



Warm Mix

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Warm Mix
Product Identifier	(i) Asphalt Cement; (ii) Bituminous material; (iii) Asphalt Flux;(iv) Paving Asphalt; (v) Bitumen; (vi) Pen Graded AC's (3GR) by Grade: 30/40, 60/70, 80/100, 85/100, 100/120, 100/150, 120/150c, 150/200, (vii) Graded (PG) Asphalt Cement 3G, 3GR, 3GV by grade PG 46-34, PG 46-40, PG 52-28, PG 52-34, PG 52-40, PG 58-22, PG 58-28, PG 58-34, PG 58-40, PG 64-22, PG 64-28, PG 64-34, PG 70-28, PG 70-34, PG 58-25HDR, PG 64-34HDR, PG 58-34HDR
Manufacturer / Supplier	McAsphalt Industries Ltd, 8800 Sheppard Ave East, Toronto, Ontario, M1B 5R4
Emergency Contact Information	CANUTEC, (613) 996 - 6666, 24 hours McAsphalt Industries Ltd., 1 - (800) - 268 - 4238, 8AM-5PM Monday to Friday
Use	Asphalt for warm mix asphalt purposes

2. HAZARDS IDENTIFICATION

Emergency Overview	Dark black Semi-solid. Characteristic asphaltic odour or "rotten egg" odour if H2S present, but odour is an unreliable warning, since it may deaden the sense of smell. odour. THERMAL HAZARD. Can cause thermal burns. Exposures require specialized first aid and medical follow-up. Prolonged or repeated skin contact can cause drying of the skin which may produce irritation or dermatitis.
Potential Health Effects	
Route of Exposure	See toxicological information (Section 11) skin contact; eye contact; inhalation.
Inhalation	Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include' weakness, dizziness, slurred speech, drowsiness, unconciosness and in cases of severe overexposure; coma and death. At higher concentrations (above 10 ppm), hydrgen 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.
Skin Contact	Slightly irritating to the skin. Contact with hot material can cause thermal burns.
Eye Contact	Slightly irritating to the eyes.
Ingestion	No known significant effects or critical hazards.
Effects of Long-Term (Chronic) Exposure	No known significant effects or critical hazards.
Carcinogenicity	An IARC working group has concluded that occupational exposures to straight-run bitumens and their emissions during road paving are 'possibly carcinogenic to humans' (Group 2B).
Teratogenicity / Embryotoxicity	No known significant effects or critical hazards.
Reproductive Toxicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
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 (Section11).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration %	Other Identifiers
Asphalt (Bitumen) fume	8052-42-4	99 - 100	
Hydrogen sulfide	7783-06-4	0-1	

Notes Antistripping additive added in quantities < 1% when indicated. Heated product may evolve vapors irritating to the nose, throat and lungs. See section 8 for further information.
NOTE: During storage or transit of hot asphalt, hydrogen sulphide may be generated. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Trimethylbenzene is an in-situ component of Stoddard solvent

4. FIRST AID MEASURES

First Aid Procedures

Inhalation Move victim to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen. Loosen tight clothing such as collar, tie, belt or waistband. Get medical attention immediately. If breathing has stopped, trained personnel should begin artificial respiration (AR).

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 flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open.

Ingestion Have victim rinse mouth with water. NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. DO NOT INDUCE VOMITING.

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

5. FIRE FIGHTING MEASURES

Flammable Properties Flammability of the product: Will burn on prolonged exposure to flame or high temperature.

Suitable Extinguishing Media Not combustible. Use extinguishing agents compatible with product and suitable for surrounding fire. Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable Extinguishing Media None known.

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

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

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6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	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 spilled 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 for Containment and Clean-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. 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 MSDS. Contact emergency services and manufacturer/supplier for advice.

7. HANDLING AND STORAGE

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.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Asphalt (Bitumen) fume	0.5 mg/m ³ (l) A4 BEI		Not established			
Hydrogen sulfide	1 ppm	5 ppm				

Exposure Guideline Comments (asphalt bitumen) fume, as benzene soluble aerosol (H₂S) consult local authorities for acceptable exposure limits. (H₂S) consult local authorities for acceptable exposure limits.

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.

Personal Protective Equipment (PPE)

Eye/Face Protection Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin Protection Wear chemical protective clothing e.g. gloves, aprons, boots. In case of an emergency (e.g. an uncontrolled release). Chemical-resistant, imperious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. nitrile rubber. Leather or Aluminize Gloves.

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Respiratory Protection Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
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
Boiling Point	> 300 °C (572 °F) (estimated)
Melting Point	Not available
Freezing Point	Not available
Relative Density (water = 1)	1.027 at 15 °C
Solubility in Water	Insoluble
Solubility in Other Liquids	Soluble in all proportions in common organic solvents.
pH	Not available
Partition Coefficient, n-Octanol/Water	Not available
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Evaporation Rate	Not available
Flash Point	> 230 °C (446 °F) (open cup)
Lower Flammable/Explosive Limit	Not available
Upper Flammable/Explosive Limit	Not available
Auto-ignition Temperature	400 °C (752 °F)

10. STABILITY AND REACTIVITY

Chemical Stability	Normally stable.
Conditions to Avoid	Under normal conditions of storage and use, hazardous polymerisation will not occur.
Incompatible Materials	Reactive with oxidising agents.
Hazardous Decomposition Products	May release CO _x , NO _x , SO _x , PO _x , H ₂ S, hydrocarbons, smoke and irritating vapours when heated to decomposition.
Possibility of Hazardous Reactions	Contact between heated Asphalt and water can cause a violent eruption.

11. TOXICOLOGICAL INFORMATION

LC50/LD50 Values

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
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Asphalt (Bitumen) fume		> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)
Hydrogen sulfide	~ 444 ppm (rat) (4-hour exposure) (gas)		

Skin Irritation/Corrosion

Not available.

Eye Irritation/Corrosion

Irritating to eyes. 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 - 20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H₂S, eye irritation may include symptoms of redness, sever swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Effects of Long-Term (Chronic) Exposure

Effects similar to effects of short-term exposure, as described above.

Respiratory and/or Skin Sensitization

Not available.

Carcinogenicity

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

IARC: 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).

Teratogenicity / Embryotoxicity

Not available.

Reproductive Toxicity

Not available.

Mutagenicity

Not available.

No information was located for: Effects of Short-Term (Acute) Exposure, Toxicologically Synergistic Materials

12. ECOLOGICAL INFORMATION

General Comments	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	No information was located.
Bioaccumulation / Accumulation	No information was located.
Mobility	Majority of components - Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

13. DISPOSAL CONSIDERATIONS

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. This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground or into any body of water. Treat waste in an approved waste disposal facility. Empty containers retain product residue. Follow label warnings even if container appears to be empty. Dispose of or recycle empty containers through an approved waste management facility. Do not reuse empty containers.

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14. TRANSPORT INFORMATION

Shipping Information

Not regulated under Canadian TDG Regulations.

Regulation	UN No.	Shipping Name	Class	Packing Group
US DOT	3257	Asphalt Cement (ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100 c and below its flash point, 9, UN3257, PGIII)	9	III

Other Transport Information

Special Shipping Information 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

15. REGULATORY INFORMATION

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

US OSHA Regulatory Status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200 (1994)), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

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.

Europe inventory

Not determined

16. OTHER INFORMATION

NFPA Rating Health - 2 Flammability - 0 Instability - 0

MSDS Prepared By EPC & Risk Management Department

Phone No. 1 (416) 281 - 8181

Date of Preparation December 10, 2014

Revision Indicators The following MSDS content was changed on May 19, 2015:
Disclaimer.

Key to Abbreviations ACGIH® = American Conference of Governmental Industrial Hygienists
AIHA = American Industrial Hygiene Association
HSDB® = Hazardous Substances Data Bank
IARC = International Agency for Research on Cancer
NFPA = National Fire Prevention 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

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Disclaimer

and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Accelrys, Inc. Available from Canadian Centre for Occupational Health and Safety (CCOHS). 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 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.