



ASPHALT CEMENT (BITUMEN)

MSDS Revision Date (dd/mm/yyyy): 01/05/2015

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product name : ASPHALT CEMENT (BITUMEN)

Product Code : BITUMEN

Product Use : Mainly used for paving applications.

Chemical Family : Mixture.

Supplier's name and address : Kildair Service ULC
92, Chemin Delangis
St-Paul of Joliette, QC, Canada
J0K 3E0

Manufacturer's name and address : Refer to Supplier

Tel. numbers in case of emergency (24 h.) : Kildair Service ULC : 450 756-8091
CANUTEC : 613 996-6666

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS classification:
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

OSHA : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).
Hazardous classification :
Acute Health Hazard;
Chronic Health Hazard.

Asphalt may be transported warm.

Emergency overview : Viscous liquid; black. May have characteristic asphaltic odour of "rotten egg". CAUTION! Harmful if inhaled or swallowed. May cause nausea, vomiting, headache and other central nervous system effects. May cause respiratory irritation. May cause eye and skin irritation. Irritating or noxious gases may be released during decomposition. Releases: Hydrogen sulfide.

POTENTIAL HEALTH EFFECTS :

Signs and symptoms of short-term (acute) exposure

Inhalation : If product is heated or mists are formed, inhalation may cause irritation to the nose, throat and respiratory tract. In extremely high concentrations, may also cause nausea, vomiting, dizziness, drowsiness and other symptoms of central nervous system depression.

Irritating or noxious gases may be released during thermal decomposition. Releases: Hydrogen sulfide. Severe respiratory irritation (from vapours or mists) is possible. Could also cause convulsions, coma, respiratory arrest and death.

Skin : May cause mild to moderate skin irritation. Prolonged contact, such as when trapped against the skin under clothing or jewelry, may be more irritating. Exposure to hot material may cause thermal burns.

Eyes : May cause moderate eye irritation.

Ingestion : May cause irritation of mouth, throat, and stomach. May cause nausea, vomiting, and diarrhea.

Effects of long-term (chronic) exposure : Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin.



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Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects : See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt. %
Bitumen, petroleum (residue)	64741-56-6	60.00 - 100.00
Solvent refined heavy paraffinic distillate	64741-88-4	0.00 - 12.00
Lubricating oils, used, residues	129893-17-0	0.00 - 5.00

SECTION 4 - FIRST AID MEASURES

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.

Skin contact : Remove/Take off immediately all contaminated clothing. Wash exposed area thoroughly with soap and water for at least 15 minutes. If irritation persists, seek prompt medical attention. Treat all thermal burns with appropriate first aid measures for degree of burn. Flush with cool running water. Cover wound with sterile dressing. Get medical attention.

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.

Ingestion : Seek immediate medical attention/advice. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Note for Physician : Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability : Not flammable under normal conditions of use. However, may ignite if exposed to extreme heat and flame. Vapours are heavier than air and may collect in confined and low-lying areas. Product may float, and be re-ignited at the water's surface. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Irritating or noxious gases may be released during thermal decomposition. Releases: Hydrogen sulfide.

Flammability classification (OSHA 29 CFR 1910.1200) : Combustible Liquid Class III B.

Oxidizing properties : Not known.

Explosion data : Sensitivity to mechanical impact/static discharge : Not expected to be sensitive to mechanical impact or static discharge.

Suitable extinguishing media : Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.

Special fire-fighting procedures/equipment : Firefighters should wear proper protective equipment and self contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products : Carbon oxides; Sulphur oxides; Nitrogen oxides (NOx); Hydrogen sulfide; Hydrocarbons; Polycyclic aromatic hydrocarbons; Other unidentified organic compounds.



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NFPA Rating : 0-Minimal 1-Slight 2-Moderate 3-Serious 4-Severe
 Health : 1 Flammability : 1 Instability : 0 Special Hazards : None

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Spill response/cleanup : Ventilate area of release. Remove all sources of ignition. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required. For a water spill: Remove from the water surface by skimming or with suitable absorbents. Notify the appropriate authorities as required.

Prohibited materials : Do not use combustible absorbents, such as sawdust.

Special spill response procedures : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the National Response Center in the United States (phone : 1-800-424-8002). US CERCLA Reportable quantity (RQ): None reported.

SECTION 7 - HANDLING AND STORAGE

Safe handling procedures : Asphalt may be transported warm. During storage, transit and cooling of asphalt, hydrogen sulphide may accumulate in enclosed spaces such as tank cars. Open tank car hatches with caution. Maintain same precautions when gauging and sampling. Use in a well ventilated area. Wear suitable protective equipment during handling. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Avoid contact with incompatible materials. Wash thoroughly after handling. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not reuse containers without commercial cleaning and/or reconditioning.

Storage requirements : Store in a cool, dry, well-ventilated area. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials : Water; Bases; Reducing agents; Strong oxidizers (e.g. Chlorine, Peroxides, etc.)

Special packaging materials : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Bitumen, petroleum (residue)	0.5 mg/m ³ (inhalable) (as 'asphalt fume')	N/Av	N/Av	N/Av
Solvent refined heavy paraffinic distillate	5 mg/m ³ (As 'Oil mist, mineral')	N/Av	5 mg/m ³ (As 'Oil mist, mineral')	N/Av
Lubricating oils, used, residues	N/Av	N/Av	N/Av	N/Av

Note: Irritating or noxious gases may be released during thermal decomposition. Releases: Hydrogen sulfide. ACGIH - TLV : 10 ppm (Hydrogen sulfide).



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Ventilation and engineering measures :	Use in a well ventilated area. General mechanical ventilation and local exhaust is recommended for use with this product.
Respiratory protection :	Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Advice should be sought from respiratory protection specialists. A self contained breathing apparatus should be used in emergency situations or instances where exposure levels are not known.
Skin protection :	Impervious gloves must be worn when using this product. When handling hot material, use heat resistant gloves. Advice should be sought from glove suppliers. Wear as appropriate : polyvinyl alcohol; FLUORO-ELASTOMER.
Eye / face protection :	Safety glasses with side shields should be used with this product. Chemical goggles are recommended when there is a potential for splashing.
Other protective equipment :	Wear a chemically resistant apron and long sleeves when dispensing, to prevent skin contact. An eyewash station and safety shower should be made available in the immediate working area.
General hygiene considerations :	Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Viscous liquid
Appearance :	Black
Odour threshold :	N/Av
Odour :	Characteristic asphaltic odour of "rotten egg" if H ₂ S present, but odour is an unreliable warning, since it may deaden the sense of smell.
Solubility in water :	Insoluble in water, alcohol. Acids and alkalies. Soluble in oil turpentine, petroleum, carbon disulphide, chloroform, ether and acetone.
ph :	N/Av
Specific gravity :	> 1.0 @ 15°C (59°F)
Boiling point :	470°C(878°F)
Coefficient of water/oil distribution :	N/Av
Melting/Freezing point :	N/Av
Softening point:	30 @ 80°C (86 @ 176°F)
Vapour pressure (mmHg @ 20° C/68° F) :	< 1.0 kPa @ 38°C (100.4°F)
Evaporation rate (n-Butyl acetate = 1) :	N/Av
Flame Projection Length :	N/Av
Volatiles (% by weight) :	N/Av
Vapour density (Air = 1) :	V/Av
Auto-ignition temperature :	> 370 (698°F)
Volatile organic Compounds (VOC's) :	N/Av
Upper flammable limit (% by vol.) :	N/Av
Flash point :	> 230°C (> 446°F)
Flashback observed :	N/Av
Flash point Method :	Cleveland Open Cup
Lower flammable limit (% by vol.) :	N/Av



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SECTION 10 - STABILITY AND REACTIVITY

Stability and reactivity : Stable under the recommended storage and handling conditions prescribed.

Hazardous polymerization : Will not occur.

Conditions to avoid : Avoid heat and open flame. Keep away from direct sunlight.

Materials to avoid and incompatibility : See Section 7 (Handling and Storage) for further details.

Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Eyes, skin, respiratory system, digestive system, central nervous system.

Routes of exposure : *Inhalation* : YES *Skin Absorption* : NO *Skin & Eyes* : YES *Ingestion* : YES

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<u>LC₅₀(4hr)</u> <u>inh. Rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Bitumen, petroleum (residue)	N/Av	> 5000 mg/kg	> 2000 mg/kg
Solvent refined heavy paraffinic distillate	N/Av	> 5000 mg/kg	> 5000 mg/kg
Lubricating oils, used, residues	N/Av	N/Av	N/Av

Carcinogenicity : An IARC workind group has concluded that occupational exposures to straight-run bitumens and their emissions during road paving are "potentially carcinogenic to humans" (Group 2B). The WHMIS classification for this product will be reviewed and revised as necessary when the official IARC monograph is available.

Reproductive effects : Not expected to have other reproductive effects.

Teratogenicity : Not expected to be a teratogen.

Mutagenicity : Not expected to be mutagenic in humans.

Epidemiology : Not available.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Synergistic materials : None known or reported by the manufacturer.

Irritancy : Mild to moderate irritation.

Other important hazards : CNS depression may result from extreme exposures.

Conditions aggravated by overexposure : Pre-existing skin, eye and respiratory disorders.



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SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity :	No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
Mobility :	No data is available on the product itself.
Persistence :	No data is available on the product itself. Not expected to be rapidly biodegradable.
Bioaccumulation potential :	No data is available on the product itself.
Other adverse environmental effects :	No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for disposal :	Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.
Methods of disposal :	Dispose of in accordance with federal, provincial and local hazardous waste laws.
RCRA :	If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 - TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	UN3257	Elevated temperature liquid, n.o.s.	9	III	
49CFR/DOT Additional information	None				
TDG	None	Not regulated	Not regulated	None	
TDG Additional information	None				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

TSCA : All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302) : None reported.

SARA TITLE III : Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.



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SARA TITLE III : Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes : Immediate (Acute) health hazard; Chronic Health Hazard; Fire Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III : Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

US State Right to Know Laws:

California Proposition 65 : To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Other U.S. State "Right to Know" Lists : The following chemicals are specifically listed by individual States : None.

International Information :

Canadian Environmental Protection Act (CEPA) information : All ingredients listed appear on the Domestic Substances List (DSL).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

SECTION 16 - OTHER INFORMATION

HMIS rating :	*-Chronic hazard	0-Minimal	1-Slight	2-Moderate	3-Serious	4-Severe
	Health : *1		Flammability :1		Reactivity :0	

Legend :

- ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- CAS: Chemical Abstract Services
- CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act of 1980.
- CFR : Code of Federal Regulations
- DOT : Department of Transportation
- EPA : Environmental Protection Agency
- EST : Eastern Standard Time
- HMIS : Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- OSHA: Occupational Safety and Health Administration
- PA : Pennsylvania
- PEL: Permissible exposure limit
- RCRA : Resource Conservation and Recovery Act
- RI : Rhode Island
- RTECS: Registry of Toxic Effects of Chemical Substances
- SARA : Superfund Amendments and Reauthorization Act
- STEL: Short Term Exposure Limit
- TLV: Threshold Limit Values
- TWA: Time Weighted Average
- TSCA: Toxic Substance Control Act
- WHMIS: Workplace Hazardous Materials Identification System



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References :

1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2010.
2. International Agency for Research on Cancer Monographs, searched 2010.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2010 (CHEMpendium, HSDB and RTECs).
4. Material Safety Data Sheet from manufacturer.
5. California Proposition 65 List - June 11, 2010 version.
6. US EPA Title III List of Lists - October, 2006 version.

Prepared by:

Kildair Service ULC
92, Delangis Road
St-Paul of Joliette, QC, Canada, J0K 3E0
Telephone: 450 756-8091
Please direct all enquiries to Kildair Service ULC



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