

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: Adhesives.

Formula number: 724.1

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

Distributors: Soprema Inc.
44955 Yale Road West
Chilliwack (BC) V2R 4H3
CANADA
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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!!!

Black liquid with strong solvent odour. CAUTION! This product and its vapours are highly flammable. The vapours are heavier than air and may spread long distances. Distant ignition (such as a pilot light, and any object that sparks, such as an electric motor) and flash back are possible. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Closed containers may rupture and explode under heat of fire.

May cause skin, eye and respiratory tract irritation. 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). Toluene is a developmental toxicity hazard, based on information obtained from animal studies. Use of this product in confined space area represent fire and health and safety risks.

SECTION II: COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Toluene	108-88-3	30-60	20 ppm	Not established
Asphalt	8052-42-4	15-40	0.5 mg/m ³	Not established

SECTION III: POTENTIAL HEALTH EFFECTS

Effects of Short-Term (Acute) Exposure

SKIN CONTACT

Toluene:

Toluene is a moderate skin irritant, based on animal evidence. Prolonged contact may cause dermatitis (dry, red skin). Liquid toluene is absorbed through the skin slowly. Therefore, harmful effects are not expected by this route of exposure. Despite widespread use of toluene, there are no reports of skin sensitization. (1)

Asphalt:

Asphalt may cause skin irritation. (2)

EYE CONTACT

Toluene:

Toluene is a mild eye irritant, based on animal evidence. Very short exposure (3 to 5 minutes) to the vapour has caused slight eye irritation at 300 ppm. Longer exposures (6 to 7 hours) to concentrations above 100 ppm have also caused slight irritation. Alterations in vision, for example, reduced acuity and suppressed colour vision, have been documented following exposure to mixed solvents. It is not possible to attribute these effects to toluene directly. (1)

Asphalt:

Asphalt may cause eyes irritation. (2)

INHALATION

Toluene:

The main effect of inhaling toluene vapour is on the CNS. 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 has caused symptoms similar to drunkenness (giddiness), numbness, and mild nausea; over 500 ppm has caused mental confusion and incoordination. At higher concentrations (estimated at 10 000 ppm) further depression of the CNS can result in unconsciousness and death. Most serious incidences of exposure have occurred when the vapour has accumulated in confined spaces. (1)

Asphalt:

Asphalt exposure is not expected by this route.

INGESTION

Toluene:

Toluene is readily absorbed following ingestion producing CNS depression. Symptoms will be similar to those described for inhalation. Toluene may be aspirated, which is the inhalation of a chemical into the lungs, during ingestion or vomiting. Severe lung irritation, damage to the lung tissues and death may result. Ingestion is not a typical route of occupational exposure. (1)

Asphalt:

No information available.

Effects of Long-Term (Chronic) Exposure

Toluene:

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. Most studies reporting kidney damage in people result from solvent abuse (for example, glue-sniffing). These extreme exposures are not relevant to occupational situations. In epidemiological studies on workers exposed long-term to levels up to 200 ppm, there was no clear evidence of kidney damage. Occupational exposure to up to 500 ppm toluene has not been associated with liver effects. 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:

No information 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. Stomach cancer mortality, lung cancer rates and colorectal cancers were evaluated in some studies, but not others. Considering the multiple exposures in most studies and the inconsistencies in findings, it is not possible to conclude that toluene exposure is associated with cancer in humans. The International Agency for Research on Cancer (IARC) has concluded there is inadequate evidence for the carcinogenicity of toluene in humans. 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)

Asphalt:

IARC has concluded that this chemical is not classifiable as to its carcinogenicity to humans. (2)

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Toluene:

Toluene is a developmental toxicity hazard, based on information obtained from animal studies. Fetotoxicity (reduced foetal weight), behavioural effects (effects on learning and memory) and hearing loss (in males) have been observed in the offspring of rats exposed by inhalation to 1 200 or 1 800 ppm toluene. These effects were observed in the absence of maternal toxicity. 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). (1)

Asphalt:

There is no human or animal information 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. (1)

Asphalt:

There is no human or animal information 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)

Asphalt:

There is no information 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. (1)

Asphalt:

There is no information 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, kidney, fat). Toluene is metabolized in the liver and excreted by the kidneys in the urine. It can also be exhaled unchanged. (1)

Asphalt:

There is no information 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 liquid (Class 1B) NFPA
EXPLOSION DATA: Sensitivity to mechanical impact: No.
Sensitivity to static charge: Can accumulate static charge by flow.

FLASH POINT: 4°C (ASTM D93)
AUTO-IGNITION TEMPERATURE: Not available
FLAMMABILITY LIMITS IN AIR: (% volume) 1.2 – 7.1 (toluene)

FIRE AND EXPLOSION HAZARDS

This product and its vapours will readily ignite under the action of 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, aldehydes, ketone, acrolein, halogenated compound.

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 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, CO₂ powder, sand, chemical powder.

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 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

This product and its vapours are highly flammable and toxic. 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. 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. Use of this product in confined space area represent fire and health and safety risks.

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 polyvinyl alcohol (PVA) or Viton.

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: Black liquid with strong solvent odour
VAPOUR DENSITY (air = 1): 3.1
EVAPORATION RATE (Butyl acetate = 1): 2,24 (toluene)
BOILING POINT (760 mm Hg): Not available

FREEZING POINT: Not available
SPECIFIC GRAVITY (H₂O = 1): 0.91 kg/ml
SOLUBILITY IN WATER (20°C): Insoluble
VOLATILE ORGANIC COMPOUND CONTENT (V.O.C): 587 g/L
VISCOSITY: 50 centipoises (Visco Brookfield, 25°C)

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.

CONDITIONS OF REACTIVITY: Avoid excessive heat

INCOMPATIBILITY: Strong oxidizing and reducing agents, acids, bases, halogenated solvents.

HAZARDOUS DECOMPOSITION PRODUCTS: No evidence

HAZARDOUS POLYMERISATION: None

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Toluene: (1)

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

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

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

Asphalt: Not available

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 2000 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)

Asphalt:

No information available.

EYE IRRITATION

Toluene:

Toluene is a mild eye irritant. (1)

Asphalt:

There is no information available.

SKIN IRRITATION

Toluene:

Toluene is a moderate skin irritant. (1)

Asphalt:

No information available.

Isobutane (rabbit):

Isobutane may cause moderate and temporary irritation. (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:
There is 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)

Asphalt:
There is no information available.

CARCINOGENICITY

Toluene:
IARC has concluded there is inadequate evidence for the carcinogenicity of toluene in experimental animals. Toluene was not carcinogenic in mice and rats exposed by inhalation to up to 1 200 ppm for 24 months. (1)

Asphalt:
There is 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 1 200 or 1 800 ppm toluene. These effects were observed in the absence of maternal toxicity. (1)

Asphalt:
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:
There is no information available.

MUTAGENICITY

Toluene:
There is insufficient information available to conclude that toluene is mutagenic.(1)

Asphalt:
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: None
CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS

Class B2: Flammable liquid (flash point below 37,8°C).
Class D2A: Very toxic material causing other effects (toluene has teratogenicity and embryotoxicity effects).
Class D2B: Toxic material causing other effects (toluene and asphalt have irritant effects).

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:	3	Flammability:	3
Physical hazard:	0	Instability:	0
Protective equipment:	B	Specific hazard:	0

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 144
For 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 MSDS.

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.