

U. S. OIL & REFINING CO.

M A T E R I A L S A F E T Y D A T A S H E E T

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AR-4000W

MSDS No. 511410

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U. S. OIL & REFINING CO.
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Tacoma, WA 98421

EMERGENCY ASSISTANCE:
COMPANY: (253) 383-1651
CHEMTREC: (800) 424-9300

IMPORTANT: Read this MSDS before handling or disposing of this product.
Pass this information on to employees, customers and product users.

1. MATERIAL IDENTIFICATION

Trade Name: ASPHALT CEMENT, AR-4000W

Chemical Family: HYDROCARBON

Generic Name: ASPHALT

DOT Shipping Name: ELEVATED TEMPERATURE MATERIAL, LIQUID, N.O.S., 9,
NA/UN3257, III (ASPHALT AR 4000W)

NFPA Hazard Rating: HEALTH: 1
FIRE: 1
REACTIVITY: 0
SPECIAL:

2. PRODUCT COMPONENTS

Component	CAS Number	Percent
PETROLEUM ASPHALT	8052-42-4	90-100 (AP)
ANTI-STRIPPING ADDITIVE		0-1 (AP)
POLYMER ADDITIVE		0-10 (AP)
HYDROGEN SULFIDE	7783-06-04	TR

3. OCCUPATIONAL EXPOSURE LIMITS

Substance	Value	Time/Type	Date	Source
ASPHALT FUMES	5 MG/M ³	8 Hr PEL	1980	OSHA
	10 MG/M ³	15 Min STEL	1980	OSHA
HYDROGEN SULFIDE	10 PPM	8 Hr PEL	1989	OSHA
	15 PPM	15 Min STEL	1989	OSHA

4. HEALTH INFORMATION

Effects of Overexposure:

INHALATION OF HIGH CONCENTRATIONS MAY CAUSE EYE AND RESPIRATORY IRRITATION, HEADACHES, DIZZINESS OR NAUSEA, UNCONSCIOUSNESS AND POSSIBLY DEATH. PROLONGED OR REPEATED CONTACT WITH PRODUCT AT WARM OR NEAR AMBIENT TEMPERATURE MAY CAUSE SKIN IRRITATION. CAUTION: PRODUCT NORMALLY SHIPPED HOT (APPROXIMATELY 310-360°F)

SKIN CONTACT WITH HOT PRODUCT MAY CAUSE THERMAL BURNS. PROLONGED OR REPEATED CONTACT WITH THIS PRODUCT AT WARM OR AMBIENT TEMPERATURES MAY CAUSE SKIN IRRITATION AND DERMATITIS; HOWEVER, BASED ON HUMAN EXPERIENCE THIS PRODUCT IS JUDGED TO BE NEITHER CORROSIVE NOR AN IRRITANT BY OSHA CRITERIA.

EYE CONTACT WITH HOT PRODUCT MAY CAUSE THERMAL BURNS. CONTACT WITH THIS PRODUCT AT WARM OR AMBIENT TEMPERATURES MAY CAUSE EYE IRRITATION BUT WILL NOT DAMAGE EYE TISSUE.

CAUTION: UNDER CERTAIN CIRCUMSTANCES SULFUR COMPOUNDS IN HOT PRODUCT MAY FORM HYDROGEN SULFIDE (H₂S) GAS. COOLING PRODUCT MAY CONTINUE TO EMIT TRACES OF H₂S TEMPORALLY FROM ENTRAPPED OR DISSOLVED GASSES. H₂S IS A COLORLESS, TOXIC AND EXTREMELY FLAMMABLE GAS WITH AN ODOR AT LOW CONCENTRATIONS CHARACTERISTIC OF ROTTEN EGGS AND SWEETISH AT HIGH CONCENTRATIONS. ODOR CANNOT BE RELIED UPON AS A MEANS OF DETECTION BECAUSE THE SENSE OF SMELL RAPIDLY BECOMES INEFFECTIVE TO H₂S, AND THE H₂S ODOR MAY BE MASKED BY THE GENERAL ODOR OF HOT PRODUCT. BECAUSE THE H₂S MAY ACCUMULATE IN TANKS 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. PROLONGED BREATHING OF 50 TO 100 PPM OF H₂S MAY PRODUCE EYE AND RESPIRATORY TRACT IRRITATION, HEADACHE NERVOUSNESS AND NAUSEA, AND ONLY A FEW BREATHS OF HIGH CONCENTRATIONS (700 - 1000 PPM) MAY LEAD TO UNCONSCIOUSNESS AND COULD BE FATAL. NIOSH-APPROVED RESPIRATORY EQUIPMENT SHOULD BE USED WHEN PERMISSIBLE CONCENTRATIONS ARE EXCEEDED.

PRODUCT HAS A LOW ORDER OF ACUTE ORAL AND DERMAL TOXICITY, BUT MINUTE AMOUNTS ASPIRATED INTO THE LUNGS DURING INGESTION OR VOMITING MAY CAUSE MILD TO SEVERE PULMONARY INJURY AND POSSIBLY DEATH.

5. FIRE AND EXPLOSION

Flash Point (Method): GT 316°C (COC)

Autoignition Temperature (Method): AP 485°C (EST.)

Flammable Limits (% Vol. in air) LOWER: ND/A
at Normal Atmospheric Temperature UPPER: ND/A
and Pressure

Unusual Fire and Explosion Hazards:

AT ELEVATED TEMPERATURES, VOLATILE HYDROCARBONS MAY FORM IN THE VAPOR SPACE OF CONTAINERS AND MAY EXPLODE OR IGNITE UPON EXPOSURE TO A SOURCE OF IGNITION. STUDIES HAVE SHOWN THAT RELATIVELY LOW FLASH POINT SUBSTANCES SUCH AS H₂S AND LOW-BOILING HYDROCARBONS, MAY ACCUMULATE IN THE VAPOR SPACE OF HOT ASPHALT TANKS AND BULK TRANSPORT COMPARTMENTS. SUCH VAPORS MAY EXHIBIT FLAMMABILITY CHARACTERISTICS OF A SIGNIFICANTLY LOWER FLASH PRODUCT. AS A PRECAUTION KEEP IGNITION SOURCES AWAY FROM VENTS AND OPENINGS.

Extinguishing Media:

USE WATER SPRAY, DRY CHEMICAL, FOAM OR CARBON DIOXIDE TO EXTINGUISH THE FIRE. WATER OR FOAM MAY CAUSE FROTHING. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL. WATER SPRAY MAY BE USED TO FLUSH SPILLS AWAY FROM EXPOSURES. MINIMIZE BREATHING OF GASSES, VAPOR, FUME OR DECOMPOSITION PRODUCTS. FOR FIRES INVOLVING THIS MATERIAL, DO NOT ENTER ANY ENCLOSED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT, INCLUDING SELF-CONTAINED BREATHING APPARATUS. COOL TANKS AND CONTAINERS EXPOSED TO FIRE WITH WATER. IMPROPER USE OF WATER AND EXTINGUISHING MEDIA CONTAINING WATER MAY CAUSE FROTHING WHICH CAN SPREAD THE FIRE OVER A LARGER AREA.

6. EMPLOYEE PROTECTION

- Respiratory:** NONE IS NEEDED UNDER NORMAL CONDITIONS WITH ADEQUATE VENTILATION. IF EXPOSURE EXCEEDS THE CONTROL LIMITS, NIOSH APPROVED RESPIRATORY EQUIPMENT MUST BE WORN.
- Eye:** EYE PROTECTION (CHEMICAL-TYPE GOGGLES AND/OR FACE SHIELD) SHOULD BE WORN WHENEVER THERE IS A LIKELIHOOD OF SPLASHING OR SPRAYING LIQUID.
- Skin:** WHEN SKIN CONTACT IS POSSIBLE, AND ESPECIALLY WHEN HANDLING HOT MATERIAL, PROTECTIVE CLOTHING SUCH AS GLOVES, IMPERVIOUS APRON, LONG-SLEEVES, BOOTS AND FACIAL PROTECTION MUST BE WORN.
- Other:** EMERGENCY EYE WASH FOUNTAINS AND SAFETY SHOWERS SHOULD BE AVAILABLE IN THE VICINITY OF ANY POTENTIAL EXPOSURE.

7. EMERGENCY AND FIRST AID

- Inhalation:** IMMEDIATELY REMOVE FROM CONTAMINATED AREA TO FRESH AIR. FOR RESPIRATORY DISTRESS, GIVE OXYGEN OR ADMINISTER CPR (CARDIOPULMONARY RESUSCITATION), IF NECESSARY. OBTAIN PROMPT MEDICAL ATTENTION.
- Eye Contact:** FLUSH WITH CLEAN LOW-PRESSURE WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.
- Skin Contact:** REMOVE CONTAMINATED CLOTHING. WIPE EXCESS OIL OFF WITH A DRY CLOTH. WASH AFFECTED AREA WELL WITH A WATERLESS CLEANSER FOLLOWED BY SOAP AND WATER. HOT LIQUID MAY CAUSE BURNS; FLUSH WITH COOL LOW-PRESSURE WATER AND GET MEDICAL TREATMENT.
- Ingestion:** DO NOT INDUCE VOMITING, SINCE ASPIRATION INTO THE LUNGS WILL CAUSE CHEMICAL PNEUMONIA. MUST OBTAIN MEDICAL ATTENTION PROMPTLY.

8. SPILL AND DISPOSAL

Actions if Material is Spilled or Leaked:

SHUT AND ELIMINATE ALL SOURCES OF IGNITION. KEEP PEOPLE AWAY. RECOVER FREE PRODUCT. ADD SAND, EARTH, OR OTHER SUITABLE ABSORBENT TO SPILL AREA. MINIMIZE SKIN CONTACT. HOT PRODUCT WILL SOLIDIFY WHEN COOLED. KEEP PRODUCT OUT OF SEWERS AND WATERCOURSES BY DIKING OR IMPOUNDING. ADVISE AUTHORITIES IF PRODUCT HAS ENTERED SEWERS OR WATERCOURSES. ASSURE CONFORMITY WITH APPLICABLE GOVERNMENTAL REGULATIONS.

Waste Disposal Methods:

MAXIMIZE PRODUCT RECOVERY FOR REUSE PRIOR TO DISPOSAL. USE APPROVED TREATMENT, TRANSPORTERS, AND DISPOSAL SITES IN COMPLIANCE WITH ALL APPLICABLE LAWS.

9. PHYSICAL AND CHEMICAL DATA

Specific Gravity (H₂O = 1 @ 39.2°F): AP 0.98 TO 1.3

Viscosity Units, Temp. (Method): AP 330 CST @ 135°C (D445)

Volatile Characteristics: SLIGHT

Appearance and Odor: BLACK COLORED VISCOUS LIQUID; SLIGHTLY CRACKED OR BURNT TO ASPHALTIC ODOR. SOLID AT AMBIENT TEMPERATURE.

Conditions to Avoid: EXTREME HEAT AND OPEN FLAME

Materials to Avoid: REACTS WITH STRONG ACIDS, OXIDIZING MATERIALS AND ALKALIES.

Hazardous Decomposition Products: BURNING OR EXCESSIVE HEATING MAY PRODUCE CARBON MONOXIDE AND OTHER HARMFUL GASES AND VAPORS INCLUDING OXIDES AND/OR OTHER COMPOUNDS OF SULFUR.

10. REGULATORY INFORMATION

REPORTABLE QUANTITY (RQ), EPA 40 CFR 302 (CERCLA SECTION 102)

NO RQ FOR PRODUCT OR ANY CONSTITUENT GREATER THAN 1% OR 0.1% (CARCINOGEN)

Toxic Chemicals for Emission Reporting, (SARA SECTION 313):

NO TOXIC CHEMICAL IS PRESENT GREATER THAN 1% OR 0.1% (CARCINOGEN)

Threshold Planning Quantify (TPQ), (SARA 301 - 304):

NO TPQ FOR PRODUCT OR ANY CONSTITUENT GREATER THAN 1% OR 0.1% (CARCINOGEN)

EPA Hazard Classification, (SARA 311 - 312):

Acute Health Hazard:
Chronic Health Hazard:
Fire Hazard:
Pressure Hazard:
Reactive Hazard:
Not Applicable: X

11. ADDITIONAL PRECAUTIONS

Handling & Storage:

PARTS AND EQUIPMENT USING OR CONTAINING THIS MATERIAL MUST BE STEAM-CLEANED PRIOR TO ALL MAINTENANCE PROCEDURES. ALL MATERIAL SAMPLING SHOULD BE CONDUCTED IN A MANNER WHICH AVOIDS VAPOR INHALATION OR SKIN CONTACT. SPECIAL CARE AND LABELING MUST BE PROVIDED DURING TRANSPORTATION/HANDLING OF LABORATORY SAMPLES. USE GOOD PERSONAL HYGIENE PRACTICES. WASH HANDS WITH PLENTY OF SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USE OF TOILET FACILITIES. DO NOT USE SOLVENTS (GASOLINE, KEROSENE, ETC.) OR ABRASIVE SKIN CLEANERS TO REMOVE PRODUCT FROM SKIN. OIL-SOAKED CLOTHING MUST BE PROMPTLY REMOVED AND LAUNDERED BEFORE REUSE. DISCARD CONTAMINATED LEATHER GOODS.

General Comments:

SOME OF THE INFORMATION PRESENT AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE MIXTURE ITSELF.

-----NOTE-----Qualifications

EQ = Equal	AP = Approximately	N/AV = Not Available
LT = Less Than	UK = Unknown	N/AP = Not Applicable
GT = Greater than	TR = Trace	N/DA = No Data Available

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