

# MATERIAL SAFETY DATA SHEET

# SBS MODIFIED BITUMEN MASTIC

*Disponible en français*

WHMIS	PROTECTIVE CLOTHING	TRANSPORT OF DANGEROUS GOODS
		 <p style="text-align: right;"><b>ADHESIVE</b> <b>Class 3</b> <b>UN1133</b> <b>P.G. : III</b></p>

## SECTION I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product name:</b>	SBS Modified Bitumen Mastic	
<b>Use:</b>	This product compliment bituminous waterproofing membranes and is used as jointing mastic, caulking material and joint filler.	
<b>Code of MSDS:</b>	CA U DRU SS FS 042 A	
<b>Formula Number:</b>	Not available	
<b>Revision date:</b>	November 10, 2004	
<b>Revised by:</b>	Marie-Claude Fontaine, Health and safety Supervisor (800) 567-1492 <a href="mailto:mcfontaine@soprema.ca">mcfontaine@soprema.ca</a>	
<b>Manufacturer:</b>	Soprema Canada 1675 Haggerty Street Drummondville (Quebec) J2C 5P7 CANADA Tel.: (819) 478-8163	
<b>Distributors:</b>	Soprema Inc. 44955 Yale Road West Chilliwack (BC) V2R 4H3 CANADA Tel.: (604) 793-7100	Soprema USA 310 Quadral Drive Wadsworth (Ohio) 44281 UNITED STATES Tel.: (800) 356-3521
<b>In case of emergency:</b>	<p>SOPREMA (8:00am to 5:00pm): (800) 567-1492</p> <p>CANUTEC (Canada) (24h.): (613) 996-6666</p> <p>CHEMTREC (USA) (24h.): (800) 424-9300</p> <p>Poison Control Centre: Consult local telephone directory</p>	

### EMERGENCY OVERVIEW!!!

Black paste with solvent odour. **CAUTION!** This product and its vapours are 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.

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).

**SECTION II. COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS**

NAME	CAS #	% WEIGHT	EXPOSURE LIMIT (ACGIH)	
			TLV-TWA	TLV-STEL
Asphalt	8052-42-4	30-60	5 mg/m <sup>3</sup>	Not established
Xylene	1330-20-7	10-30	100 ppm	150 ppm

**SECTION III. POTENTIAL HEALTH EFFECTS***Effects of Short-Term (Acute) Exposure***INHALATION:**

Inhalation of vapours of xylene can occur while using the product. The exposition to vapours of xylene over exposure limits may cause irritation of the respiratory system and central nervous system depression (headaches, dizziness, nausea, tiredness, confusion and coma).

**Xylene:**

The main effect of inhaling xylene vapour is depression of the central nervous system (CNS), with symptoms such as headache, dizziness, nausea and vomiting. Volunteers have tolerated 100 ppm, but higher concentrations become objectionable. Irritation of the nose and throat can occur at approximately 200 ppm after 3 to 5 minutes. Exposures estimated at 700 ppm have caused nausea and vomiting. Extremely high concentrations (approximately 10000 ppm) could cause incoordination, loss of consciousness, respiratory failure and death. In some cases, a potentially fatal accumulation of fluid in the lungs (pulmonary oedema) may result. Symptoms of pulmonary oedema, such as shortness of breath and difficult breathing, may be delayed several hours after exposure. However, these effects are rarely seen since xylene is irritating and identifiable by odour at much lower concentrations. The only reported death resulted from exposure to xylenes (unspecified isomer composition and unknown concentration) in a confined space. Reversible liver and kidney damage has been reported in cases of severe xylene exposure. Results of short-term studies on human volunteers indicate that xylenes can cause neurobehavioral effects such as impaired short-term memory and reaction time (300 ppm mixed xylenes, with exercise) and alterations in body balance (65 to 400 ppm m-xylene). Exposure to 300 or 400 ppm mixed xylenes or 65 to 150 ppm p-xylene have not had similar effects. This variation in results is probably due to differences in the effects being studied, exposure conditions, development of tolerance and total xylene uptake (which increases during exercise). (1)

**Asphalt:**

Exposure is not expected by this route of entry under normal product use.

**SKIN CONTACT:**

Frequent or prolonged contacts can remove the natural fat from the skin and may cause redness, skin irritation and dermatitis.

**Xylene:**

Studies with xylene isomers have shown irritation, redness and a burning sensation can result from contact. These effects are reversible shortly (usually within 1 hour) after the contact stops. Xylene liquid or vapour can be absorbed through the skin, but not as readily as when inhaled or ingested. Significant harmful effects are not expected by this route of exposure. (1)

**Asphalt:**

Asphalt may cause irritation to the skin. (2)

**EYE CONTACT:**

The vapours may cause eye irritation with tearing and discomfort, redness and pain. Eye contact with the product may cause moderate irritation.

**Xylene:**

The liquid is probably a mild irritant, based on animal information. Eye irritant has been reported at vapour levels as low as 200 ppm. Corneal vacuoles (pockets of fluid or air in the cornea) have also been reported following exposure to undefined vapour concentrations. This effect was reversible within 8 to 11 days for 7 of 8 workers. (1)

**Asphalt:**

Asphalt may cause eye irritation. (2)

**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)

**Xylene:**

Based on animal information, xylene is only slightly toxic by ingestion. Ingestion of large amounts is likely to cause CNS effects such as dizziness, nausea and vomiting. In one case, ingestion of food probably contaminated with xylene caused pulmonary oedema, liver impairment and coma. The man recovered within 2 hours after treatment. Ingestion is not a common route of occupational exposure. Although there are no case reports, xylene may be aspirated, based on its physical properties (viscosity and surface tension). Aspiration is the inhalation of a material into the lungs during ingestion or vomiting. Severe lung irritation, damage to the lung tissues and death may result. (1)

**Asphalt:**

No information available.

## SECTION III. POTENTIAL HEALTH EFFECTS

### *Effects of Long-Term (Chronic) Exposure*

#### **SKIN CONTACT:**

##### ***Xylene:***

Repeated contact can produce dermatitis (dryness and cracking) due to degreasing action. Skin sensitization was not produced in any of 24 volunteers. There is one case report of a person developing an allergic skin reaction (contact urticaria) following exposure to xylene (unspecified composition) vapour. The person subsequently tested positive in a patch test. No information was provided regarding previous history of allergies. No conclusions can be drawn regarding the potential for xylene to produce allergic skin reactions, based on this single case report. (1)

##### ***Asphalt:***

Repeated or prolonged contact may cause irritation. (2)

#### **INHALATION:**

##### ***Xylene:***

See effects described below.

##### ***Asphalt:***

Exposure is not expected by this route of entry under normal product use.

#### **NERVOUS SYSTEM EFFECTS:**

##### ***Xylene:***

Long-term xylene exposure may cause harmful effects on the central 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 xylene and other solvents. This condition is sometimes generally referred to as "organic solvent syndrome". Unfortunately, there is very little information available which isolates xylenes from other solvent exposures in the examination of these effects. Other study deficiencies include inadequate reporting on the duration of exposure and the exposure levels, and poor matching of controls. In a recent study, 175 employees were exposed to an average xylene concentration of 21 ppm for an average of 7 years. Subjective symptoms such as anxiety, forgetfulness, inability to concentrate and dizziness were reported. Xylenes accounted for greater than 70% of the total exposure. This study is also limited by factors such as those described above. (1)

##### ***Asphalt:***

No information available.

#### **BLOOD EFFECTS:**

##### ***Xylene:***

Historical reports sometimes associate xylene exposure with certain blood effects, including leukemia, which are now known to be caused by benzene. Uncontaminated xylene is not known to cause these effects. Reduced blood platelet counts were observed in 12 of 27 men exposed to mixed xylene (unspecified composition) at a level up to 200 ppm. When exposure stopped, platelet counts returned to normal. There is insufficient information to draw any conclusions from this study. (1)

##### ***Asphalt:***

No information available.

#### **LIVER AND KIDNEY EFFECTS:**

##### ***Xylene:***

A number of case reports and occupational studies have suggested that liver and kidney damage may result from long-term occupational exposure to xylene. However, it is not possible to attribute these effects directly to xylene 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. In a recent study, 175 employees were exposed to a mean xylene concentration of 21 ppm for an average of 7 years. Liver and kidney effects were not reported. Xylenes accounted for greater than 70% of the total exposure. (1)

##### ***Asphalt:***

No information available.

#### **CARCINOGENICITY:**

##### ***Xylene:***

Xylene has been mentioned as an exposure in 4 case-control studies. Cancers at most sites were not significantly associated with xylene exposure in any study. Most results were based on small numbers, most studies involved exposure to other potentially harmful substances, and the consistency of findings is weak. Therefore, the International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of xylene in humans. No conclusions can be drawn from the available animal information. 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)

##### ***Asphalt:***

The International Agency for Research on Cancer (IARC) has concluded that this chemical is not classifiable as to its carcinogenicity to humans. (2)

### SECTION III. POTENTIAL HEALTH EFFECTS

#### TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY:

**Xylene:**  
Several human population studies have suggested a link between exposure to organic solvents (including xylene) and increased occurrence of miscarriages or birth defects in children. However, in the majority of cases, there was exposure to a variety of solvents at the same time, exposures were ill-defined, and the number of cases examined was small. Overall, no conclusions can be made on the effects of exposure to xylenes on the unborn child because of the inadequacy of the available information. Xylene (mixed isomers) has produced fetotoxic effects (delayed ossification and behavioural effects) in animals, in the absence of maternal toxicity. Animal information suggests that xylenes are not teratogenic or embryotoxic at exposure levels that are not harmful to the mother. (1)

**Asphalt:**  
No information available.

#### REPRODUCTIVE TOXICITY:

**Xylene:**  
An increase in menstrual disorders has been reported in women exposed to organic solvents such as benzene, toluene and xylenes. It is not possible to attribute these effects to xylenes in particular. The limited animal information available suggests that xylenes do not cause reproductive effects. (1)

**Asphalt:**  
No information available.

#### MUTAGENICITY:

**Xylene:**  
There have been a few studies investigating the mutagenic potential of mixed xylenes (undefined composition) in workers exposed occupationally. In one study, xylene contained ethylbenzene, and in the other there was co-exposure to other solvents including benzene. These studies [induction of sister chromatid exchanges and chromosomal aberrations in human lymphocytes (white blood cells)] were negative. Negative results were also obtained in a study where volunteers were exposed to 40 ppm mixed xylenes over two weeks. However, no conclusions can be drawn because of limitations such as small study populations and exposure to other chemicals at the same time. There were no increases in chromosome aberrations and sister chromatid exchanges without metabolic activation, in cultured human lymphocytes. (1)

**Asphalt:**  
No information available.

#### TOXICOLOGICALLY SYNERGISTIC MATERIALS:

**Xylene:**  
Exposure to related solvents, such as benzene, toluene and ethanol (alcohol) slows the rate of clearance of xylenes from the body, thus enhancing its toxic effects. Exposure to xylene in combination with other solvents has had an additive effect with respect to harming the hearing of rats. (1)

**Asphalt:**  
No information available.

#### POTENTIAL FOR ACCUMULATION:

**Xylene:**  
The three xylene isomers are readily absorbed by inhalation and ingestion and are widely distributed throughout the body. A small amount may be absorbed through the skin. Xylenes are largely broken down by the liver and most of the absorbed material is rapidly excreted in the urine as breakdown products. Small amounts are eliminated unchanged in the exhaled air. There is low potential for accumulation. (1)

**Asphalt:**  
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 Class II (NFPA)

**EXPLOSION DATA:** Sensitivity to mechanical impact: No  
Sensitivity to static charge: Can accumulate static charge by flow.

**FLASH POINT:** 24°C (ASTM D-93)

**AUTO-IGNITION TEMPERATURE:** 527°C (xylene)

**SECTION V. FIRE-FIGHTING MEASURES****INFLAMMABILITY LIMITS IN AIR:** (% in volume) 1 – 7 (xylene)**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, CO<sub>2</sub>, 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 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:**

Anti-alcohol or universal foam, dry chemical powder, CO<sub>2</sub>, 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 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 this product according to environmental regulations.

**SECTION VII. HANDLING AND STORAGE****HANDLING:**

This product is 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. 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:** Paste**ODOR AND APPEARANCE:** Black paste with solvent odour**ODOR THRESHOLD:** Not available**VAPOR DENSITY (air = 1):** Heavier than air**EVAPORATION RATE (Butyl acetate = 1):** 0.7 (xylene)**BOILING POINT (760 mm Hg):** Not available**FREEZING POINT:** Not available**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.11 kg/L**SOLUBILITY IN WATER (20°C):** Insoluble

**SECTION IX. PHYSICAL AND CHEMICAL PROPERTIES**

<b>VOLATILE ORGANIC COMPOUND (V.O.C.) CONTENT:</b>	190 g/L
<b>VISCOSITY:</b>	340 1/10 mm (Cone penetrability)

**SECTION X. STABILITY AND REACTIVITY**

<b>STABILITY:</b>	This material is stable.
<b>CONDITIONS OF REACTIVITY:</b>	Avoid excessive heat
<b>INCOMPATIBILITY:</b>	Basis, acids and strong oxidizing agents.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	None identified.
<b>HAZARDOUS POLYMERIZATION:</b>	None

**SECTION XI. TOXICOLOGICAL INFORMATION****TOXICOLOGICAL DATA:****Xylene (1):**

LC50 (rat):	6350 ppm (4-hour exposure) (unspecified isomers and ethylbenzene)
LD50 (oral, rat):	5400 mg/kg
LD50 (dermal, rabbit):	12180 mg/kg; greater than 1700 mg/kg (mixed xylenes – undefined composition)

**Asphalt:**

Not available

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

The major effect of xylene inhalation is on the central nervous system (CNS). There is initial excitation followed by depression, drowsiness, incoordination and unconsciousness at approximately 2000 ppm. Death at higher concentrations is from respiratory failure due to CNS depression and/or accumulation of fluid in the lungs (pulmonary oedema). Irritation of the respiratory tract, causing a decrease in the respiratory rate, has been reported. The RD50, the concentration which produces a 50% decrease in the respiratory rate of mice, is 2440 ppm. This concentration is expected to produce intolerable eye, nose and throat irritation (sensory irritation) in humans. Behavioural effects such as effects on learned behaviours and avoidance conditioning have been observed in animals following short-term inhalation. Hearing loss, mainly at mid-frequencies, has been observed in rats following short-term exposures (800 ppm and above for 6 weeks or 1450 ppm for 3 days) to xylene. A no-effect level was not determined and reversibility was not assessed. (1)

**Asphalt:**

No information available.

**EYE IRRITATION:****Xylene:**

Application of xylene caused mild irritation and very slight, transient corneal damage in rabbits. Vapour exposure (unknown concentration) to mixed xylenes (undefined composition) resulted in fine vacuoles in the corneas of cats which disappeared in 24 hours.(1)

**Asphalt:**

No information available.

**SKIN IRRITATION:****Xylene:**

A single application of an unspecified amount of xylenes (unspecified composition) caused irritation and swelling in rabbits and guinea pigs. Application of 0.5 ml of the xylene mixture (unspecified composition) to rabbit skin for 24 hours caused moderate irritation. Repeated application, 10-20 times over a 2 to 4 week period, of mixed xylene to rabbit skin caused moderate to marked irritation, swelling and tissue death. (1)

**Asphalt:**

No information available.

***Effects of Short-Term (Acute) Exposure*****TARGET ORGANS:****Xylene:**

In general, animal studies have provided little evidence of damage to the liver, kidney or lungs, nor any other significant long-term health effects following long-term inhalation. No effects were observed following exposure of rats or dogs to mixed xylenes up to 810 ppm, 6 hours/day for 13 weeks. Some studies have shown subtle, reversible blood effects at concentrations above 1000 ppm. However, xylenes have not been shown to cause benzene-like cancer of the blood. No important findings were observed following oral administration of 1000 mg/kg (rats) and 2000 mg/kg (mice) of mixed xylenes for 90 days. Similarly, only reduced body weight was observed in male rats fed 500 mg/kg of the same mixed xylene for 103 weeks. No significant effects were noted in mice fed up to 1000 mg/kg for 103 weeks. (1)

**Asphalt:**

No information available.

**SECTION XI. TOXICOLOGICAL INFORMATION****CARCINOGENICITY:**

**Xylene:**  
Oral studies of mixed xylenes in rats (up to 500 mg/kg for 103 weeks) and mice (up to 1000 mg/kg for 103 weeks) found no treatment-related increase in the incidence of tumours. In another carcinogenicity study, xylene (unspecified composition) was administered to rats (up to 500 mg/kg for 104 weeks). The reporting of this study was so poor that it is not possible to evaluate the results. A number of studies have investigated whether exposure to xylenes causes skin cancer. The conduct and reporting of these studies do not allow any conclusions to be drawn. The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for carcinogenicity of xylene in animals. (1)

**Asphalt:**

No information available.

**REPRODUCTIVE EFFECTS:**

**Xylene:**  
No harmful reproductive effects were noted in males or females when rats were exposed to up to 500 ppm mixed xylenes in a single generation study. No firm negative conclusions can be drawn from this study because the maximum tolerated dose may not have been achieved. Ingestion of mixed xylenes for up to 2 years caused no observable adverse effects in the reproductive organs of male and female rats (up to 500 mg/kg/day) or mice (up to 1000 mg/kg/day). (1)

**Asphalt:**

No information available.

**TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY:**

**Xylene:**  
In three studies, fetotoxic effects (delayed ossification and behavioural effects) were observed in the offspring of rats exposed by inhalation to 500 ppm mixed xylenes with up to 20% ethylbenzene. In another study, fetotoxicity (decreased weight) was observed in the female offspring of rats exposed to up to 500 ppm of mixed xylenes (12.8% ethylbenzene). No signs of maternal toxicity were observed in these studies. In other studies where rats and mice were exposed by inhalation or ingestion, harmful effects in the offspring (teratogenicity, embryotoxicity and/or fetotoxicity) were either not observed or were observed in the presence of significant harmful effects in the mothers. Some other studies have not been evaluated because of significant study design limitations for example, poor reporting of exposure details and/or effects, and inadequate evaluation of material toxicity. (1)

**Asphalt:**

No information available.

**MUTAGENICITY:**

**Xylene:**  
Negative results have been consistently obtained in a variety of studies using live animals and cultured cells. Mixed xylenes (undefined compositions) gave negative results in a number of bacterial assays, with and without metabolic activation. Negative results were obtained in a variety of tests live animals exposed by a number of exposure routes. Tests for chromosome damage in rats and mice (both bone-marrow cytogenetics and micronucleus) (by oral, injection and inhalation routes) were negative. Negative results were also obtained in dominant lethal assays in rats and mice following administration by injection of adequate maximum doses. (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**

<b>NAME OF PRODUCT:</b> SBS Modified Bitumen Mastic	<b>IDENTIFICATION NUMBER:</b> UN 1133
<b>CLASSIFICATION (TDG - DOT):</b> Class 3	<b>SHIPPING NAME:</b> Adhesive
<b>Containers follow the standards of:</b> Canada: CAN / CGSB-43.150-97 USA: CFR 49 parts 100 to 199	<b>PACKING GROUP:</b> III

**SECTION XV. REGULATORY INFORMATION**

**WHMIS:** Class B3: Flammable liquid (flash point over 37.8°C).  
 Class D2A: Very toxic material causing other effects (xylene has teratogenicity and embryotoxicity effects).  
 Class D2B: Toxic material causing other effects (asphalt and xylene 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).

<b>HMIS (USA):</b>	Health Hazard:	2	<b>NFPA (USA):</b>	Fire Hazard:	3
	Fire Hazard:	3		Reactivity:	0
	Reactivity:	0		Health:	2
	Personal protection:	2		Specific Hazard:	1

**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 (United States)  
**DSL:** Domestic Substances List (Canada)  
**EPA:** Environmental Protection Agency (United States)  
**HMIS:** Hazardous Material Information System  
**IARC:** International Agency for Research on Cancer  
**LC50:** (Lethal concentration<sub>50</sub>) Concentration of a substance in air that causes death of 50% mortality of a defined animal population  
**LD50:** (Lethal dose<sub>50</sub>) Single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause the death of 50% of a defined animal population.  
**NFPA:** National Fire Protection Association (United States)  
**NIOSH:** National Institute for Occupational Safety and Health  
**NTP:** National Toxicology Program  
**OSHA:** Occupational Safety & Health Administration (United States)  
**PEL:** Permissible Exposure Limit  
**RCRA:** Resource Conservation and Recovery Act (United States)  
**RTECS:** Registry of Toxic Effects of Chemical Substances  
**TDG:** Transportation of Dangerous Goods  
**TLV:** Threshold Limit Value  
**TWA:** Time-weighted average  
**TSCA:** Toxic Substances Control Act (United States)  
**WHMIS:** Workplace Hazardous Materials Information System (Canada)

**Reference:**

- (1) CHEMINFO (2003) Canadian Centre of Organisational Health and Safety, Hamilton (Ontario) Canada
- (2) Material Safety Data Sheet of the supplier.

**This MSDS has been prepared by:** Marie-Claude Fontaine  
**For more information:** SOPREMA Canada 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:**

- Addition of data in Sections III and XI.

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 or 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.**