MATERIAL SAFETY DATA SHEET
COLPLY ADHESIVE TROWEL GRADE

Use: Cold adhering paste for elastomeric bituminous membrane.

Formula number: 440.1

Manufacturer: Soprema Canada Distributors: Soprema Inc.
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Drummondville (Quebec)  J2C 5P7  CANADA
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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 paste with strong 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

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS #</th>
<th>% WEIGHT</th>
<th>TLV-TWA</th>
<th>TLV-STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>8052-42-4</td>
<td>30-60</td>
<td>0.5 mg/m³</td>
<td>Not established</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>15-40</td>
<td>100 ppm</td>
<td>150 ppm</td>
</tr>
</tbody>
</table>

SECTION III: POTENTIAL HEALTH EFFECTS

Xylene:
Xylene (mixed isomers) liquid is a moderate skin irritant based on animal information. 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. Repeated or prolonged exposure to xylene can defat the skin resulting in dermatitis (red, dry, itchy skin). Xylene (mixed isomers) liquid or vapour can be absorbed through the skin, but not as readily as when inhaled or ingested. (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:
Xylene (mixed isomers) liquid is a very mild irritant, based on animal information. (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.

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Xylene:
Xylene (mixed isomers) is not considered toxic if ingested based on animal toxicity information. Ingestion of large amounts is likely to cause CNS effects such as dizziness, nausea and vomiting. In one case report, which is not available in English, ingestion of food probably contaminated with xylene (mixed isomers; unspecified composition), caused pulmonary oedema, liver impairment and coma. The man recovered within 2 hours after treatment. Although there are no case reports, xylene (mixed isomers) 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.

<table>
<thead>
<tr>
<th>Effects of Long-Term (Chronic) Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SKIN CONTACT</strong></td>
</tr>
<tr>
<td>Xylene:</td>
</tr>
<tr>
<td>Prolonged contact with xylene (mixed isomers) is expected to cause dermatitis (dry, red skin) because of its defatting action. (1)</td>
</tr>
<tr>
<td>Asphalt:</td>
</tr>
<tr>
<td>Repeated or prolonged contact may cause irritation. (2)</td>
</tr>
<tr>
<td><strong>SKIN SENSITIZATION</strong></td>
</tr>
<tr>
<td>Xylene:</td>
</tr>
<tr>
<td>Xylene (mixed isomers) is not known to be an occupational skin sensitizer. (1)</td>
</tr>
<tr>
<td><strong>INHALATION</strong></td>
</tr>
<tr>
<td>Xylene:</td>
</tr>
<tr>
<td>See effects described below.</td>
</tr>
<tr>
<td>Asphalt:</td>
</tr>
<tr>
<td>Exposure is not expected by this route of entry under normal product use.</td>
</tr>
<tr>
<td><strong>NERVOUS SYSTEM EFFECTS</strong></td>
</tr>
<tr>
<td>Xylene:</td>
</tr>
<tr>
<td>Long-term xylene (mixed isomers) exposure 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 xylene and other solvents. This condition is often referred to as &quot;organic solvent syndrome&quot;. Unfortunately, there is very little information available that isolates xenyles from other solvent exposures in the examination of these long-term neurological effects. Other study deficiencies include inadequate reporting on the duration of exposure and the exposure levels, and poor matching of controls. (1)</td>
</tr>
<tr>
<td>Asphalt:</td>
</tr>
<tr>
<td>No information available.</td>
</tr>
<tr>
<td><strong>BLOOD EFFECTS</strong></td>
</tr>
<tr>
<td>Xylene:</td>
</tr>
<tr>
<td>Historical reports sometimes associate xylene exposure with certain blood effects, including leukemia, which are now known to be caused by benzene. Xylene that does not contain benzene as a contaminant is not known to cause these effects. (1)</td>
</tr>
<tr>
<td>Asphalt:</td>
</tr>
<tr>
<td>No information available.</td>
</tr>
<tr>
<td><strong>LIVER AND KIDNEY EFFECTS</strong></td>
</tr>
<tr>
<td>Xylene:</td>
</tr>
<tr>
<td>A number of case reports and occupational studies have suggested that liver and kidney damage may result from long-term occupational exposure to xylene (mixed isomers). 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. (1)</td>
</tr>
<tr>
<td>Asphalt:</td>
</tr>
<tr>
<td>No information available.</td>
</tr>
</tbody>
</table>

Asphalt:
No information available.

**HEARING**

Xylene:
There is evidence that long-term exposure to solvent mixtures including xlenes may cause hearing loss. The simultaneous exposure to noise and solvents appears to enhance this effect. However, the limited information available does not allow a conclusion to be drawn specifically for xylene (mixed isomers). (1)

**CARCINOGENICITY**

Xylene:
Xylene (mixed isomers) is not a known carcinogen. There are several case-control studies where xylene is mentioned as an exposure. These studies are all limited by factors such as small numbers, inadequate information on exposure concentrations and by concurrent exposure to other harmful chemicals (e.g. toluene, benzene, styrene, methyl ethyl ketone). In most cases there was no significant association between specific cancers and xylene exposure. 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. 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**

Xylene:
Xylene (mixed isomers) are considered fetotoxic in humans, based on observations of reduced foetal weight, delayed ossification and persistent behavioural effects in animal studies in the absence of maternal toxicity. Other developmental effects have been observed in animal studies in the presence of maternal toxicity. (1)

Asphalt:
No information available.

**REPRODUCTIVE TOXICITY**

Xylene:
The limited information located suggests that xylene (mixed isomers) do not cause reproductive effects. Xylene has been shown to transfer into human breast milk. (1)

Asphalt:
No information available.

**MUTAGENICITY**

Xylene:
There have been a few studies investigating the mutagenic potential of mixed xlenes (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 xlenes 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:**
Xylene (mixed isomers) is not known to be a mutagen. Negative results have been obtained in a few limited studies in humans. Negative results have been obtained in studies in live animals and in cultured mammalian cells and bacteria, which were carried out with pure xylene and with mixed isomers containing up to 36% ethylbenzene. (1)

**Asphalt:**
No information available.

TOXICOLOGICALLY SYNERGISTIC MATERIALS

**Xylene:**
There have been several studies in humans and animals on the interaction of xylene with drugs, alcohol and other solvents. Xylene has a high potential to interact with other compounds because it increases metabolic enzymes in the liver and decreases metabolic enzymes in the lungs. In general, exposure to related solvents, such as benzene, toluene and ethanol (alcohol) slows the rate of clearance of xylene from the body, thus enhancing its toxic effects. (1)

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. Smaller 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 Liquid Class IC (NFPA)

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

**FLASH POINT:**
25°C (ASTM D-93)

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

**FLAMMABILITY 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 oxidising 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 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, CO₂, 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 and its vapours are 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 partially used containers. Do not cut, puncture or weld empty containers.

**STORAGE**
Store in a cool well-ventilated area out of direct sunlight and away from heat and ignition sources. Keep storage areas clear of combustible materials. No smoking near storage area. Store away from incompatible materials. Store the product according to occupational health and safety regulations and fire and building codes. Storage area should be clearly identified, clean of obstruction and accessible only to trained and authorised 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
ODOUR AND APPEARANCE: Black paste with strong solvent odour
ODOUR THRESHOLD: Not available
VAPOUR 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 (H2O = 1): 0.90 kg/L
SOLUBILITY IN WATER (20°C): Insoluble
VOLATILE ORGANIC COMPOUND (V.O.C.) CONTENT: 225 g/L
VISCOSITY: Not available

SECTION X: STABILITY AND REACTIVITY

STABILITY: This material is stable.
CONDITIONS OF REACTIVITY: Avoid excessive heat.
INCOMPATIBILITY: Basis and strong oxidising agents. Inorganic acids (Strong Lewis).
HAZARDOUS DECOMPOSITION PRODUCTS: None identified.
HAZARDOUS POLYMERISATION: None

SECTION XI: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA

Xylene: (1)
LC50 (male rat): 6 350 ppm (4-hour exposure) (unspecified xylene isomers and ethylbenzene)
LD50 (oral, rat): 3 523 mg/kg (60.2% m-xylene, 9.1% o-xylene, 14.6% p-xylene, 17.0% ethylbenzene)

Asphalt: Not available

EYE IRRITATION

Xylene: Xylene (mixed isomers) is a very mild eye irritant. (1)

SKIN IRRITATION

Xylene: Xylene (mixed isomers) is a moderate skin irritant. (1)

Effects of Short-Term (Acute) Exposure

Xylene: The major effect following inhalation of xylene (mixed isomers) is on the CNS. There is initial excitation followed by depression, drowsiness, incoordination and unconsciousness at approximately 2 000 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. (1)

Asphalt: No information available.

TERATOGENICITY, EMBRYOTOXICITY, FETOTOXICITY

Xylene: Xylene (mixed isomers) causes developmental toxicity (fetotoxic). Reduced foetal weight, delayed ossification and persistent behavioural effects have been observed in the absence of maternal toxicity. Other developmental effects have been observed in the presence of maternal toxicity. In three studies, fetotoxic effects (delayed ossification and behavioural effects) were observed in the offspring of rats exposed to up to 500 ppm xylene (44.2% m-xylene, 20.4% o-xylene, 20.3% p-xylene, 12.8% ethylbenzene) in a single generation study. No firm negative conclusions can be drawn from this study because the maximum tolerated dose was not achieved. (1)

Asphalt: No information available.

MUTAGENICITY

Xylene: Xylene (mixed isomers) is not known to be a mutagen. Negative results have been obtained in studies using live animals and in most studies with cultured mammalian cells and bacteria which were carried out with pure isomers of xylene and with mixed isomers containing up to 36% ethylbenzene. Studies using live animals carried out with pure isomers of xylene and with mixed isomers containing up to 36% ethylbenzene have all given negative results. (1)

Asphalt: No information available.

TOXICOLOGICAL SYNERGISTIC MATERIALS

Xylene: There have been several studies in animals on the interaction of xylene with drugs, alcohol and other solvents. Xylene has a high potential to interact with other compounds because it increases metabolic enzymes in the liver and decreases metabolic enzymes in the lungs. Exposure to xylene (mixed isomers; unspecified composition) in combination with the solvents trichloroethylene or chlorobenzene had an additive effect in causing hearing loss in rats. (1)
SECTION XII: ECOLOGICAL INFORMATION

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

SECTION XIII: DISPOSAL CONSIDERATIONS

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

SECTION XIV: TRANSPORT INFORMATION

CLASSIFICATION (TDG - DOT): Class 3
IDENTIFICATION NUMBER: UN 1133
SHIPPING NAME: Adhesive
PACKING GROUP: III
CONTAINERS FOLLOW THE STANDARDS.

SECTION XV: REGULATORY INFORMATION

WHMIS
B2: Flammable liquid (flash point lower than 37.8°C).
D2A: Very toxic material causing other effects (xylene has teratogenicity and embryotoxicity effects).
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).

HMIS (USA):          NFPA (USA):
Health              Health     2               2
Flammability    3       Flammability   3
Physical hazard  0       Instability    0
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:
(2) Material Safety Data Sheet of the supplier.

Code of MSDS: CA U DRU SS FS 002
For more information: 1 800 567-1492

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

Justification of the update:
- Modification of the Formula number. (Section I)
- Modification of data about xylene. (Sections III and XI)
- The codification of Reactivity (HMIS) has been replaced by Physical Hazard and of Reactivity (NFPA has been replaced by Instability. (Section XV)


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.