



APEX OIL COMPANY, INC.
CLARK OIL TRADING COMPANY
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24 Hour Emergency Phone Number:
Chemtrec: 1-800-424-9300

General Assistance 1-314-889-9600

MATERIAL SAFETY DATA SHEET

Modified Asphalt, All Paving Grades

This document is subject to review and revision as of June, 2004.


Section I. Product and Company Identification

Common Trade Name:	Asphalt
Synonyms:	PG58-22, PG64-22, PG67-22, PG70-22, PG76-22, PG76-28, all with additive.

Section II. Composition/Information on Ingredients

Chemical Family:	Petroleum Hydrocarbon, a complex combination of hydrocarbons having carbon numbers predominately higher than C25, and may contain hydrogen sulfide. Also contains polymers and a plasticizer.
Reportable Quantity:	None.
Marine Pollutant:	No.

Section III. Hazards Identification

NFPA:		Hazardous Ingredients		
Fire Hazard		Name	CAS No.	Concentration
Health  Specific Hazard	Reactivity 4 = Extreme 3 = High 2 = Slight 1 = Least	Asphalt	8052-42-4	55-99%
		Copolymer of Ethylene and Octane 3) Maleic Anhydride Modified Polypropylene Ground Tire Rubber Polymer Styrene-Butadiene block copolymer Sulfur Calcium Oxide Hydrogen Sulfide Di (2-ethylhexyl) phthalate (DEHP)	26221-73-8 NA NA 6868-29-4 9003-55-8 7704-34-9 1305-78-8 7783-06-4 117-81-7	0-10% 0-10% 0-10% 0-10% 0-10% 0-5% <0.1% <0.1%

Summary of Hazards

Danger! Product may contain or release hydrogen sulfide. H₂S is a highly toxic, highly flammable gas, which can be fatal if inhaled at certain concentrations. May cause irritation to eyes, skin and respiratory system. Avoid liquid, mist and vapor contact. Harmful or fatal if swallowed. Aspiration hazard -- can enter lungs and cause damage. May cause irritation or be harmful if inhaled or absorbed through the skin. Avoid prolonged or repeated skin contact. Contains polycyclic aromatic compounds which have been shown to cause anemia, disorders of the liver, bone marrow and lymphoid tissues in rats following dermal application. Product is stored and shipped hot so thermal burns are a risk.

Section IV. First Aid Measures

Eye Contact:	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if pain or redness continues.
Skin Contact:	Immediately contact physician for thermal burns. In case of skin contact with hot product, immediately immerse or drench the affected are in water to assist cooling. Get medical attention. Remove contaminated clothing promptly and launder before reuse. Contaminated leather goods should be discarded. If irritation persists or symptoms described in the MSDS develop, seek medical attention. High pressure skin injections are SERIOUS MEDICAL EMERGENCIES. Get immediate medical attention.
Slight Inhalation:	Remove to fresh air. If breathing is difficult, ensure clear airway and administer oxygen. If not breathing, apply artificial respiration or cardiopulmonary resuscitation. Keep person warm, quiet and get medical attention.
Slight Ingestion:	Never give anything by mouth to an unconscious person. DO NOT induce vomiting. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis, which can be fatal. Give vegetable oil or charcoal slurry to retard absorption. If spontaneous vomiting occurs, keep head below hips to prevent aspiration of liquid into lungs and monitor for breathing difficulty. SEEK IMMEDIATE MEDICAL ATTENTION. Keep person warm and quiet.
Notes to Physician:	In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption. Consideration should be given to the use of an intratracheal tube, to prevent aspiration. Irregular heartbeat may occur, use of adrenalin is not advisable. Individuals intoxicated by the product should be hospitalized immediately, with acute and continuing attention to neurological and cardiopulmonary function. Positive pressure ventilation may be necessary. After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary edema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated. In case of skin injection, prompt debridement of the wound is necessary to minimize necrosis and tissue loss.

Section V. Fire Fighting Measures

The Product Is:	A low fire hazard.	NFPA: 4 = Extreme 3 = High 2 = Slight 1 = Least	1	Flammability
Flash Points:	500°F + (PMCC)		1	Health
Flammable Limits:	LOWER: 0.9% -- UPPER: 7%		0	Reactivity
Auto-Ignition Temperature:	Not available.		H₂O	Specific Hazards
Flammability:	Conditions to Avoid: Prevent vapor accumulation.			
Basic Firefighting Procedures:	When heated above its flash point, this material will release flammable vapors, which, if exposed to a source of ignition, can burn in the open or be explosive in confined spaces. Mists or sprays may be flammable at temperatures below the normal flash point. Dry chemical, halon carbon dioxide are the preferred extinguishing media. Foam and water fog are effective but can cause frothing. Big fires, such as tank fires, should be fought with caution. If the burning liquid is 200F or hotter, the use of water, water spray, or foam can cause frothing and even sudden boilover of the tank, endangering the lives of personnel such as firefighters. If possible, pump the contents from the tank and keep adjoining structures cool with water. Water can be used to cool fire-exposed containers, structures and to protect personnel. If a leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak. Use water to flush spills away from sources of ignition. Do not flush down public sewers.			
Fire Degradation Products:	Combustion may produce carbon monoxide, carbon dioxide, sulfur oxides and reactive hydrocarbons (aldehydes, aromatics, etc.) compounds.			
Unusual Fire and Explosion Hazards:	Do not use water in-tank. May cause violent eruptions of burning asphalt. Dangerous when exposed to heat or flame. Vapors form flammable or explosive mixtures with air at room temperature. Vapor or gas may spread to distant ignition sources (pilot lights, welding equipment, electrical equipment, etc.) and flash back. Vapors may accumulate in low areas. Vapors may concentrate in confined areas. Flowing product can be ignited by self-generated static electricity. Use adequate bonding and grounding to prevent static buildup. Runoff to sewer may cause fire or explosion hazard. Containers may explode in heat of fire. Irritating or toxic substances may be emitted upon thermal decomposition. For fires involving this material, do not enter any enclosed or confined space without proper protective equipment, which may include NIOSH approved self-contained breathing apparatus with full facemask. Clothing, rags or similar organic material contaminated with this product and stored in a closed space may undergo spontaneous combustion. Transfer to and from commonly bonded and grounded containers.			

Section VI. Accidental Release Measures

Spill and Leak Procedures:	Store in tightly closed containers in dry, isolated and well-ventilated area away from sources of ignition and incompatible materials. Use non-sparking tools and explosion proof equipment. Ground lines, containers, and other equipment used during product transfer to reduce the possibility of a static induced spark. Do not "switch" load (load into containers which previously contained gasoline or other low flash material) because of possible accumulation of a static charge resulting in a source of ignition. Use good personal hygiene practices. After handling this product, wash hands before eating, drinking, smoking or using toilet facilities. Use electrical equipment rated for hazardous areas. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Combustible Liquid: Review Fire and Explosion Hazard Data before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g., by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment/drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 800-424-8802. For highway or railway spills, contact Chemtrec at 800-424-9300.
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Section VII. Handling and Storage

Storage:	Store in tightly closed containers in dry, isolated and well-ventilated area away from sources of ignition and incompatible materials. Use non-sparking tools and explosion proof equipment. Ground lines, containers, and other equipment used during product transfer to reduce the possibility of a static induced spark. Do not "switch" load (load into containers which previously contained gasoline or other low flash material) because of possible accumulation of a static charge resulting in a source of ignition. Use good personal hygiene practices. After handling this product, wash hands before eating, drinking, smoking or using toilet facilities. Use electrical equipment rated for hazardous areas.
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Section VIII. Exposure Controls/Personal Protection

Respiratory Protection:	If workplace exposure limits for product or components are exceeded, NIOSH equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.
Eye Protection:	Keep away from eyes. Eye contact can be avoided by wearing safety glasses or chemical splash goggles. A source of clean water should be available in the work area for flushing eyes.
Skin Protection:	Keep away from skin. Skin contact can be minimized by wearing protective gloves such as neoprene, nitrile-butadiene rubber, etc. and, where necessary, impervious clothing and boots. Where potential exists for exposure to a product and water mixture (e.g., hydroblasting exchanger tubes or vessel bottoms), a face shield as well as appropriate barrier creams should be used to prevent face and neck contact. Leather goods contaminated with this product should be discarded. A source of clean water should be available in the work area for flushing skin.
Ventilation:	Avoid breathing mists and vapor. Use in well ventilated area. In confined space, mechanical ventilation may be necessary to reduce vapor concentrations to levels below the allowable exposure limits.
Confined Space Precautions:	Tanks, vessels, or other confined spaces which contain product should be freed of vapors before entering. Because H ₂ S can accumulate in tanks, vessels, and bulk transport compartments, personnel should stand upwind, keep their faces at least two feet from compartment openings, and avoid breathing vapors when opening hatches and dome covers. The container should be checked meter to ensure a safe atmosphere before entry. Empty containers may contain toxic, flammable, combustible or explosive residues or vapors. Do not cut, grind, drill, weld, or reuse empty containers that contained this product. Do not transfer this product to another container unless the container receiving the product is labeled with proper DOT shipping name, hazard class and other information that describes the product and its hazards.

Section IX. Physical and Chemical Properties

Boiling point :	+800	Odor Threshold:	Asphaltic odor at use temperatures.
Melting or Solid Point:	110-120°F	Specific Gravity:	.99-1.04
Vapor density:	>1 (Air=1)	Vapor Pressure:	<0.1 psi (Reid)
Solubility:	Negligible	Volatility:	Negligible
Physical State and Appearance: Viscous semi-solid to solid at room temperature, liquid at temperatures > 300°F.			
Odor: Hydrocarbon-asphaltic.		Color: Black	
Evaporation rate:	Very low		

Section X. Stability and Reactivity

Stability:	The product is stable.
Incompatibility:	Avoid strong oxidizing agents (peroxide, dichromate, permanganate, chlorine, etc.), strong acids, caustics and halogens. Avoid water on hot asphalt.
Hazardous Polymerization:	No.

Section XI. Toxicological Information

Primary Routes of Entry:	Eye or skin contact, ingestion, inhalation.	
Target Organs:	Skin, respiratory system, heart, lungs, kidneys, liver.	
Carcinogenic Effects:	Product is not listed as a carcinogen or potential carcinogen by NTP, IARC, OSHA. IARC identified residual oils as a possible human skin cancer hazard based on tests with laboratory animals, but neither NTP nor OSHA has identified these oils as carcinogens. Polynuclear aromatic compounds present in the product are considered carcinogens by NTP and IARC.	
TLV:	Asphalt Fumes	TWA: 0.5 (mg/m ³) from ACGIH [1999] CEIL: 5 (mg/m ³) from NIOSH [1999]
	Hydrogen Sulfide	TWA: 10 (ppm) STEL: 15 (ppm) from ACGIH [1999] TWA: 50 (ppm) CEIL: 20 (ppm) from OSHA-PEL [1999] CEIL: 10 (ppm) from NIOSH-REL [1999] IDLH: 100 (ppm) from NIOSH [1999]
	Maleic Anhydride	TWA: 0.1 (ppm) from ACGIH [2001] TWA: 0.25 (ppm) from NIOSH/OSHA [1997] IDLH: 10 (mg/m ³) from NIOSH [1997]
	Calcium Oxide	TWA: 2 (mg/m ³) from ACGIH [2001] TWA: 2 (mg/m ³) from NIOSH [1997] IDLH: 25 (mg/m ³) from NIOSH [1997]
	Di (2-ethylhexyl)phthalate (DEHP)	TWA: 5 (mg/m ³) from ACGIH [2001] REL: 5 (mg/m ³) from NIOSH [1999]
Effects and Hazards of Eye Contact:	This product is normally stored and shipped hot (300 F to 375 F) and thermal burns are a risk. At ambient temperature, may cause severe irritation, redness, tearing, blurred vision and conjunctivitis.	
Effects and Hazards of Skin Contact:	This product is normally stored and shipped hot (300° F to 375° F) and thermal burns are a risk. Prolonged or repeated contact may cause moderate irritation, defatting (cracking), redness, itching, inflammation, dermatitis and possible secondary infection. Possible cancer hazard based on skin painting studies in laboratory animals. High pressure skin injections are SERIOUS MEDICAL EMERGENCIES. Injury may not appear serious at first. Within a few hours, tissues will become swollen, discolored and extremely painful. See Notes to Physician in First Aid Measures section.	
Effects and Hazards of Inhalation:	Nasal and respiratory tract irritation, central nervous system effects including excitation, euphoria, contracted eye pupils, dizziness, drowsiness, blurred vision, fatigue, nausea, headache, loss of reflexes, tremors, convulsions, seizures, loss of consciousness, coma, respiratory arrest and sudden death could occur as a result of long term and/or high concentration exposure to vapors. May also cause anemia and irregular heart rhythm.	
Effects and Hazards of Ingestion:	This product may be harmful or fatal if swallowed. This product may cause nausea, vomiting, diarrhea and restlessness. DO NOT INDUCE VOMITING. Aspiration into the lungs can cause severe chemical pneumonitis or pulmonary edema/hemorrhage, which can be fatal. May cause gastrointestinal disturbances. Symptoms may include irritation, depression, vomiting and diarrhea. May cause harmful central nervous system effects, similar to those listed under "inhalation".	
Medical Conditions Aggravated by Exposure:	Preexisting eye, skin, heart and respiratory disorders may be aggravated by exposure to this product. Skin contact may aggravate existing dermatitis.	

Toxicological Information Continued on Next Page.

Toxicological Information, Continued.

ASPHALT contains polycyclic aromatic hydrocarbons, which are potentially carcinogenic. Skin painting studies in laboratory animals with petroleum residues have produced severe irritation and systemic toxicity, including cancers. The residue contains polycyclic aromatic compounds which have been shown to cause anemia, disorders of the liver, bone marrow and lymphoid tissues in rats following dermal application. Animal inhalation studies have not yielded sufficient evidence of asphalt-induced lung cancer, and only limited investigations of the metabolic changes caused by petroleum asphalt fumes have been done. Fumes from heated petroleum roofing asphalt did not produce cancers in the lungs of rats and guinea pigs inhaling such fumes for two years. Similarly, a roofing petroleum asphalt proved noncarcinogenic to the skin of mice and rabbits.

HYDROGEN SULFIDE can affect the body if it is inhaled or if it comes into contact with the eyes, skin, nose or throat. It can also affect the body if it is swallowed. It is colorless and has the odor of rotten eggs. However, its odor cannot be used as an indication of its presence since one of the first effects of H₂S exposure is the loss of the sense of smell. Inhalation of high concentrations of hydrogen sulfide, 1000 to 2000 ppm, may cause coma after a single breath and may be rapidly fatal, convulsions can also occur. Hydrogen sulfide gas is a rapidly acting systemic poison which causes respiratory paralysis with consequent asphyxia at high concentrations (500 to 1000 ppm). A case of polyneuritis and encephalopathy from one day's exposure to a concentration insufficient to cause loss of consciousness has been reported. It irritates the eyes and respiratory tract at lower concentrations (50 to 500 ppm). Pulmonary edema and bronchial pneumonia may follow prolonged exposure at concentrations exceeding 250 ppm. Exposure to concentrations of hydrogen sulfide around 50 ppm for one hour may produce rhinitis, pharyngitis, bronchitis, pneumonitis, acute conjunctivitis with pain, lacrimation and photophobia, in severe form this may progress to keratoconjunctivitis and vesiculation of the corneal epithelium. In lower concentrations, hydrogen sulfide may cause headache, fatigue, irritability, insomnia, and gastrointestinal disturbances, as well as central nervous system disturbances, causing excitation and dizziness. Repeated exposure to hydrogen sulfide results in increased susceptibility, so that eye irritation, cough and systemic effects may result from concentrations previously tolerated without any effect.

DI(2-ETHYLHEXYL)PHTHALATE (DEHP) very low levels of DEHP to which humans are normally exposed have not been shown to cause adverse health effects. But DEHP causes cancer in rats and mice. It is also shown to cause liver damage and male reproductive system damage, affect reproduction, and produce birth defects in laboratory animals. However, none of these effects have been documented in humans.

Toxicity to Animals:	LD50: Not available. LC50: Not available. Remark: No additional remark.
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Section XII. Ecological Information


Protection of Stratospheric Ozone:	Pursuant to section 611 of the Clean Air Act Amendments of 1990 and per 40 CFR Part 82, this product does not contain nor was it directly manufactured with any class I or II ozone depleting substances.
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Section XIII. Disposal Considerations

Waste Disposal:	Dispose of material in accordance with local, county, state and federal regulations. Contact state and federal regulators to determine whether the material should be classified as a hazardous waste or industrial waste and handled accordingly. Use licensed transporter and disposal facility.
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Section XIV. Transport Information

Danger! Product May Contain or Release Hydrogen Sulfide. H₂S is a highly toxic, highly flammable gas which can be fatal if inhaled at certain concentrations. May cause irritation to eyes, skin and respiratory system. Avoid liquid, mist and vapor contact. Harmful or fatal if swallowed. Aspiration hazard, can enter lungs and cause damage. May cause irritation or be harmful if inhaled or absorbed through the skin. Avoid prolonged or repeated skin contact. Contains polycyclic aromatic compounds which have been shown to cause anemia, disorders of the liver, bone marrow and lymphoid tissues in rats following dermal application. Product is stored and shipped hot so thermal burns are a risk. Do not mix hot asphalt with water.

DOT:		DOT CLASS 9: Miscellaneous hazardous material.
DOT Shipping Name:	Elevated temperature liquid.	
DOT Hazard Class:	DOT CLASS 9: Miscellaneous hazardous material.	
DOT ID Number/Packaging Group:	UN 3257	PG:III (Not regulated by DOT if in a container of 119 gallons or less at ambient room temperature.)

Section XV. Regulatory Information

SARA Title III (302, 304, 311, 312):	Section 302/304	Extremely Hazardous Substances					
		Hydrogen Sulfide					
	Section 311 Hazard Category	Acute	Chronic	Fire	Pressure	Reactive	N/A
		X	X	X			
SARA Title III (313):	Hydrogen Sulfide <.1%, Calcium Oxide 0-5						
TSCA:	On the TSCA inventory list.						
Canada DSL:	On the DSL list.						
California Prop. 65:	This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: DEHP, Benzene, Toluene, Petroleum Residues Vacuum Distillates.						
State Right-to-Know Regulations:	Chemical Name: Sulfur Calcium Oxide Hydrogen Sulfide Di (2-ethylhexyl) phthalate (DEHP)			State Right-to-Know: MA NJ PA MA NJ PA TN MA NJ PA TN MA NJ PA			
CERCLA/SUPERFUND:	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4.						
OSHA Hazard Determination:	This material is hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200.						

Section XVI. Other Information

Information contained herein was based on data and compiled from reference materials and other sources believed to be reliable and is offered in good faith. However, the MSDS's accuracy or completeness is not guaranteed by Apex, nor is any responsibility assumed or implied for any loss or damage resulting from inaccuracies or omissions. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.