

MATERIAL SAFETY DATA SHEET

Review Date: 06/23/2006

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Shell SuperPave PG 64-10

MSDS NUMBER: 52610E - 3

PRODUCT CODE(S): 50266

MANUFACTURER

Shell Oil Products US
P.O. Box 4453
Houston, TX. 77210-4453

TELEPHONE NUMBERS

Spill Information: (877) 242-7400
Health Information: (877) 504-9351
MSDS Assistance Number: (877) 276-7285

SECTION 2 PRODUCT/INGREDIENTS

INGREDIENTS

	CAS#	CONCENTRATION
Asphalt	Mixture	100 %weight
Vacuum Tower Bottoms	64741-56-6	42 - 90 %weight
Vacuum Distillates	70592-78-8	10 - 58 %weight
Heavy Naphthenic Petroleum Distillate	64741-53-3	0 - 5 %weight
Hydrogen Sulfide	7783-06-4	0 - 0.2 %weight

NOTE: H2S is a naturally occurring constituent in the petroleum stream and is not added separately to the product.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Black viscous semi-solid. Asphalt or rotten egg odor.

Health Hazards: Hydrogen sulfide (H2S), an extremely flammable and toxic gas, may be present. Contact with hot material will cause thermal burns. May cause skin irritation. May cause cancer.

NFPA Rating (Health, Fire, Reactivity): 1, 1, 0

Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

Inhalation:

In applications where vapors (caused by high temperature) or mists (caused by mixing or spraying) are created, breathing may cause a mild burning sensation in the nose, throat and lungs. Hydrogen Sulfide (H2S) and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. Hydrogen Sulfide is an extremely flammable, toxic gas. Inhalation of vapors, mist or fumes (generated at high temperatures) may cause irritation to the nose, throat and respiratory tract.

Eye Irritation:

Contact with hot material can cause thermal burns which may result in permanent damage or blindness. Based on

essentially similar product testing, cool product is presumed to be minimally irritating to the eyes.

Skin Contact:

Contact with hot material can cause thermal burns which may result in permanent damage. May be irritating to the skin causing a burning sensation, redness and/or swelling. Other adverse effects not expected from brief skin contact. Based on essentially similar product testing, cool product is presumed to be minimally irritating to the skin.

Ingestion:

May be harmful or fatal if swallowed. Based on essentially similar product testing, cool product is presumed to be no more than slightly toxic if ingested. Generally considered to have a low order of acute oral toxicity.

Other Health Effects:

Carcinogenic in animal tests. Known human carcinogen. See Section 11.

Material may release hydrogen sulfide (H₂S), a highly toxic and extremely flammable gas, when heated to 180 Degrees F or higher. H₂S can cause irritation of the eyes and respiratory tract, headache, dizziness, nausea, vomiting, diarrhea, and pulmonary edema. The odor ("rotten egg") threshold is 0.02 ppm. Do not depend on sense of smell for warning; H₂S rapidly deadens the sense of smell.

Refer to Section 11, Toxicological Information, for specific information on the following effects:

Genotoxicity

Primary Target Organs:

The following organs and/or organ systems may be damaged by overexposure to this material and/or its components:

Lungs

Signs and Symptoms:

Lung damage (scarring, bronchitis, emphysema) may be indicated by shortness of breath, especially on exertion and may be accompanied by chronic cough.

For additional health information, refer to section 11.

SECTION 4	FIRST AID MEASURES
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Inhalation:

Vaporization of H₂S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from victim to rescuer. Mechanical ventilation should be used to resuscitate the victim. DO NOT attempt to rescue 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 CPR as required and transport to the nearest medical facility.

Skin:

If contact with hot material, cool the burn area by flushing with large amounts of water. Remove contaminated clothing. DO NOT attempt to remove anything from the burn area or apply burn creams or ointments. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. Cover the burn area loosely with a sterile dressing, if available. Skin contact with hot product can produce thermal burns. If the product has cooled and adhered to the skin, removal of the product may be difficult without causing injury to burn area. Immediately contact your physician for removal of product. Removal of the material should be attempted only under the direction of a physician in order to prevent or minimize potential injury to the affected area.

NOTE TO PHYSICIAN: If removal is attempted, mineral oil (not mineral spirits) or a mineral oil based ointment may be applied to help soften the product to facilitate removal.

Eye:
Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment.

Ingestion:
DO NOT induce vomiting. In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

SECTION 5	FIRE FIGHTING MEASURES
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Flash Point [Method]: 560 °F/293.33 °C [Approximate Closed Cup]

Extinguishing Media:
Material will float and can be re-ignited on surface of water.

SECTION 6	ACCIDENTAL RELEASE MEASURES
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Protective Measures:
May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management:
May burn although not readily ignitable. Use cautious judgement when cleaning up large molten spills.
LARGE MOLTEN SPILL: Wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain. Allow product to cool and remove as a solid.
SMALL MOLTEN SPILL: Allow product to cool and remove as a solid. Shut off source of leak if safe to do so.

Reporting:
U.S. regulations require reporting releases of this material to the environment which exceed the reportable quantity to the National Response Center at (800)424-8802.
CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

SECTION 7	HANDLING AND STORAGE
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Precautionary Measures:
Do not breathe material. Keep container closed. Use only with adequate ventilation. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Material may release hydrogen sulfide (H₂S), a highly toxic and extremely flammable gas, when heated to 180 Degrees F or higher. H₂S may collect in the headspace of the container.

Handling:
Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles such as shoes or belts that cannot be decontaminated. When asphaltic products are heated, they may give off small amounts of hydrogen sulfide, an extremely

flammable, highly toxic gas. Breathing hydrogen sulfide must be avoided. Use ventilation, when possible, or work upwind of source of vapors, fumes and mists. Do not allow molten products to contact water or liquids as this can cause violent eruptions, splatter hot material or ignite flammable materials.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical	Limit	TWA	STEL	Ceiling	Notation
Asphalt fumes	ACGIH TLV	0.5 mg/m3			A4 *,**

NOTE: * Asphalt (Petroleum; Bitumen) Fumes. As benzene-extractable inhalable particulate (or equivalent Method).

** Not Classifiable as a Human Carcinogen-Asphalt Fume (coal tar-free).

Decomposition Product	Limit	TWA	STEL	Ceiling	Notation
Carbon dioxide	ACGIH - TLV	5000 ppm	30000 ppm		
Carbon dioxide	OSHA - PEL		30000 ppm		
Carbon dioxide	OSHA - PEL_IS	10000 ppm			
Carbon monoxide	OSHA - PEL	35 ppmv		200 ppmv	
Hydrogen sulfide	ACGIH - TLV	10 ppm	15 ppm		
Hydrogen sulfide	OSHA - PEL_IS	10 ppm	15 ppm		

Decomposition Product	Method	Condition
Carbon dioxide	Combustion	Combustion
Carbon monoxide	Combustion	Combustion
Hydrogen sulfide	Combustion	Closed container/ Overheating

Exposure Controls

Adequate ventilation to control airborne concentrations.

Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles and Face Shield, or Safety Glasses

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by:
Clothing and gloves to protect against hot material.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

Full-Face Air-Purifying Respirator for Acid Gases. Air-Purifying Respirator for Organic Vapors. Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES
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Appearance & Odor: Black viscous semi-solid. Asphalt or rotten egg odor.

Substance Chemical Family: Petroleum Hydrocarbon

Flash Point	560 °F Approximate [Closed Cup]	Specific Gravity	1.018 @ 77 °F
Stability	Stable	Viscosity	4000 poise @ 140 °F

SECTION 10	REACTIVITY AND STABILITY
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Stability:

Material is stable under normal conditions.

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. Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products:

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Carbon Monoxide, Carbon Dioxide, Hydrogen Sulfide, Miscellaneous Organic Material, Simple Hydrocarbons and other unidentified organic compounds may be formed upon combustion.

SECTION 11	TOXICOLOGICAL INFORMATION
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Carcinogenicity:

Known human carcinogen. See Section 11.

Carcinogenicity Classification

Chemical Name	NTP	IARC	ACGIH	OSHA
Asphalt	No	Not Classifiable (3)	No	No
Heavy Naphthenic Petroleum Distillate	No	Carcinogen (1)	No	Yes

Vacuum Distillates	No	Carcinogen (1)	No	Yes
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Carcinogenicity	Certain asphalt fume condensates have been shown to cause tumors when repeatedly painted on the skin of laboratory mice. The relevance of these data to humans exposed to the fume itself is unknown. The International Agency for Research on Cancer has classified untreated mineral oils as Carcinogenic to Humans (Group 1). Components used in this product (Vacuum Distillate, Heavy Naphthenic Petroleum Distillate) meet the criteria for such oils. A similar petroleum fraction also induced skin tumors in male mice in a long-term skin painting study.
Epidemiology	There is no evidence that human exposure to bitumen or its fumes in manufacturing processes or in road use results in any cancer risk. While there is some evidence of an increased risk of lung cancer among roofers, building insulators and mastic asphalt workers, concurrent or previous exposure to coal tar products has also taken place and may therefore have been responsible.
Genotoxicity	Two samples of vacuum residuum were found to be non-genotoxic (no genetic damage) in a live rat study and weakly genotoxic when metabolically activated in an in vitro (test tube) assay.
Lungs	Mice exposed to laboratory-generated asphalt fume for up to 21 months developed bronchitis along with inflammation and other signs of lung injury.

SECTION 12	ECOLOGICAL INFORMATION
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Environmental Impact Summary:

There is no ecological data available for this product.

SECTION 13	DISPOSAL CONSIDERATIONS
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RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.

SECTION 14	TRANSPORT INFORMATION
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US Department of Transportation Classification

Proper Shipping Name: Elevated temperature liquid, N.O.S. (Petroleum Asphalt)
Identification Number: UN3257
Hazard Class/Division: 9 (Miscellaneous)
Packing Group: III

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

Emergency Response Guide # 128

International Air Transport Association

International Maritime Organization Classification

SECTION 15 REGULATORY INFORMATION

Federal Regulatory Status

OSHA Classification:

Product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Ozone Depleting Substances (40 CFR 82 Clean Air Act):

This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

Superfund Amendment & Reauthorization Act (SARA) Title III:

SARA Extremely Hazardous Substances (302/304):

Residues, Petroleum, Vacuum RQ 100 lbs Reportable Spill => 111.111111 lbs or 13.46 gal

SARA Hazard Categories (311/312):

Immediate Health	Delayed Health	Fire	Pressure	Reactivity
YES	YES	NO	NO	NO

SARA Toxic Release Inventory (TRI) (313):

There are no components in this product on the SARA 313 list.

Toxic Substances Control Act (TSCA) Status:

This material is listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories:

Australian AICS, Canadian DSL, European EINECS, Korean Inventory,

State Regulation

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

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

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

SECTION 16 OTHER INFORMATION

Revision#: 3

Review Date: 06/23/2006

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Revisions since last change (discussion): This Material Safety Data Sheet (MSDS) has been revised to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-2003). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

SECTION 17

LABEL INFORMATION

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 50266

Shell SuperPave PG 64-10

CAUTION!

The following organs and/or organ systems may be damaged by overexposure to this material and/or its components. **CONTACT WITH HOT PRODUCT CAN CAUSE THERMAL BURNS. MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE OIL ACNE OR DERMATITIS.**

MATERIAL AND/OR COMPONENTS THAT HAVE BEEN SHOWN TO CAUSE CANCER INCLUDE: Heavy Naphthenic Petroleum Distillate, Heavy Naphthenic Petroleum Distillate, Vacuum Distillates, Vacuum Distillates

MAY CAUSE DAMAGE TO: Lungs

Refer to Section 11, Toxicological Information, for specific information on the following effects:

Genotoxicity

Precautionary Measures:

Hydrogen Sulfide and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. Hydrogen Sulfide is an extremely flammable, toxic gas. Respiratory protection should be worn when venting tanks. Avoid contact with hot material. Avoid contact with water or liquids. Avoid breathing of vapors, fumes, or mist. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Keep container closed when not in use. Wash thoroughly after handling.

FIRST AID

Inhalation: Move victim to fresh air and provide oxygen if breathing is difficult. Get medical attention. Vaporization of H₂S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from victim to rescuer. Mechanical ventilation should be used to resuscitate the victim. DO NOT attempt to rescue 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 CPR as required and transport to the nearest medical facility.

Skin Contact: If contact with hot material, cool the burn area by flushing with large amounts of water. Remove

contaminated clothing. DO NOT attempt to remove anything from the burn area or apply burn creams or ointments. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. Cover the burn area loosely with a sterile dressing, if available.

Eye Contact: Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment.

Ingestion: DO NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

FIRE

In case of fire, Material will float and can be re-ignited on surface of water.

SPILL OR LEAK

May burn although not readily ignitable. Use cautious judgement when cleaning up large molten spills.

LARGE MOLTEN SPILL: Wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain. Allow product to cool and remove as a solid.

SMALL MOLTEN SPILL: Allow product to cool and remove as a solid.

CONTAINS: Vacuum Tower Bottoms, 64741-56-6; Vacuum Distillates, 70592-78-8; Heavy Naphthenic Petroleum Distillate, 64741-53-3; Hydrogen Sulfide, 7783-06-4

NFPA Rating (Health, Fire, Reactivity): 1, 1, 0

TRANSPORTATION

US Department of Transportation Classification

Proper Shipping Name:	Elevated temperature liquid, N.O.S. (Petroleum Asphalt)
Identification Number:	UN3257
Hazard Class/Division:	9 (Miscellaneous)
Packing Group:	III

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

Emergency Response Guide # 128

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

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

Name and Address

Shell Oil Products US
P.O. Box 4453
Houston, TX 77210-4453

ADMINISTRATIVE INFORMATION

MANUFACTURER ADDRESS: Shell Oil Products US, P.O. Box 4453, Houston, TX. 77210-4453
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