ConocoPhillips Superpave PG-M

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ConocoPhillips Superpave PG-M

MSDS Code: 724410

Synonyms: ConocoPhillips Superpave 70-22M
ConocoPhillips Superpave 70-28M
ConocoPhillips Superpave 76-22M
ConocoPhillips Superpave 76-28M
ConocoPhillips Superpave 82-22M

Intended Use: Asphalt

Responsible Party: ConocoPhillips
600 N. Dairy Ashford
Houston, Texas 77079-1175

MSDS Information: Phone: 800-762-0942
Email: MSDS@conocophillips.com
Internet: http://w3.conocophillips.com/NetMSDS/

Emergency Telephone Numbers: Chemtrec: 800-424-9300 (24 Hours)
California Poison Control System: 800-356-3219

2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING!

May Contain or Release Poisonous Hydrogen Sulfide Gas

NFPA

Appearance: Black, viscous
Physical Form: Semi-Solid
Odor: Asphalt

Potential Health Effects

Eye: Contact may cause mild eye irritation including stinging, watering, and redness. Contact with the heated material may cause thermal burns. Vapors or fumes may cause watering of the eyes.

Skin: Contact may cause mild skin irritation. Contact with the heated material may cause thermal burns. Fumes from the heated material can cause irritation and dermatitis after prolonged or repeated exposure. Long term skin exposure can increase sensitivity to the sun and cause discoloration of the skin. No harmful effects from skin absorption are expected.

Inhalation (Breathing): No information available on acute toxicity.May contain or release poisonous hydrogen sulfide gas - see Other Comments.

Ingestion (Swallowing): No harmful effects expected from ingestion.

Signs and Symptoms: Ingestion may cause irritation of the digestive tract, nausea, vomiting, and diarrhea. Breathing vapors or fumes from the hot material may cause headaches, dizziness, and lung irritation. Long term exposure to high concentrations of asphalt fumes may cause chronic bronchitis and pneumonitis (inflammation of the lungs).

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

See Section 11 for additional Toxicity Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS	Concentration (wt %)
Bitumen	8052-42-4	96-99
Styrene-Butadiene Copolymer	9003-55-8	1-4
Hydrogen Sulfide	7783-06-4	Variable (<1)

4. FIRST AID MEASURES

Eye: If irritation or redness develops from exposure to fumes generated from molten material, move victim away from exposure and into fresh air. Flush eyes with clean water. If irritation or redness persists, seek medical attention. For contact with the molten material, gently open eyelids and flush affected eye(s) with cold, not icy, water. Seek immediate medical attention.

Skin: For contact with hot asphalt, leave material on skin and immediately flush or immerse affected area(s) using cold, not icy, water for up to 10 minutes. No attempt should be made to remove the asphalt from the skin. Contaminated clothing may be removed provided it is not adhering to the skin. Seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention. If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

Ingestion (Swallowing): First aid is not normally required for the solid material; however, if molten material is swallowed, seek immediate medical attention.

Notes to Physician: Once cooled, adhered asphalt is not harmful to the skin, and in fact, provides a sterile cover over the affected area. The asphalt will detach itself within a few days as healing occurs. If it is necessary to remove the asphalt, only medically approved solvents or warm paraffin should be used to prevent further skin damage. If hot material has caused burns to the eye, early ophthalmologic evaluation is recommended. Small amounts of ingested asphalt usually require no treatment.

At high concentrations hydrogen sulfide may produce pulmonary edema, respiratory depression, and/or respiratory paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. Animal studies suggest that nitrites are a useful antidote, however, documentation of the efficacy of nitrites in humans is lacking. If the diagnosis of hydrogen sulfide poisoning is confirmed and if the patient does not respond rapidly to supportive care, the use of nitrites may be an effective antidote if delivered within the first few minutes of exposure. For adults the dose is 10 mL of a 3% $NaNO_2$ solution (0.5 gm $NaNO_2$ in 15 mL water) I.V. over 2-4 minutes. The dosage should be adjusted in children or in the presence of anemia, and methemoglobin levels, arterial blood gases, and electrolytes should be monitored closely.

5. FIRE-FIGHTING MEASURES

NFPA 704 Hazard Class

Health: 0 **Flammability:** 1 **Instability:** 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire. Hot asphalt may ignite flammable mixtures on contact. If water is applied to heated material, it can cause violent foaming and boil over. Hazardous combustion/decomposition products may be released by this material when exposed to heat or fire. Use caution and wear protective clothing, including respiratory protection. When heated above its flash point, this material may release flammable vapors, which, if exposed to a source of ignition, can burn in the open or be explosive in confined spaces. Vapors released to atmosphere at these temperatures can cause flash fire.

Extinguishing Media: Dry chemical, carbon dioxide, or alcohol-resistant foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Water fog may be used on flat surfaces such as roads. Do not use water on asphalt fire in tank or other containers since it may cause violent eruption and spreading of burning asphalt.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water or foam can cause frothing. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). May contain or release poisonous hydrogen sulfide gas.

Environmental Precautions: Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802). Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. If spill/release in excess of EPA reportable quantity (see Section 15) is made into the environment, immediately notify the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with the heated material. Avoid breathing vapors or mists. Use only outdoors or in well-ventilated area. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment. Avoid breathing gas.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations. This material may be heated to high temperatures during use. Use caution when handling heated material, to avoid causing thermal burns. Vapors or fumes may cause watering or irritation of the eyes.

Conditions for safe storage: This material may contain or release poisonous hydrogen sulfide gas. In a tank, barge, or other closed container, the vapor space above this material may accumulate hazardous concentrations of hydrogen sulfide. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition.

Hot asphalt must never be added to a tank or other container that is not completely dry. Contact with water results in violent expansion as the water turns to steam. This can lead to dangerous boil over and may cause damage or rupture of the tank or container. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Keep container(s) tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH	OSHA	Other:
Bitumen	TWA: 0.5 mg/m^3	---	---
Hydrogen Sulfide	TWA: 10 ppm STEL: 15 ppm	Ceiling: 20 ppm	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Personal Protective Equipment (PPE):

Eye/Face: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the performance of their products. The use of thermally resistant gloves is recommended when working with materials that present thermal hazards (hot or cold).

Respiratory: Where there is potential for airborne exposure to hydrogen sulfide (H2S) above exposure limits, a NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used. Under conditions where hydrogen sulfide (H2S) is NOT detected, a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (MUC) as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5 percent oxygen) situations, or other conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Black, viscous
Physical Form:	Semi-Solid
Odor:	Asphalt
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	<1
Vapor Density (air=1):	>1
Boiling Point/Range:	>900°F / °C
Melting/Freezing Point:	No data
Solubility in Water:	Negligible
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity:	1.04 @ 68ºF (20ºC)
Bulk Density:	8.67 lbs/gal

Evaporation Rate (nBuAc=1):	<1
Flash Point:	>446°F / >230°C
Test Method:	Cleveland Open Cup (COC), ASTM D92
LEL (vol % in air):	No data
UEL (vol % in air):	No data
Autoignition Temperature:	No data

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated conditions of storage and handling.

Conditions to Avoid: Avoid all possible sources of ignition. Flammable and poisonous hydrogen sulfide gas can be released upon heating. Do not allow contact of molten product with water or liquids as violent eruptions, splatter of hot material or ignition of flammable materials may result.

Materials to Avoid (Incompatible Materials): Avoid contact with halogens, strong acids, alkalies, and oxidizers.

Hazardous Decomposition Products: Thermal decomposition can produce carbon, nitrogen and sulfur oxides. May contain or liberate poisonous hydrogen sulfide gas.

Hazardous Polymerization: Not known to occur.

11. TOXICOLOGICAL INFORMATION

Chronic Data:

Bitumen

Carcinogenicity: The International Agency for Research on Cancer (IARC) concluded in its 1987 review that there was inadequate evidence that bitumens (asphalt) are carcinogenic in humans. A more recent epidemiology study reported an increased incidence of lung cancers in European asphalt workers, but did not conclude that exposure to asphalt caused these effects due to confounding exposures to other carcinogens. In mouse skin carcinogenicity studies, asphalt fume condensates applied repeatedly to the skin have produced both positive and negative results, believed to be related to the concentration of polynuclear aromatic hydrocarbons. A two year rat inhalation study of asphalt fume condensates, collected under controlled field conditions, did not produce adverse effects.

Acute Data:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Bitumen	>5 g/kg (rat)	>2 g/kg (rabbit)	No data
Styrene-Butadiene Copolymer	> 2000 mg/kg (receptor not specified)	> 2000 mg/kg (receptor not specified)	No data.
Hydrogen Sulfide	Not Applicable	Not Applicable	LC50 (rat) = 1500 mg/m^3/15 min

12. ECOLOGICAL INFORMATION

Asphalt (bitumen) is a dark brown to black solid or semi solid obtained from the high temperature distillation of crude oil. It is a complex combination of very high molecular weight hydrocarbons with carbon numbers predominantly greater than C25, and it can contain trace amounts of metals. It is essentially non-volatile at ambient temperatures. It is unlikely that significant migration of the material into water will occur due to its low water solubility. Asphalt is not likely to concentrate or accumulate in the food chain or cause environmental toxicity due to its high molecular weight and low water solubility. It is expected to persist in the environment and not undergo significant biodegradation. If spilled in the environment, molten asphalt could harm plant life due to the coating action of oil components.

13. DISPOSAL CONSIDERATIONS

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The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation (DOT)

Shipping Description:	***Shipping description is for bulk shipments that meet the Elevated temperature criteria, non-bulk is unregulated. (see Note below)*** Elevated temperature liquid, n.o.s., 9, UN3257, III
Non-Bulk Package Marking:	None
Non-Bulk Package Labeling:	None
Bulk Package/Placard Marking:	None / 3257 & HOT mark ***or*** Class 9 / 3257 & HOT mark
Packaging - References:	None; None; 49 CFR 173.247 ***(Exceptions; Non-bulk; Bulk)***
Hazardous Substance:	None
Emergency Response Guide:	128
Note:	This product is regulated by DOT when shipped in bulk packages at temperatures >212° F (100° C). The word HOT must be marked on the bulk package on two opposing sides. (49 CFR 172.325)

International Maritime Dangerous Goods (IMDG)

Shipping Description:	UN3257, Elevated temperature liquid, n.o.s., 9, III
Non-Bulk Package Marking:	Elevated temperature liquid, n.o.s., UN3257
Labels:	Class 9
Placards/Marking (Bulk):	Class 9/3257 and Elevated Temperature Mark (5.3.2.2)
Packaging - Non-Bulk:	P099
EMS:	F-A, S-P
Note:	Not regulated at temperatures below 100° C.

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

Note:	UN 3257, Elevated temperature liquid, n.o.s. - is a forbidden shipment. Not regulated at temperatures below 100° C.

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	---	---	---
Max. Net Qty. Per Package:	---	---	---

15. REGULATORY INFORMATION

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):
This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:

Component	TPQ	EPCRA RQ
Hydrogen Sulfide	500 lb	100 lb

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health:	No

Chronic Health:	Yes
Fire Hazard:	No
Pressure Hazard:	No
Reactive Hazard:	No

CERCLA/SARA - Section 313 and 40 CFR 372:
This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds):
EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65:
Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Type of Toxicity
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer

Canadian Regulations:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
None
NEEDS TO BE CLASSIFIED

National Chemical Inventories:
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are listed on the Canadian DSL.

U.S. Export Control Classification Number: EAR99

16. OTHER INFORMATION

Issue Date:	28-Aug-2007
Status:	Final
Previous Issue Date:	29-Dec-2005
Revised Sections or Basis for Revision:	Format change Product Name / Synonyms (Section 1)
MSDS Code:	724410

MSDS Legend:
ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

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