting results have been obtained and this route of exposure is not considered relevant to occupational situations. (1)

MDI: It is not possible to conclude that MDI is mutagenic. MDI formed low-level DNA adducts in female rats exposed to 0.7-2.0 mg/m³ for 1 year (17 hours/day, 5 days/week). There are no studies available using cultured animal cells. MDI has produced mostly negative results in short-term bacteria tests (Salmonella typhimurium). MDI has given positive results in 2 strains of Salmonella typhimurium (TA98 and TA100), with metabolic activation. (1)

Asphalt, Stannane dibutylbis[(1-oxododecyl)oxy]: No information available.

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): Class 3

IDENTIFICATION NUMBER: UN 1133

SHIPPING NAME: Adhesive

PACKING GROUP: II

CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS

B2: Flammable material (flash point inferior to 37.8°C)

D2A: Material causing other very toxic effects (teratogenicity and embryotoxicity of toluene and respiratory sensitization of MDI)

D2B: Material causing other toxic effects (irritant effects of toluene and skin sensitization of MDI).

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).

OSHA 29 CFR 1910.1200: This product meets criteria for hazardous material as defined by 29 CFR 1910.1200

HMIS (USA):		NFPA (USA):	
Health	2	Health	2
Flammability	2	Flammability	2
Physical Hazard	1	Instability	1
Protective equipment	B	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:

- CHEMINFO (2011) Canadian Centre of Occupational Health and Safety, Hamilton (Ontario) Canada
- Material Safety Data Sheet of the supplier

Code of MSDS: CA U DRU SS FS 022
For more information: 1 800 567-1492

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

Justification of the update:

- Update of data about MDI. (Sections III and XI)
- The codification of Reactivity (HMIS) has been replaced by Physical Hazard and Reactivity (NFPA) has been replaced by Instability. (Section XV)
- New format

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.

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 or 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.