

## 1. Identification

<b>Product identifier</b>	<b>Asphalt PG 64-34 w Redicote</b>	
<b>Other means of identification</b>	None	
<b>Recommended use</b>	Component of hot asphalt mix	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	Irving Oil Refining G.P.	
<b>Address</b>	Box 1260 Saint John, NB E2L 4H6 Canada	
<b>Telephone</b>	Phone:	(506) 202-2000
	Refinery:	(506) 202-3000
<b>e-mail</b>	Not available.	
<b>Emergency phone number</b>	1-800-424-9300 (CHEMTREC)	
<b>Supplier</b>	See above.	

## 2. Hazard identification

<b>Physical hazards</b>	Flammable solids	Category 1
<b>Health hazards</b>	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Carcinogenicity	Category 2
<b>Environmental hazards</b>	Not classified.	

**Label elements**



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Flammable solid. Suspected of causing cancer. Causes skin irritation. Causes serious eye irritation.

**Precautionary statement**

<b>Prevention</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
<b>Response</b>	In case of fire: Use appropriate media to extinguish. IF exposed or concerned: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. Specific treatment (see information on this label). If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Storage** Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards** None known.

**Supplemental information** None

## 3. Composition/information on ingredients

**Mixtures**

Chemical name	Common name and synonyms	CAS number	%
Asphalt		8052-42-4	84.82
2-Propenoic acid, ethyl ester, polymer with ethene		9010-86-0	4.49
Sulphur		7704-34-9	4.46
Hydrogen sulphide		7783-06-4	0.08

**Composition comments** \*Asphalt is a complex mixture of high molecular weight hydrocarbons. Its exact composition depends on the source of the crude oil from which it was produced and the refining methods used. This product may contain small amounts of Hydrogen sulphide which may accumulate in confined spaces.

#### 4. First-aid measures

<b>Inhalation</b>	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
<b>Skin contact</b>	IF ON SKIN: Wash with plenty of water. Specific treatment (see information on this label). If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Ingestion</b>	Rinse mouth. Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
<b>Indication of immediate medical attention and special treatment needed</b>	Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wear rubber gloves and chemical splash goggles. Keep out of reach of children.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Carbon dioxide. Dry chemical. Water spray. Foam.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	vapours are heavier than air and may travel along the ground to some distant source of ignition and flash back. Firefighters should wear a self-contained breathing apparatus.
<b>Hazardous combustion products</b>	May include and are not limited to: Oxides of carbon. Oxides of nitrogen. Polycyclic aromatic hydrocarbons (PAHs). Formaldehyde. Acrolein. Hydrogen sulphide. Oxides of sulphur.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear full protective clothing including self contained breathing apparatus. Structural firefighters protective clothing will only provide limited protection.
<b>Fire fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. In the event of fire and/or explosion do not breathe fumes.
<b>General fire hazards</b>	Flammable solid.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8.
<b>Methods and materials for containment and cleaning up</b>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Stop the flow of material, if this is without risk. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. Prevent entry into waterways, sewers, basements or confined areas.

**Environmental precautions**

Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.

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## 7. Handling and storage

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**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Ground and bond containers when transferring material. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use personal protective equipment as required. Wash thoroughly after handling. Non-sparking equipment. Explosion-proof ventilation. Intrinsically safe electrical equipment. Use good industrial hygiene practices in handling this material. When using do not eat or drink. Keep container tightly closed.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers. Keep out of reach of children.

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## 8. Exposure controls/Personal protection

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**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m <sup>3</sup>	Inhalable fraction.
Hydrogen sulphide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	5 mg/m <sup>3</sup>	Fume.
Hydrogen sulphide (CAS 7783-06-4)	Ceiling	21 mg/m <sup>3</sup>	
		15 ppm	
	TWA	14 mg/m <sup>3</sup> 10 ppm	
Sulphur (CAS 7704-34-9)	TWA	10 mg/m <sup>3</sup>	

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m <sup>3</sup>	Aerosol, inhalable.
Hydrogen sulphide (CAS 7783-06-4)	Ceiling	10 ppm	

**Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)**

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m <sup>3</sup>	Inhalable fraction.
Hydrogen sulphide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m <sup>3</sup>	Inhalable fraction.
Hydrogen sulphide (CAS 7783-06-4)	STEL	15 ppm	
	TWA	10 ppm	

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	5 mg/m <sup>3</sup>	Fume.
Hydrogen sulphide (CAS 7783-06-4)	STEL	21 mg/m <sup>3</sup>	
		15 ppm	
	TWA	14 mg/m <sup>3</sup>	

Components	Type	Value	Form
		10 ppm	
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).		
<b>Exposure guidelines</b>	Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH or OSHA PEL.		
<b>Appropriate engineering controls</b>	Mechanical ventilation should be used when handling this product in enclosed spaces. Local exhaust ventilation may be necessary.		
<b>Individual protection measures, such as personal protective equipment</b>			
<b>Eye/face protection</b>	Face shield or chemical goggles.		
<b>Skin protection</b>			
<b>Hand protection</b>	Heat-protective gloves.		
<b>Other</b>	Wear appropriate chemical resistant clothing. Coveralls to prevent skin contact. Neck closed and sleeves rolled down. Natural fibres are preferred. If clothing or footwear becomes contaminated with the product, remove it immediately and completely decontaminate it before re-use, or discard it.		
<b>Respiratory protection</b>	Do not attempt rescue of an hydrogen sulfide knockdown victim without the use of proper respiratory protective equipment. Emergency responders should wear self-contained breathing apparatus (SCBA) to avoid inhalation of vapours generated by this product during a spill or other clean-up operations. A NIOSH- approved air purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.		
<b>Thermal hazards</b>	Not available.		
<b>General hygiene considerations</b>	When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice.		

## 9. Physical and chemical properties

<b>Appearance</b>	Solid at room temperature. Viscous liquid above 194°F (90°C).
<b>Physical state</b>	Solid.
<b>Form</b>	Solid at room temperature. Viscous liquid above 194°F (90°C).
<b>Colour</b>	Black
<b>Odour</b>	Rotten egg. Note: H2S deadens the sense of smell. Absence of rotten eggs smell does not mean absence of H2S.
<b>Odour threshold</b>	< 0.15 ppm (Hydrogen Sulfide)
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	90 °C (194 °F) (Typically)
<b>Initial boiling point and boiling range</b>	> 204 °C (> 399.2 °F) (Typically)
<b>Flash point</b>	> 230.0 °C (> 446.0 °F)
<b>Evaporation Rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Flammable solid.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit – upper (%)</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (Water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	485 °C (905 °F) (Typically)

<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Viscous liquid above 485C (Typically)

## 10. Stability and reactivity

<b>Reactivity</b>	This product may react with strong oxidizing agents.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerisation does not occur.
<b>Conditions to avoid</b>	Do not mix with other chemicals. Contact with incompatible materials. Heat, open flames, static discharge, sparks and other ignition sources.
<b>Incompatible materials</b>	Oxidizers. Bromine trifluoride. Lithium Chlorinated products.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of nitrogen. Oxides of carbon. Polycyclic aromatic hydrocarbons (PAHs). Aromatic hydrocarbons. Formaldehyde. Acrolein. Hydrogen sulphide. Oxides of sulphur.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Prolonged inhalation may be harmful. Sense of smell may be impaired at concentrations of hydrogen sulphide at approximately 20 ppm, with headache and respiratory tract lung irritation. At 250 to 500ppm, potentially fatal pulmonary edema may occur. Dizziness, sudden (often fatal) collapse, unconsciousness and death occur at higher concentrations. Pulmonary edema may be delayed as long as 48 hours after exposure.
<b>Skin contact</b>	Causes skin irritation. Second and third degree burns from contact with hot asphalt.
<b>Eye contact</b>	Causes serious eye irritation. Hydrogen sulphide is very toxic. At concentrations as low as 1 to 5 ppm, nausea and severe eye irritation may occur.
<b>Ingestion</b>	Harmful if swallowed. High exposure to vanadium can cause nausea, vomiting, abdominal pain and greenish discoloration of the tongue.

**Symptoms related to the physical, chemical and toxicological characteristics**  
Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

### Information on toxicological effects

#### Acute toxicity

Components	Species	Test results
2-Propenoic acid, ethyl ester, polymer with ethene (CAS 9010-86-0)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Not available	
Asphalt (CAS 8052-42-4)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	>= 2000 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	5000 mg/kg
Hydrogen sulphide (CAS 7783-06-4)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Human	600 ppm, 30 minutes
	Monkey	0.7 mg/L, 35 Minutes
	Mouse	335 ppm, 4 Hours
		1.5 mg/L, 18 Minutes
		0.4 mg/L, 410 Minutes
		0.1 mg/L, 804 Minutes
	Rat	> 0.4 mg/L, 960 Minutes

Components	Species	Test results
		444 ppm, 4 Hours
		415 ppm, 4 Hours
		410 ppm, 4 Hours
		1.5 mg/L, 14 Minutes
		1 mg/l/4h
<i>Oral</i>		
LD50	Not available	
Sulphur (CAS 7704-34-9)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	>= 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	>= 6.2 mg/l/4h
<i>Oral</i>		
LD50	Human	> 5000 mg/kg
	Rat	>= 3000 mg/kg
<b>Skin corrosion/irritation</b>	Causes skin irritation.	
<b>Exposure minutes</b>	Not available.	
<b>Erythema value</b>	Not available.	
<b>Oedema value</b>	Not available.	
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.	
<b>Corneal opacity value</b>	Not available.	
<b>Iris lesion value</b>	Not available.	
<b>Conjunctival reddening value</b>	Not available.	
<b>Conjunctival oedema value</b>	Not available.	
<b>Recover days</b>	Not available.	
<b>Respiratory or skin sensitisation</b>		
<b>Canada - Alberta OELs: Irritant</b>		Irritant
Asphalt (CAS 8052-42-4)		
<b>Respiratory sensitisation</b>	Not available.	
<b>Skin sensitisation</b>	This product is not expected to cause skin sensitisation.	
<b>Germ cell mutagenicity</b>	Contains a potential mutagen.	
<b>Carcinogenicity</b>	Suspected of causing cancer.	
<b>ACGIH Carcinogens</b>		
Asphalt (CAS 8052-42-4)		A4 Not classifiable as a human carcinogen.
<b>Canada - Manitoba OELs: carcinogenicity</b>		
ASPHALT (BITUMEN) FUME, AS BENZENE-SOLUBLE AEROSOL, INHALABLE FRACTION (CAS 8052-42-4)		Not classifiable as a human carcinogen.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Asphalt (CAS 8052-42-4)		Volume 103 - 2B Possibly carcinogenic to humans.
<b>Reproductive toxicity</b>	Not available.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not available.	
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Acne-like lesions. Pigmentation of skin. Chronic exposure to vanadium may damage the kidneys. Repeated high exposure to vanadium may cause anemia.	
<b>Further information</b>	Not available.	

## 12. Ecological information

**Ecotoxicity** See below

### Ecotoxicological data

Components		Species	Test results
Hydrogen sulphide (CAS 7783-06-4)			
<b>Aquatic</b>			
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )	0.009 mg/L, 96 hours
Sulphur (CAS 7704-34-9)			
<b>Aquatic</b>			
Fish	LC50	Western mosquitofish ( <i>Gambusia affinis</i> )	> 10000 mg/L, 96 hours
<b>Persistence and degradability</b>	No data is available on the degradability of this product.		
<b>Bioaccumulative potential</b>	No data available.		
<b>Mobility in soil</b>	No data available.		
<b>Mobility in general</b>	Not available.		
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

## 13. Disposal considerations

<b>Disposal instructions</b>	Allow product to cool and solidify. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**General** Canada: TDG Proof of Classification: In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue. If applicable, the technical name and the classification of the product will appear below.

### Transportation of Dangerous Goods (TDG - Canada)

#### Basic shipping requirements:

<b>UN number</b>	UN3257
<b>Proper shipping name</b>	ELEVATED TEMPERATURE LIQUID, N.O.S.
<b>Technical name</b>	Asphalt
<b>Hazard class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Yes
<b>Special provisions</b>	16

TDG



## 15. Regulatory information

**Canadian federal regulations** This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (SOR/2015-17) and the SDS contains all the information required by the HPR.

### Export Control List (CEPA 1999, Schedule 3)

Not listed.

**Greenhouse Gases**

Not listed.

**Precursor Control Regulations**

Not regulated.

**WHMIS status**                      Controlled**Inventory Status**

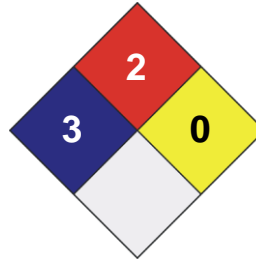
Country(s) or region	Inventory Name	On Inventory (Yes/No)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**16. Other information**

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

<b>HEALTH</b>	*	<b>3</b>
<b>FLAMMABILITY</b>		<b>2</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>
<b>PERSONAL PROTECTION</b>		<b>X</b>

**Issue date**                      13-July-2016**Revision date**                13-July-2016**Version #**                      01

**Other information**                This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (SOR/2015-17) and the SDS contains all the information required by the HPR. For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

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