Material Safety Data Sheet
Paving Asphalt Cements

Section 1. Chemical Product and Company Identification			
Product Name	**Industrial Asphalt Cements**		Validated on OCT 24 2013.
Synonym	**Bit C-8**		
Manufacturer	**Bitumar Inc.** **11155 Ste-Catherine East** **Montréal-East, QC H1B 0A4** **Canada** **Ph: 514-645-4561**	**Bitumar (Hamilton) Inc.** **400 Eastport Blvd.** **Hamilton, ON L8H 7S4** **Canada** **Ph: 905-549-4561**	**Bitumar USA Inc.** **6000 Pennington Ave.** **Baltimore, MD 21226** **USA** **Ph: 410-354-9550**
In case of emergency	Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).		
Material Uses	These products are primarily used for paving applications. However, there are a number of other industrial applications		

Section 2. Composition and Information on Ingredients					
			Exposure Limits (ACGIH)		
Name	**CAS#**	**% (W/W)**	**TLV-TWA (8 h)**	**STEL**	**CEILING**
Residues (petroleum)	64741-56-6	60 – 100	0.5 mg/m^3 asphalt fumes, as benzene soluble aerosol		
Sulphur (Note 1)	7704-34-9	1 – 5	10 ppm (H_2S)	15 ppm (H_2S)	Not established
Styrene-Butadiene Copolymers	9003-55-8	7 - 13	Not controlled		
Note 1: Sulphur and its derivatives are intrinsic to base asphalt. During storage or transit of hot asphalt, hydrogen sulphide may be generated.					
Other Exposure Limits	Consult local, state, provincial or territory authorities for acceptable exposure limits.				

Section 3. Hazards Identification.	
Potential Health Effects	This product has a low vapour pressure and is not expected to present an inhalation hazard at ambient conditions. Heating to high temperatures or mechanical actions, may produce vapours or fumes. Inhalation of vapours or fumes can cause respiratory tract irritation and CNS depression with symptoms of nausea, headaches, vomiting, dizziness, fatigue, light-headedness, reduced coordination, unconsciousness and possibly death. Hot asphalt burns skin and eyes. At higher concentrations (above 10 ppm), hydrogen sulphide is extremely toxic by inhalation, may cause respiratory-tract irritation and respiratory failure, coma and death. Pulmonary oedema can occur up to 24 hours after hydrogen sulphide exposure. While hydrogen sulphide emits a strong odour of rotten eggs, detection by smell is not reliable as a warning for exposure to this substance, as it may deaden the sense of smell quickly. Refer to Section 11

Section 4. First Aid Measures	
Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open, Seek medical attention.
Skin Contact	For hot asphalt splash, cool affected body part with water immersion or shower. Do not attempt removal of asphalt but split longitudinally if asphalt covers limb circumferentially to avoid tourniquet effect. **No attempt should be made to remove firmly adhering bitumen from the skin.** Once the bitumen has cooled, it will do no further harm and in fact provide a sterile covering over a burnt area. As healing takes place, the bitumen plaque will detach itself, usually after a few days. For skin soiling without underlying burn, cleanse with mineral oil followed by soap and water. Use olive oil in vicinity of eyes.

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Section 4. First Aid Measures (Cont'd)	
Inhalation	Evacuate the victim to a safe area as soon as possible. If the victim is not breathing, perform artificial respiration. Allow the victim to rest in a well ventilated area. Seek medical attention.
Ingestion	DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.

Section 5 Fire-fighting Measures			
Flammability	Non-flammable, but will burn on prolonged exposure to flame or high temperature.	**Flammable Limits**	Not available
Flash Points	>230°C (445°F) (Cleveland open cup)	**Auto-Ignition Temperature**	>370 °C (> 698°F)
Fire hazards	Low fire hazard. This material must be heated before ignition will occur. Hydrogen sulphide may be released if the product is overheated and may accumulate in the tank headspace or any other confined space.	**Explosion hazards**	Do not cut, weld, heat, drill or pressurize empty container. Containers may explode in heat of fire.
Products of Combustion	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating fumes as products of incomplete combustion.		
Fire Fighting Media and Instructions	NAERG96, GUIDE 171, Substances (low to moderate hazard). If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (0.5 mile) in all directions; also, consider initial evacuation for 800 meters (0.5 mile) in all directions. Shut off fuel to fire if it is possible to do so without hazard. If this is impossible, withdraw from area and let fire burn out under controlled conditions. Withdraw immediately in case of rising sound from venting safety device or any discolouration of tank due to fire. Cool containing vessels with water spray in order to prevent pressure build-up, auto-ignition or explosion. SMALL FIRE: use DRY chemicals, foam, water spray or CO2. LARGE FIRE: use water spray, fog or foam. For small outdoor fires, portable fire extinguishers may be used, and self contained breathing apparatus (SCBA) may not be required. For all indoor fires and any significant outdoor fires, SCBA is required. Respiratory and eye protection are required for fire fighting personnel.		

Section 6. Accidental Release Measures	
Material Release or Spill	Consult current National Emergency Response Guide Book (NAERG) for appropriate spill measures if necessary. Avoid contact with spilled material. Avoid breathing vapours or fumes of material. Ensure clean up personnel wear appropriate personal protective equipment. Avoid contaminating sewers, streams, rivers and other water courses with spilled material. Notify appropriate authorities immediately.

Section 7. Handling and Storage	
Handling	Asphalt may be transported hot. Avoid skin contact. Avoid eye contact. Avoid inhalation of product vapours or fumes. Ensure all equipment is grounded/bonded. 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. Empty containers may contain product residue. Do not reuse containers without commercial cleaning and/or reconditioning. Personnel who handle this material should practice good personal hygiene during and after handling to help prevent accidental ingestion of this product. Wear proper personal protective equipment (See Section 8).
Storage	To maintain pumping ability, asphalt is kept heated to a suitable temperature; normally well above room temperature but below the flash point. Store in dry, well-ventilated area. Clear roof vents periodically to prevent accumulation of asphalt deposits from vapour accumulation. Store away from incompatible and reactive materials (See section 5 and 10). Ensure the storage containers are grounded / bonded.

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Section 8. Exposure Controls/Personal Protection	
Engineering control	For normal application, special ventilation is not necessary. If user's operations generate vapours or fumes, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.
Personal protection	The selection of personal protective equipment varies, depending upon conditions of use.
Eyes	As a minimum, safety glasses with side shields should be worn when handling this material.
Body	If this material may come in contact with the body during handling and use, we recommend wearing appropriate protective clothing to prevent contact with the skin. (Contact your PPE provider for more information.)
Respiratory	A minimum of NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister with a dust, fume of mist filter (R, or P series) may be allowable under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. A NIOSH-approved positive-pressure, air-supplied respirator or self-contained breathing apparatus may be required under certain circumstances where airborne concentrations are expected to exceed exposure limits
Hands	If this material may come in contact with the hands during handling and use, we recommend wearing gloves of the following material(s): nitrile, leather. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed. When handling hot product ensure gloves are heat resistant and insulated.
Feet	Wear appropriate footwear to prevent product from coming in contact with feet and skin.

Section 9. Physical and Chemical Properties			
Physical State and Appearance	Viscous semi-solid.	**Viscosity**	600 – 1000 cP @ 182°C (360°F)
Colour	Black	**Pour Point**	Not available
Odour	Characteristic asphaltic odour or "rotten egg" odour if H2S present. **Odour is an unreliable warning, since it may deaden the sense of smell.**	**Softening Point**	88 - 102ºC (190 - 215ºF)
Odour Threshold	Not available	**Dropping Point**	Not available
Boiling Point	470 °C (878°F)	**Penetration**	25 – 40 dmm @ 25ºC
Density	1.00 – 1.04 (Water = 1)	**Oil / Water Dist. Coefficient**	Not available
Vapour Density	Not available	**Ionicity (in water)**	Not available
Vapour Pressure	Not available	**Dispersion Properties**	Not available
Volatility	Non-volatile at ambient temperature and pressure.	**Solubility**	Insoluble in cold water, alcohol, acids and alkalis. Soluble in oil turpentine, petroleum, carbon disulphide, chloroform, ether, and acetone.

Section 10. Stability and Reactivity			
Corrosivity	Non corrosive.		
Stability	The product is stable under normal handling and storage conditions.	**Hazardous Polymerization**	Will not occur under normal working conditions.
Incompatible Substances / Conditions to Avoid	Reactive with oxidizing agents and fluorine	**Decomposition Products**	May release COx, NOx, SOx, H2S, hydrocarbons, smoke and irritating fumes when heated to decomposition.

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Section 11. Toxicological Information		
Routes of Entry	Skin contact, eye contact, inhalation and ingestion.	
Acute Lethality	Based on toxicity of components. H_2S - Acute inhalation toxicity (LC50): 250-354 ppm/4h (rat & mouse).	
Chronic or Other Toxic Effects		
Dermal Route	Prolonged or repeated contact with skin may cause dermatitis or warty skin growths (keratosis). Contact with hot material can cause thermal burns.	
Inhalation Route:	This product has a low vapour pressure and is not expected to present an inhalation hazard at ambient conditions. Heating of this product to high temperatures or mechanical actions, may produce vapours or fumes. Inhalation of vapours or fumes can cause respiratory tract irritation and CNS depression with symptoms of nausea, headaches, vomiting, dizziness, fatigue, light-headedness, reduced coordination, unconsciousness and possibly death. At higher concentrations (above 10 ppm), H_2S is extremely toxic by inhalation, may cause respiratory-tract irritation and respiratory failure, coma and death. Pulmonary oedema can occur up to 24 hours after H_2S exposure. While H_2S emits a strong odour of rotten eggs, detection by smell is not sufficient as a warning property for exposure to this substance, as it may deaden the sense of smell quickly.	
Oral Route	Relatively non-toxic via ingestion	
Eye Irritation Inflammation	Vapours or fumes from the hot asphalt can cause irritation of the surface of the eyes as well as limbal pigmentation of the cornea. Contact with hot material can cause thermal burns.	
Immunotoxicity	Not available	
Skin Sensitization:	This product is not expected to be a skin sensitizer, based on the available data and the known hazards of the components.	
Respiratory Tract Sensitization:	This product is not expected to be a respiratory tract sensitizer, based on the available data and the known hazards of the components.	
Mutagenic / Reproductive	This product is not expected to be a mutagen, based on the available data and the known hazards of the components.	
Toxicity	Acute dermal toxicity LD50 – Oxidized asphalt	
Teratogenicity / Embryotoxicity:	This product is not expected to be a teratogen or an embryo toxin, based on the available data and the known hazards of the components.	
Carcinogenicity (ACGIH):	This product is not known to contain any chemicals at reportable quantities that are listed as A1 or A2 carcinogens by ACGIH.	
Carcinogenicity (IARC):	Based on IARC Oct 18, 2011 announcement: • occupational exposures to hard bitumens and their emissions during mastic asphalt work are 'possibly carcinogenic to humans' (Group 2B); and • occupational exposures to straight-run bitumens and their emissions during road paving are 'possibly carcinogenic to humans' (Group 2B).	 Warning Suspected of causing cancer
Carcinogenicity (NTP):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by NTP.	
Carcinogenicity (IRIS):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by IRIS.	
Carcinogenicity (OSHA)	Based on IARC Oct 18, 2011 announcement: • occupational exposures to hard bitumens and their emissions during mastic asphalt work are 'possibly carcinogenic to humans' (Group 2B); and • occupational exposures to straight-run bitumens and their emissions during road paving are 'possibly carcinogenic to humans' (Group 2B).	 Warning Suspected of causing cancer
Other Considerations	IARC Announcement will soon be followed by release of monograph	

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Section 12. Ecological Information

Environmental Fate	Not available	**Persistence/Bioaccumulation**	Not available
BOD5 and COD	Not available	**Products of Biodegradation**	Not available
Additional Remarks	No additional remark		

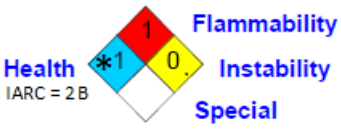
Section 13. Disposal Considerations

US EPA Waste Number & Description :	
A: General product information	Material, if discarded, is not a characteristic hazardous waste under RCRA.
B: Component waste Numbers	No EPA waste number are applicable for this product's components
Disposal instructions	Dispose of waste material according to local, Federal, Provincial and state Environmental Regulations

Section 14. Transport Information

TDG Classification	**Canada**	Not controlled in Canada	
	USA	ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100°C and below its flash point, 9, UN3257, PGIII (CL-TDG)	
Special Provisions for Transport	See Transportation of Dangerous Goods Regulations.		

Section 15. Regulatory Information

USA Regulation	SARA 302 AND 304: This product contain hydrogen sulphide (CAS # 7783-06-4) an "extremely hazardous substances" listed pursuant to Title III of SARA Section 302 or Section 304			
	SARA 311 AND 312:These products pose the following health hazard(s) as defined in 40 CFR Part 370 and are subject to the requirements of sections 311 and 312 of Title III of SARA: Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard Hot Product: Fire Hazard			
	SECTION 313:These products do not contain "toxic" chemical(s) subject to the requirements of section 313 of Title III of SARA and 40 CFR Part 372.			
CANADIAN REGULATIONS	This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on the CEPA-DSL (Domestic Substances List). All components of this formulation are listed on the US EPA-TSCA Inventory. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR. **WHMIS:** Class D2B - Irritating to eyes and skin. As a hot product: Class B2 - Flammable Liquid			
CEPA CANADIAN EPA:	All the components of these products are listed on, or are automatically included as "substance occurring in nature" on, or are exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).			
ADR (Europe)	NOT EVALUATED FOR EUROPEAN TRANSPORT		**DOT (U.S.A)**  **(Pictograms)**	
HMIS (USA)	Health Hazard	**1**		Rating : 0 Insignificant 1 Slight 2 Moderate 3 High 4 Extreme
	Fire Hazard 1	**1**		
	Reactivity 0	**0**		
	Personal Protection	**B**		

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Section 16. Other Information	
References	Available upon request.

Glossary

ACGIH -American Conference of Governmental Industrial Hygienists
ADR - Agreement on Dangerous goods by Road (Europe)
ASTM - American Society for Testing and Materials
BODS - Biological Oxygen Demand in 5 days
CAN/CGA B149.2 Propane Installation Code
CAS - Chemical Abstract Services
CEPA - Canadian Environmental Protection Act
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CFR - Code of Federal Regulations
CHIP - Chemicals Hazard Information and Packaging Approved Supply List
CNS - Central Nervous System
COD5 - Chemical Oxygen Demand in 5 days
CPR - Controlled Products Regulations
DOT - Department of Transport
DSCL - Dangerous Substances Classification and Labelling (Europe)
DSD/DPD - Dangerous Substances or Dangerous Preparations Directives (Europe)
DSL - Domestic Substance List
EEC/EU - European Economic Community/European Union
EINECS - European Inventory of Existing Commercial Chemical Substances
EPA - Environmental Protection Agency
EPCRA - Emergency Planning and Community Right to Know Act
FDA - Food and Drug Administration
FIFRA - Federal Insecticide, Fungicide and Rodenticide Act
HCS - Hazard Communication Standard
HMIS - Hazardous Material Information System
IARC - International Agency for Research on Cancer
IRIS - Integrated Risk Information System
LD50/LC50 - Lethal Dose/Concentration kill 50%
LDLo/LCLo - Lowest Published Lethal Dose/Concentration
NAERG'96 - North American Emergency Response Guide Book (1996)
NFPA - National Fire Prevention Association
NIOSH - National Institute for Occupational Safety & Health
NPRI - National Pollutant Release Inventory
NSNR - New Substances Notification Regulations (Canada)
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PEL - Permissible Exposure Limit
RCRA - Resource Conservation and Recovery Act
RTECS - Registry of Toxic Effects of Chemical Substances
SARA - Superfund Amendments and Reorganization Act
SD - Single Dose
STEL - Short Term Exposure Limit (15 minutes)
TDG - Transportation Dangerous Goods (Canada)
TDLo/TCLo - Lowest Published Toxic Dose/Concentration
TLm - Median Tolerance Limit
TLV-TWA - Threshold Limit Value-Time Weighted Average
TSCA - Toxic Substances Control Act
USEPA - United States Environmental Protection Agency
USP - United States Pharmacopoeia
WHMIS - Workplace Hazardous Material Information System

Bitumar Inc. customarily reviews and updates MSDS at least once every 3 years in accordance with the Canadian Controlled Products Regulations (CPR). If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact:

For Ontario/Central/Quebec & Eastern Canada: 514-645-4561; fax: 514-645-6978.
For the USA: 410-354-9550. Fax: 410-354-9552.
For other Product Safety Information: (514) 645-4561

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