

Material Safety Data Sheet**1. MATERIAL AND COMPANY IDENTIFICATION**

Material Name : Shell SC-70 Liquid Asphalt
Company : Shell Oil Products US
P. O. Box 4453
Houston, TX 77210-4453
United States

MSDS Request : 877-276-7285

Emergency Telephone Number

Spill Information : 877-242-7400

Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

Distillates (petroleum), vacuum	70592-78-8	40.00 - 100.00 %
Distillates (petroleum), heavy naphthenic	64741-53-3	0.00 - 40.00 %
Distillates (petroleum), straight-run, middle	64741-44-2	0.00 - 35.00 %
Kerosine	8008-20-6	0.00 - 35.00 %
Residues (petroleum), vacuum	64741-56-6	0.00 - 60.00 %

Crude petroleum oil may contain trace levels of Hydrogen sulphide (H₂S).
Refer to chapter 16 for full text of EC R-phrases.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance and Odour	: Black. Semi-solid at ambient temperature. Liquid at high temperatures. Asphalt or rotten egg.
Health Hazards	: Irritating to skin. High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea. Hydrogen sulphide (H ₂ S), an extremely flammable and toxic gas, and potentially toxic sulphur oxides may be present. A component or components of this material may cause cancer.
Safety Hazards	: Hydrogen sulphide (H ₂ S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers.

Health Hazards**Inhalation**

: Hydrogen sulphide (H₂S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting

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- Skin Contact** : in dizziness, light-headedness, headache and nausea.
: Contact with hot material can cause thermal burns which may result in permanent skin damage and/or blindness. Irritating to skin.
- Eye Contact** : Hot product may cause severe eye and skin burns. Moderately irritating to eyes.
- Ingestion** : Under normal conditions of use, this is not expected to be a primary route of exposure.
- Other Information** : A component or components of this material may cause cancer.
- Signs and Symptoms** : Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Eye irritation signs and symptoms may include a burning sensation and a temporary redness of the eye. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.

4. FIRST AID MEASURES

- General Information** : DO NOT DELAY. Keep victim calm. Obtain medical treatment immediately.
- Inhalation** : If inhalation of mists, fumes or vapour causes irritation to the nose or throat, remove to fresh air. If rapid recovery does not occur, obtain medical attention. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardiopulmonary Resuscitation (CPR) as required and transport to the nearest medical facility.
- Skin Contact** : Cover the burn area loosely with a sterile dressing, if available. Do not use solvent to remove the product. If contact with hot product, cool the burn area by flushing with large amounts of water. Do not attempt to remove anything from the burn area or apply burn creams or ointments. Cover the burn area loosely with a sterile dressing, if available. Transport to the nearest medical facility for additional treatment. If persistent irritation occurs, obtain medical attention. It should be noted this product contracts on cooling. Remove contaminated clothing.
- Eye Contact** : Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist, transport to the nearest medical facility for additional treatment. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. Under normal conditions of use, this is not expected to be a primary route of exposure.
- Advice to Physician** : If removal is attempted, mineral oil (not mineral spirits) or a

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Shell SC-70 Liquid Asphalt

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According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

mineral oil based ointment may be applied to help soften the product to facilitate removal. Hydrogen sulphide (H₂S) - CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER: Oxygen therapy. Consult a Poison Control Centre for guidance.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : 121 °C / 250 °F
Specific Hazards : Material will not burn unless preheated.
Extinguishing Media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Protective Equipment for Firefighters : Wear full protective clothing and self-contained breathing apparatus. Exposure to decomposition products may be a hazard to health.
Additional Advice : Containers exposed to intense heat from fires should be cooled with large quantities of water. Do not use water in a jet. Evacuate the area of all non-essential personnel. Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with skin, eyes and clothing. Remove contaminated clothing. Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet.

- Protective measures** : Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways. Hot product should be handled so that there is no risk of burns. Use compressed air or fresh air respiratory equipment in confined spaces. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Clean Up Methods : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

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- Additional Advice** : This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA. U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Centre at (800) 424-8802. Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Centre at (800) 424-8802.

7. HANDLING AND STORAGE

- General Precautions** : Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Avoid contact with hot liquid to prevent thermal burns.
- Handling** : Avoid contact with skin, eyes, and clothing. Do not breathe mists, fumes or vapours from heated product. Ensure adequate ventilation when using. Surfaces that are sufficiently hot may ignite liquid material. The inherent toxic and olfactory (sense of smell) fatiguing properties of hydrogen sulphide require that air monitoring alarms be used if concentrations are expected to reach harmful levels such as in enclosed spaces, heated transport vessels and spill or leak situations. If the air concentration exceeds 50 ppm, the area should be evacuated unless respiratory protection is in use. Use only in well-ventilated areas.
- Storage** : Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Keep tanks covered and containers tightly closed when not in use. Bulk storage tanks should be diked (bunded). Do not smoke in storage areas. Hydrogen sulphide may accumulate in tanks during long term storage at high temperatures. For this reason, tank vapour spaces should be regarded as hazardous. Storage Temperature: Refer to the Technical Data Sheet for correct storage and handling temperatures.
- Product Transfer** : Do not allow molten material to contact water or liquids as this can cause violent eruptions, splatter hot material, or ignite flammable material. Keep containers closed when not in use. Steam coils may be used as a heating medium.
- Recommended Materials** : For containers or container linings, use stainless steel.
- Unsuitable Materials** : For containers or container linings avoid PVC, polyethylene or high density polyethylene.
- Container Advice** : Containers, even those that have been emptied, can contain explosive vapours.
- Precautions during discharge from bitumen tanks.** : Tanks may be heated by hot oil, steam, electricity or flame tubes. When pumping product from a storage or road tank, care should be taken to avoid the risk of fire or explosion as a result of exposing hot heater tubes. The tubes should be

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covered by a minimum of 150mm of hot product, unless the heat has been switched off for a period of sufficient cooling. Bulk temperature should be kept as low as possible, to enable efficient discharge. A check should be made to ensure that the receiving tank has sufficient ullage space to accommodate the load.

Additional Information : Hydrogen sulphide (H2S or Sour Gas) may be present when loading and unloading transport vessels. Stay upwind and away from newly opened hatches and allow to vent thoroughly before handling material. Steam may be used to vent hatches. Keep all sources of ignition away from loading area. See National Fire Protection Association (NFPA) Code 655 for specific information on the crushing, grinding, pulverizing or handling of sulphur.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Distillates (petroleum), heavy naphthenic	ACGIH	TWA(Mist.)		5 mg/m3	
Distillates (petroleum), heavy naphthenic	ACGIH	STEL(Mist.)		10 mg/m3	
Kerosine	ACGIH	TWA(Non-aerosol.)		200 mg/m3	as total hydrocarbon vapor
Kerosine	ACGIH	SKIN_DES(Non-aerosol.)			Can be absorbed through the skin.as total hydrocarbon vapor

Additional Information : Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Launder contaminated clothing before re-use. Leather shoes and clothing cannot be decontaminated. If there is a potential of exposure, dispose of these materials. Wash hands before eating, drinking, smoking and using the toilet.

Exposure Controls : The level of personal protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Use sealed systems as far as possible. Use intrinsically safe, exhaust ventilation if there is a risk of inhalation of vapours, mists or aerosols. Eye washes and showers for emergency use. Wash hands before eating, drinking, smoking and using the toilet. Contaminated clothing must be removed as soon as possible. It must be relaundered before reuse.

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Personal Protective Equipment	:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Respiratory Protection	:	All respiratory protection equipment and use must be in accordance with local regulations. No respiratory protection is ordinarily required under normal conditions of use. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Hand Protection	:	Chemical and heat resistant gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
Eye Protection	:	If material is handled such that it could be splashed into eyes, protective eyewear is recommended. For normal operations with hot material wear safety hat with visor.
Protective Clothing	:	For normal operations with hot material wear chemical and heat resistant boots and overalls (with cuffs over gloves and legs over boots). The use of a neck apron is recommended.
Environmental Exposure Controls	:	Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use. Avoid contact with skin, eyes, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Black. Semi-solid at ambient temperature. Liquid at high temperatures.
Odour	:	Asphalt or rotten egg.
Flash point	:	121 °C / 250 °F
Density	:	ca. 1.018 g/cm ³ at 25 °C / 77 °F
Kinematic viscosity	:	4,200 mm ² /s

10. STABILITY AND REACTIVITY

Stability	:	Stable under normal conditions of use.
Conditions to Avoid	:	Avoid heat, sparks, open flames and other ignition sources.
Materials to Avoid	:	Do not allow molten material to contact water or liquids as this can cause violent eruptions, splatter hot material, or ignite flammable material. Reacts with strong oxidising agents. Avoid contamination of thermal insulation near hot surfaces by oil and bitumen and replace lagging where necessary, with a non-absorbent type of insulation. Self-heating, leading to auto-ignition at the surfaces of porous or fibrous materials impregnated with bitumen or condensates from bituminous fumes, can occur at temperatures below 100°C.
Hazardous Decomposition Products	:	Hydrogen sulphide.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	:	Information given is based on data on the components and the toxicology of similar products.
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- Acute Oral Toxicity** : Expected to be of low toxicity: LD50 >2000 mg/kg , Rat
- Acute Dermal Toxicity** : Expected to be of low toxicity: LD50 >2000 mg/kg , Rabbit
- Acute Inhalation Toxicity** : High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

- Skin Irritation** : Contact with hot material can cause thermal burns which may result in permanent skin damage and/or blindness.
Irritating to skin.

- Eye Irritation** : Expected to be slightly irritating.
- Respiratory Irritation** : Slightly irritating.
- Sensitisation** : Not expected to be a skin sensitiser.
- Carcinogenicity** : Known human carcinogen. (Distillates (petroleum), heavy naphthenic)
Bitumens contain low concentrations of Polycyclic Aromatic Compounds (PACs). In undiluted bitumens these PACs are not considered to be bio-available. However, if bitumens are mixed with diluents to obtain a low viscosity at ambient temperatures, it is believed that such materials may become bio-available. Despite the known presence of PACs, experimental work has shown that the cutback bitumens we supply are unlikely to be associated with carcinogenic effects.

Material	Carcinogenicity Classification
Distillates (petroleum), heavy naphthenic	NTP: Known carcinogen.
Distillates (petroleum), heavy naphthenic	IARC 1: Human carcinogen.
Kerosine	ACGIH Group A3: Confirmed animal carcinogen with unknown relevance to humans.
Kerosine	IARC 2A: Probable carcinogen.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product.

- Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be toxic: LL/EL/IL50 1-10 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).

- Mobility** : This product will form a film on the surface of water and spread. The solvent will evaporate and the bitumen will adsorb to the sediment. In contact with soil, it can penetrate the upper layers and/or affect nearby watercourses before hardening. In time the solvent will evaporate.

- Persistence/degradability** : Expected to be not inherently biodegradable.
- Bioaccumulation** : Has the potential to bioaccumulate. In practice, the very low water solubilities and high molecular weights of these substances are such that their bioavailability to aquatic organisms is limited and therefore bioaccumulation is unlikely.

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Other Adverse Effects : Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

Material Disposal : It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

Local Legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION**US Department of Transportation Classification (49CFR)**

Identification number UN 3257
Proper shipping name Elevated temperature liquid, n.o.s.
Class / Division 9
Packing group III

Emergency Response Guide 128
No .

IMDG

Identification number UN 3257
Proper shipping name ELEVATED TEMPERATURE LIQUID, N.O.S.
Class / Division 9
Packing group III
Marine pollutant: No

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)**

Hydrogen Sulphide (7783-06-4)	Reportable quantity: 100 lbs
Asphalt, fumes (8052-42-4)	Reportable quantity: 100 lbs

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.
The components with RQs are given for information.

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Clean Water Act (CWA) Section 311

Hydrogen Sulphide (7783-06-4) Reportable quantity: 100 lbs

SARA Hazard Categories (311/312)

Immediate (Acute) Health Hazard.

SARA Extremely Hazardous Substances (302/304)

Shell SC-70 Liquid Asphalt () Reportable quantity: 50000 lbs

Hydrogen Sulphide (7783-06-4) Reportable quantity: 100 lbs

Hydrogen Sulphide (7783-06-4) Threshold Planning Quantity: 500 lbs

State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This product contains a chemical known to the State of California to cause cancer.

New Jersey Right-To-Know Chemical List

Distillates (petroleum), heavy naphthenic (64741-53-3) 40.00% Listed.

Distillates (petroleum), straight-run, middle (64741-44-2) 35.00% Listed.

Kerosine (8008-20-6) 35.00% Listed.

Hydrogen Sulphide (7783-06-4) 0.20% Listed.

Asphalt, fumes (8052-42-4) 0.00% Listed.

Pennsylvania Right-To-Know Chemical List

Distillates (petroleum), heavy naphthenic (64741-53-3) 40.00% Listed.

Kerosine (8008-20-6) 35.00% Listed.

Hydrogen Sulphide (7783-06-4) 0.20% Environmental hazard.

Listed.

Asphalt, fumes (8052-42-4) 0.00% Listed.

Special hazard.

16. OTHER INFORMATION

MSDS Version Number : 7.1

MSDS Effective Date : 06/28/2007

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- MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.
- MSDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- Uses and Restrictions** : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.
- MSDS Distribution** : The information in this document should be made available to all who may handle the product.
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.