



# SAFETY DATA SHEET

## 1. Identification

**Product identifier** PG 58S-28 with Zycotherm SP  
**Other means of identification** None.  
**Recommended use** Component of hot asphalt mix  
**Recommended restrictions** None known.

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

**Company name** Irving Oi. Refining G.P.  
**Address** Box 1260  
Saint John, NB E2L 4H6  
Canada  
**Telephone** (506) 202-2000  
Refinery: (506) 202 3000  
**E-mail** Not available.

**Emergency phone number** 1 800 424 9300  
(CHEMTREC)

**Supplier** See above.

## 2. Hazard Identification

**Physical hazards** Not classified.  
**Health hazards** Carcinogenicity Category 2  
**Environmental hazards** Not classified.

### Label elements



**Signal word** Warning  
**Hazard statement** Suspected of causing cancer.  
**Precautionary statement**  
**Prevention** Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Wear protective gloves, protective clothing, eye protection and face protection.  
**Response** IF exposed or concerned: Get medical attention.  
**Storage** Store locked up.  
**Disposal** Dispose of container in accordance with local, regional, national and 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	80 - 100
Sulphur		7704-34-9	2.5 - 10
Nickel		7440-02-0	< 0.1
Vanadium		7440-62-2	< 0.1

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**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.

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#### 4. First-aid measures

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<b>Inhalation</b>	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention. For breathing difficulties, oxygen may be necessary.
<b>Skin contact</b>	In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily. Cover wound with sterile dressing.
<b>Eye contact</b>	If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention immediately. Remove contact lenses, if applicable, and continue flushing. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth. Do not induce vomiting. Obtain medical attention.
<b>Most important symptoms/effects, acute and delayed</b>	Direct contact can produce thermal burns. Inhalation of vapour can cause respiratory tract irritation or chemical burns. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. In high concentrations, hydrogen sulphide may produce pulmonary edema and respiratory depression or paralysis. Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Symptoms may be delayed.
<b>General information</b>	IF exposed or concerned: Get medical advice. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin.  Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

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#### 5. Fire-fighting measures

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<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>	Vapors will ignite and burn at temperatures exceeding the flash point.
<b>Hazardous combustion products</b>	May include and are not limited to: Oxides of carbon. Polycyclic aromatic hydrocarbons (PAHs). Hydrogen sulphide.
<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. In the event of fire, wear self-contained breathing apparatus.
<b>Fire fighting equipment/instructions</b>	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. Use water spray to cool unopened containers.
<b>General fire hazards</b>	If product is heated above its flash point it will release flammable vapors which can burn in the open or be explosive in confined spaces if exposed to ignition source.

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#### 6. Accidental release measures

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<b>Personal precautions, protective equipment and emergency procedures</b>	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.
<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. Leave the molten product to cool down. Remove solidified product mechanically. Following product recovery, flush area with water. Prevent entry into waterways, sewers, basements or confined areas.
<b>Environmental precautions</b>	Do not discharge into lakes, streams, ponds or public waters.

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#### 7. Handling and storage

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<b>Precautions for safe handling</b>	Avoid contact with hot material. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Avoid contact with eyes, skin and clothing. Use personal protective equipment as required. Avoid prolonged exposure. Use only with adequate ventilation. Observe good industrial hygiene practices. Wash thoroughly after handling. When handling, do not eat, drink or smoke.
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Conditions for safe storage,  
including any incompatibilities

Store locked up.  
Keep away from heat, sparks and open flame.  
Store in a well-ventilated place.  
Store away from incompatible materials (see Section 10 of the SDS).  
Keep out of reach of children.

## 8. Exposure controls/Personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fume.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m3	Inhalable fraction.

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

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	5 mg/m3	Fume.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m3	
Sulphur (CAS 7704-34-9)	TWA	10 mg/m3	

#### 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/m3	Aerosol, inhalable.
Nickel (CAS 7440-02-0)	TWA	0.05 mg/m3	

#### 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/m3	Inhalable fume.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m3	Inhalable fraction.

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

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fraction.
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	Inhalable fraction.

#### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	TWA	5 mg/m3	Fume.
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	

#### Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value	Form
Asphalt (CAS 8052-42-4)	15 minute	1.5 mg/m3	Inhalable fraction.
	8 hour	0.5 mg/m3	Inhalable fraction.
Nickel (CAS 7440-02-0)	15 minute	3 mg/m3	Inhalable fraction.
	8 hour	1.5 mg/m3	Inhalable fraction.

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Exposure guidelines

Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH or OSHA PEL.

### Appropriate engineering controls

Mechanical ventilation should be used when handling this product in enclosed spaces. Local exhaust ventilation may be necessary.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Face shield or chemical goggles.

#### Skin protection

##### Hand protection

Heat-protective gloves. Confirm with a reputable supplier first.

##### Other

For molten product, use any type rubber thermal insulating gloves and other clothing as necessary to protect from thermal burns. 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. Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).
<b>Thermal hazards</b>	Not available.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

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### 9. Physical and chemical properties

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<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>	Note: H2S deadens the sense of smell. Absence of rotten eggs smell does not mean absence of H2S. Rotten egg.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not applicable
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	>204°C (>400°F) (Typically)
<b>Flash point</b>	> 180.0 °C (> 356.0 °F) Cleveland open cup
<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>	287.78 - 307.22 °C (550 - 585 °F) (Typically)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Specific gravity</b>	~ 1 @ 20°C (Typically)

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### 10. Stability and reactivity

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<b>Reactivity</b>	Not available.
<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. Heat, open flames, static discharge, sparks and other ignition sources.
<b>Incompatible materials</b>	Oxidizers.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of nitrogen. Oxides of carbon. Polycyclic aromatic hydrocarbons (PAHs). Hydrogen sulphide.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Inhalation of vapours/fumes generated by heating this product may cause respiratory irritation with throat discomfort, coughing or difficulty breathing. 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>	Second and third degree burns from contact with hot asphalt.
<b>Eye contact</b>	Fumes released during thermal processing may cause eye irritation.
<b>Ingestion</b>	Not a normal route of exposure. Contact with molten material may cause thermal burns. May cause stomach distress, nausea or vomiting.

### Symptoms related to the physical, chemical and toxicological characteristics

Contact with molten material may cause thermal burns.

### Information on toxicological effects

#### Acute toxicity

Components	Species	Test Results
<b>Asphalt (CAS 8052-42-4)</b>		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg, 24 Hours, ECHA
<i>Inhalation</i>		
LC50	Rat	> 94.4 mg/m <sup>3</sup> , 4.5 Hours, ECHA
<i>Oral</i>		
LD50		> 5000 mg/kg, ECHA
<b>Nickel (CAS 7440-02-0)</b>		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Rat	2550 mg/m <sup>3</sup> , 4 h, CCOHS
<i>Oral</i>		
LD50	Rat	> 9000 mg/kg, ECHA
<b>Sulphur (CAS 7704-34-9)</b>		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg, 24 Hours, ECHA
<i>Inhalation</i>		
LC50	Rat	> 9.2 mg/l/4h, Spectrum Chemical > 5.4 g/m <sup>3</sup> , 4 Hours, ECHA > 5.4 mg/L, 4 Hours, ECHA
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, Sigma > 2200 mg/kg, ECHA
<b>Vanadium (CAS 7440-62-2)</b>		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	2000 mg/kg
<b>Skin corrosion/irritation</b>		
Thermal burn hazard - contact with hot material may cause thermal burns.		
<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>	Fumes released during thermal processing may cause 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>	
Asphalt (CAS 8052-42-4)	Irritant
<b>Respiratory sensitisation</b>	Not available.
<b>Skin sensitisation</b>	This product is not expected to cause skin sensitisation.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	Suspected of causing cancer.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Asphalt (CAS 8052-42-4)	Volume 103 - 2B Possibly carcinogenic to humans.
Nickel (CAS 7440-02-0)	Volume 49 - 2B Possibly carcinogenic to humans.
<b>Reproductive toxicity</b>	Not classified.
<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. Chronic exposure to vanadium may damage the kidneys. Repeated high exposure to vanadium may cause anemia. Acne-like lesions. Pigmentation of skin.
<b>Further information</b>	Not available.

## 12. Ecological information

<b>Ecotoxicity</b>	See below	
<b>Ecotoxicological data</b>		
<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Nickel (CAS 7440-02-0)		
Algae	IC50	Algae 0.18 mg/L, 72 Hours
Crustacea	EC50	Daphnia 100 mg/L, 48 Hours
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia magna) 1 mg/L, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) 2.923 mg/L, 96 hours
Sulphur (CAS 7704 34 9)		
<b>Aquatic</b>		
Fish	LC50	Western mosquitofish (Gambusia affinis) > 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>	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).

**Contaminated packaging**

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.

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**14. Transport information**


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**General**

Canada: TDG Proof of Classification: Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.

As per TDG Part 2, Section 2.43:

A substance is included in Class 9, Miscellaneous Products, Substances or Organisms, if it:

(b) is not included in Class 9 in column 3 of Schedule 1 and does not meet the criteria for inclusion in any of Classes 1 to 8 and

(iii) except for asphalt or tar, is offered for transport or transported at a temperature greater than or equal to 100°C if it is in a liquid state or at a temperature greater than or equal to 240°C if it is in a solid state.

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

Not regulated as dangerous goods.

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**15. Regulatory information**


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**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**

Hazardous

**International regulations**

Hazardous

**Inventory status**

Country(s) or region	Inventory name	On Inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
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)

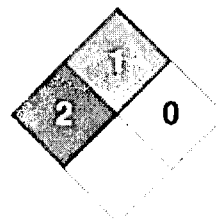
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**16. Other information**


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LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	* 2
ENVIRONMENTAL	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Issue date**

04-March-2021

**Revision date**

04-March-2021

**Version No.**

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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