

Asphalt Cements - Performance Graded (PG)

SECTION 1. IDENTIFICATION

Product Identifier	Asphalt Cements - Performance Graded (PG)
Other Means of Identification	PG 46-34, PG 46-40, PB 52-28, PG 52-34, PG 52-40, PG 58-22, PG 58-28, PG 58-34, PG 64-22, PG 64-28, PG 64-34, PG 70-22, PG 70-28, PG 58-28 HRD, PG 64-34 HRD, PG 58-34 HRD, PG 58-31 HRD, PG 64V-22, 64E-22, 64E-28, PG 52-34 R
Other Identification	*May contain Zydex Zycotherm Liquid Anti-stripping Additive
Recommended Use	These products are primarily used for paving applications. However, there are a number of other industrial applications.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	McAsphalt Industries Ltd, 8800 Sheppard Ave East, Toronto, Ontario, M1B 5R4
Emergency Phone No.	CANUTEC, (613) 996 - 6666, 24 hours McAsphalt Industries Ltd., 1 - (800) - 268 - 4238, 8AM-5PM Monday to Friday
SDS No.	0149

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015).

Classification

Acute toxicity (Inhalation) - Category 4; Carcinogenicity - Category 2

Label Elements



Warning

Harmful if swallowed, in contact with skin or if inhaled

Avoid breathing dust/fume/gas/mist/vapours/spray.

For hot asphalt splash, cool affected body part with water immersion or shower. Do not attempt to remove asphalt from the skin. Natural separation will occur in about 48-72 hours.

IF exposed or concerned: Get medical advice/attention.

Other Hazards

At higher concentrations of H₂S (above 10 ppm), inhalation may become extremely toxic and may cause respiratory-tract irritation and respiratory failure, coma, or death. Pulmonary edema 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 sufficient as a warning property for exposure to this substance, as it may deaden the sense of smell quickly.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Asphalt (Bitumen)	8052-42-4	99-100		Asphalt

Zycotherm		0-0.5		Organosilane Compounds
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Notes

NOTE: During storage or transit of hot asphalt, hydrogen sulphide may be generated.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Loosen tight clothing such as collar, tie, belt or waistband. Get medical attention immediately. If breathing has stopped, trained personnel should begin rescue breathing.

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 circumferential 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, 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.

Eye Contact

If a contact lens is present, DO NOT delay flushing or attempt to remove the lens. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open.

Ingestion

Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most Important Symptoms and Effects, Acute and Delayed

If on skin: may cause mild to severe irritation. The vapour also irritates the eyes.

Symptoms include sore, red eyes, and tearing.

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 edema 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 sufficient as a warning property for exposure to this substance, as it may deaden the sense of smell quickly.

Immediate Medical Attention and Special Treatment

Special Instructions

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Medical Conditions Aggravated by Exposure

Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis see toxicological information (Section 11).

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Not combustible. Use extinguishing agent suitable for surrounding fire. Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable Extinguishing Media

Do not spray water onto tank, vessel containing liquid asphalt as water reacts violently with product at elevated temperatures; risk of steam explosion!

Specific Hazards Arising from the Product

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be

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taken involving any personal risk or without suitable training. 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. Carbon oxides (CO, CO₂), smoke and irritating vapours as products of incomplete combustion. Hydrogen sulphide, smoke, fume, aldehydes, sulphur oxides, incomplete combustion products, oxides of carbon.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Dike and recover contaminated water for appropriate disposal. Use water spray to dilute spills to non-flammable mixtures.

Fire-fighters should enter area wearing specialized protective equipment. (Bunker Gear will not provide adequate protection.) chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: stop or reduce leak if safe to do so. Ventilate the area to prevent the gas from accumulating, especially in confined spaces. Contain and soak up spill with absorbent that does not react with spilled product. Do not use absorbents. Contain spill using noncombustible material such as vermiculite, earth or sand. Do NOT use combustible materials such as sawdust. Cover the spill surface with the appropriate type of foam to reduce the release of vapour. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product. Large spills or leaks: dike spilled product to prevent runoff. Knock down gas with fog or fine water spray. Do not direct water at spill or source. Dike and recover contaminated water for appropriate disposal. Let product solidify. Avoid generating dust. Avoid dry sweeping. If necessary, use a dust suppressant such as water. Do not use compressed air for clean-up. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal. If possible, turn leaking container so that gas escapes rather than liquefied gas. Do not return spilled product to its original container. Store recovered product in suitable containers that are: review Section 13 (Disposal Considerations) of this safety data sheet. Contact emergency services and manufacturer/supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with eyes, skin and clothing. Avoid breathing fumes, gas, or vapours. Use only with adequate ventilation. Wash thoroughly after handling and wear appropriate personal protective equipment. Harmful concentrations of hydrogen sulfide (H₂S) gas can accumulate in low-lying areas as well as the vapour space of storage and bulk transport compartments. Stay upwind and vent open hatches before unloading.

Conditions for Safe Storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials(see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA

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Asphalt (Bitumen)	0.5 mg/m ³ (l) A4 BEI		Not established			
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(asphalt bitumen) fume, as benzene soluble aerosol (H₂S) consult local authorities for acceptable exposure limits.

Appropriate Engineering Controls

General ventilation is usually adequate. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual Protection Measures

Eye/Face Protection

Wear safety glasses; chemical goggles (if splashing is possible). Wear chemical goggles; face shield (if handling molten material).

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots. I.e., leather or aluminize.

Respiratory Protection

If a risk assessment indicates that it is necessary (i.e. H₂S concentration is above 10ppm exposure limit), use a properly fitted, air-purifying or air-fed respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter cartridge or canister with a dust, fume or mist filter (R, or P series) may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Dark black Semi-solid.
Odour	Characteristic asphaltic odour or "rotten egg" odour if H ₂ S present, but odour is an unreliable warning, since it may deaden the sense of smell.
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Flash Point	290 °C (open cup)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.027 at 15 °C (59 °F)
Solubility	Insoluble in water; Soluble in all proportions in common organic solvents.
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic)
Other Information	
Physical State	Liquid
Bulk Density	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive.

Chemical Stability

Stable under normal storage conditions.

Possibility of Hazardous Reactions

Contact between heated Asphalt and water can cause a violent eruption. Can react with strong oxidizing agents, peroxides, acids and alkalies.

Conditions to Avoid

Under normal conditions of storage and use, hazardous polymerisation will not occur. Will violently react to water/moisture i.e., steam expansion.

Incompatible Materials

Reactive with oxidising agents.

Hazardous Decomposition Products

May release CO_x, NO_x, SO_x, PO_x, H₂S, hydrocarbons, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

See toxicological information (Section 11) skin contact; eye contact; inhalation.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Asphalt (Bitumen)		> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)

Skin Corrosion/Irritation

Prolonged exposure may cause sever skin burns. Harmful in contact with the skin. May cause an allergic skin reaction. Hot liquid product may cause serious thermal burns on direct contact. Asphalt fumes can increase susceptibility to sunburn.

Serious Eye Damage/Irritation

Prolonged exposure may cause serious eye damage. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact. Hydrogen Sulphide may cause eye irritation at 1-20ppm and acute conjunctivitis at higher concentrations. Above 50ppm H₂S, eye irritation may include symptoms of redness, severe swelling tearing, sensitivity to light and the appearance of 'Halos' around lights.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

At higher concentrations of H₂S (above 10 ppm), hydrogen sulphide is extremely toxic by inhalation, may cause respiratory-tract irritation, nose and throat irritation, depression of the central nervous system, respiratory failure, unconsciousness and/or death. Pulmonary edema 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 sufficient as a warning property for exposure to this substance, as it may deaden the sense of smell quickly.

Skin Absorption

Thermal burns from heat.

Ingestion

Severe irritation or burns to the mouth, throat and stomach.

Aspiration Hazard

Not known to be an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause severe skin burns and eye damage. May cause digestive tract burns. This product contains small quantities

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of Polycyclic Aromatic Hydrocarbons (PACs). Prolonged contact with these compounds has been associated with skin a lung tumours, anemia disorders of the liver, bone marrow and lymphoid tissues. Long term inhalation of benzene or xylene vapours can result in bone marrow abnormalities with damage to blood forming tissues and may cause anemia and other blood cell abnormalities. Immunodepressive effects have also been reported. Hydrogen Sulphide may reduce lung function, cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation, damage to cardiovascular system.

Respiratory and/or Skin Sensitization

Not available.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Asphalt (Bitumen)	Group 2B	A4		

The International Agency for Research on Cancer (IARC) has determined that occupational exposures to oxide asphalt and their emissions during roofing operations are "probably carcinogenic to humans" (Group A). IARC concluded that occupational exposures to hard asphalts and their emissions during mastic asphalt work are "possibly carcinogenic to humans" (Group 2B). IARC concluded that occupational exposure to straight-run asphalts and their emissions during paving operations are "possibly carcinogenic to humans" (Group 2B).

Reproductive Toxicity

Development of Offspring

No known significant effects or critical hazards.

Sexual Function and Fertility

Not available no known significant effects or critical hazards.

Effects on or via Lactation

Not known to cause effects on or via lactation.

Germ Cell Mutagenicity

Not available. No known significant effects or critical hazards.

Interactive Effects

Not available no information was located for: STOT (Specific Target Organ Toxicity) - Single Exposure, Interactive Effects.

SECTION 12. ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

Ecotoxicity

Marine Pollutant.

Persistence and Degradability

Not available.

Bioaccumulative Potential

No information was located.

Mobility in Soil

Majority of components - Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

This product is a non-hazardous waste. Recycle and reuse product, if possible. Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user. Treat waste in an approved

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waste disposal facility. Store product for disposal as described under Storage in Section 7 of this safety data sheet. Empty containers retain product residue. Follow label warnings even if container appears to be empty. Do not reuse empty containers. Dispose of or recycle empty containers through an approved waste management facility.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	3257	Penetration Graded Liquid Asphalt (Asphalt (Bitumen))	9	III

Special Precautions Please note: For US Shipments Only: ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100 c and below its flash point, 9, UN3257, PGIII PG* : Packing group

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL or are not required to be listed.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

Additional USA Regulatory Lists

HCS Classification : Not regulated.

Custom Regulatory 1

Europe inventory : Not determined

SECTION 16. OTHER INFORMATION

NFPA Rating Health - 1 Flammability - 1 Instability - 0

SDS Prepared By EPC & Risk Management Department

Phone No. 1 (416) 281 - 8181

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Key to Abbreviations ACGIH® = American Conference of Governmental Industrial Hygienists
AIHA® = AIHA® Guideline Foundation IARC = International Agency for Research on Cancer
NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health
OSHA = US Occupational Safety and Health Administration
RTECS® = Registry of Toxic Effects of Chemical Substances

References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).

Disclaimer To the best of our knowledge, the information herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the

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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.

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