

2.0 PHYSICAL DATA

Physical Hazard Classification (Per 29 CFR 1910.1200):

Combustible	No Flammable	No	Pyrophoric	No
Compressed Gas	No Organic Peroxide	No	Reactivity	No
Explosive	No Oxid	Stable'	Yes	
	No Oxidizer	-		

Boiling Point, 760 mm Hg, *C (*F): -400(-750) 1.0-1.2
 Specific Gravity (60/160 OF) (H20 = 1):
 Vapor Density-(Air ~ 1):
 % Volatiles by Volume:
 Melting Point *C (*F)
 Vapor Pressure, mm Hg (25' C):
Solubility in Water:
 Evaporation Rate (n-butyl acetate = 1):
 pH of Undiluted Product:
 Appearance and Odor.

3.0 FIRE AND EXPLOSION DATA

Flash Point OC *C (F): Flash **Point, CC, *C** (F): Autoignition Temperature *C (*F) NFPA Rating2 Flammable Limits (% by volume in air): Extinguishing Media:

Special Fire Fighting Procedure:

Unusual Fire or Explosion Hazard;

> I Negligible 37 - 54 (98 . 130) ND Negligible NA NA Asphalt is a. dark-brown to black cementitious material, solid or semisolid in consistency. It has a tar-like or heavy hydrocarbon odor.

* 232 (> 450)
 * 232 (> 450)
 ND

HWth: 0 Flammability: I Reactivity: 0
 Lower: NA Upper: NA

C02, dry chemical, foam, water fog

Wear self-contained breathing apparatus in confined spaces. Avoid inhaMon of fumes. Water or foam may cause frothing. Use of water on asphalt above 1000 C (2120 F) can cause product to expand with **explosive** force.

Under some conditions, sulfur compounds in hot asphalt may evolve H2S or SO2 At higher H2S concentrations, odor fatigue may occur, resulting in life th=tening inhalation hazards. Adding water to hot asphalt presents an explosion hazard. Ilydrogen sulfide (H2S) may be prescrit in the vapor space of asphalt storage tanks. H2S can react **with** iron to form pyrophoric iron sulfide deposits causing and ignition hazard when exposed to air.

'HazardRating: least-0; slight-1; rmoderate-2; high-3; extremel-4
 CITGO assigned these **values** based upon NFPA guidelines.
 NA-Not Applicable ND-No Data
 Asphalt Cement, Ali Grades (ASPI.T; June 12, 1998 CIN: 1470)

NE-Not Established
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4.0 REACTIVITY DATA

Stability:	Stable.	
Conditions Contributing to Instability:		None.
Incompatibility:	Strong oxidizers	
Hazardous Decomposition Products:		Smoke, irritating, acrid fumes, SO ₂ , H ₂ S, CO ₂ and CO.
Hazardous Polymerization:	Hazardous polymerization is not expected to occur.	

5.0 SPILL, LEAK AND DISPOSAL PROCEDURES

If this product is spilled or released, the following steps should be taken:

Remove all ignition sources.

Isolate the area of the spill and restrict access to persons wearing protective clothing

Ventilate area of release to disperse mists and fumes, as necessary before entering area

Small Spills: Remove released material with shovels and place into container for disposal. (See Waste Disposal section below.)

• Large Spills: Evacuate area in the event of significant spills. Evaluate exposure potential. Respiratory protection may be required. Use protective clothing. Contain spill in temporary dikes to avoid product migration and to assist in recovery. Do not allow material to escape into sewers, ground water, drainage ditches or surface waters.

• Administer appropriate first aid as needed.

• OSHA HAZWOPER regulations may require establishing a regulated area with site control.

• Report releases as required to the appropriate federal, state and local authorities.

Waste Disposal:

• It is the responsibility of the user to determine if any residues are hazardous waste at the time of disposal.

• Contact the RCRA/Superfund Hotline at (900) 424-9346 or your regional US EPA office for guidance concerning case specific disposal issues.

Protective Measures During Repair and Maintenance of Contaminated Equipment:

• Refer to Section 7.0 - Special Protection Information.

• Avoid skin contact with hot asphalt.

• Check vapor space of heated storage tanks and process equipment for presence of hydrogen sulfide (H₂S) gas. Ventilate space as necessary to reduce atmospheric concentrations of H₂S and hydrocarbon vapors to safe levels.

6.0 HEALTH HAZARD DATA

Health Hazard Classification (Per 29 CFR 1910.1200).

NA-Not Applicable

ND-No Data

NE-Not Established

Asphalt Cement, All Grades (ASPLT; June 12, 1998, CIN: 1470)

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Highly Toxic	No	Sensitizer (possible phototoxic)	Yes
Toxic	No	Reproductive Effects	No
Corrosive	No	Mutagen	No
Irritant (fumes)	Yes	Target Organ, (Respiratory System)	Yes

6.0 HEALTH HAZARD DATA (continued)

Carcinogen:

Product/Component	CAS No.	Conc. (%) NTP	IARC	OSHA	Other
Asphalt	9052-424	98-100	No	Yes'	No No

*The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of extracts of steam-refined bitumens, air refined bitumens and pooled mixtures of steam- and air- refined bitumens in experimental animals. Further, IARC has determined that there is limited evidence for the carcinogenicity of undiluted steam-refined bitumens in experimental animals. Also, IARC determined that there is inadequate evidence that bitumens alone are carcinogenic to humans,

Toxicity Summary: Asphalt fumes may be irritating to eyes, skin and respiratory system.

Major Route of Entry; Inhalation mists or fumes and skin contact.

Acute Exposure Symptoms:

Inhalation: Asphalt fumes can irritate the lungs, nose and throat Exposure to hot asphalt fumes and hydrogen sulfide (H2S) gas released can produce respiratory irritation, pulmonary edema, and hy

poxia.

Hydrogen sulfide (H2S) causes respiratory irritation at concentrations of 4 to 100 ppm. At low concentrations H2S has an odor of rotten eggs. At high concentrations, H2S odor is not apparent. At concentrations above 500 Ppm, H2S causes unconsciousness and death by respiratory paralysis. The National Institute for Occupational Safety and Health has determined that atmospheres containing 100 ppm or more of H2S are immediately dangerous to life and health.

Dermal: Asphalt is normally shipped hot (280 to 350 F) and will cause burns to the skin. Repeated or prolonged contact at ambient temperatures may cause skin irritation.

Eye: Contact with hot product will cause eye burns. Asphalt fumes are irritating.

Ingestion: Chewing asphalt has caused gastrointestinal effects. Gastric masses (Bezoars) and stomach (pyloric) obstructions have been reported in individuals who have chewed and swallowed asphalt.

Injection- Injection is not a likely route of exposure.

Chronic Exposure Symptoms.

Asphalt fumes are an irritant to eyes, skin and respiratory tract. Repeated or prolonged contact with asphalt at ambient temperatures may cause skin irritation. Long-term exposure can cause dermatitis, acne, Photosensitization and, more rarely, pigmentation of the skin.

The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of extracts of steam-refined bitumens, air refined bitumens and pooled mixtures of steam- and air- refined bitumens in experimental animals. Further, IARC has determined that there is limited evidence for the carcinogenicity of undiluted steam-refined bitumens in experimental animals. Also, IARC determined that there is inadequate evidence that bitumens alone are carcinogenic to humans.

NA-Not Applicable
Established

ND-No Data

NEW-Not

6.0 HEALTH HAZARD DATA (continued)

Other Special Effects:

Data published for the product generally refers to dermal contact at ambient conditions for potential chronic effects. Good personal hygiene is expected to eliminate any long-term effects. Acute hazards are recognized at the elevated temperature of use. Severe burns to the skin and eyes can occur with contact. Eye and skin protection should be used when there is a splash

potential. Hot fumes may provide discomfort and irritation upon breathing. Respiratory

7,

protection may be required when working with hot product in enclosed arms where there is insufficient ventilation,

CAUTION H2S! Since sulfur compounds in hot asphalt may form hydrogen sulfide (H2S) gas, appropriate precautions should be taken. H2S is a colorless toxic gas with an odor at low concentrations characteristic of rotten eggs. Odor cannot be relied upon as a means of detection because the sense of smell rapidly becomes insensitive to H2S and the H2S odor may be masked by the odor of hot asphalt. Because H2S may accumulate in tanks and **bulk** transport compartments, personnel should stand up-wind and avoid breathing fumes and off gases when opening hatches or dome covers. H2S has been measured in dangerous concentrations inside, asphalt tanks,

Medical Conditions Aggravated by Exposure:

Persons with preexisting skin or respiratory disorders may have their conditions aggravated by over exposure to this material.

First Aid and Emergency Procedures for Acute Effects:

Inhalation: For effects of asphalt fumes, move victim to fresh air. Provide respiratory assistance, if needed. If victim is overcome, treat for hydrogen sulfide exposure by immediately evacuating victim to fresh air. 100 % humidified oxygen should be administered by a qualified person. Seek medical attention immediately

Dermal, If burned by hot product, cool skin by quenching with cool water. Do not remove product from skin. Seek medical attention immediately.
For contact with product at ambient temperatures, wash with soap and water.

Eyes-, If hot product is splashed into eyes, flush with water and obtain medical attention immediately. Exposed eyes should be irrigated with copious amounts of room temperature water. If irritation, pain, swelling, excessive tearing or sensitivity to light persists, seek medical attention immediately.

Ingestion: Ingestion of cool asphalt is relatively non-toxic. Chewing asphalt is not recommended.

Notes to Physician:

Hot asphalt may cause eye and skin burns fumes are an irritant to the respiratory system. skin and eyes. Immerse asphalt--covered skin in cool water to limit tissue damage and prevent spread of liquid asphalt. Hypothermia may occur with excessive immersion; cooling should be continued until tar is hardened and cool. Use of vegetable oil may be of assistance in minimizing skin **loss** when removing cool, hardened asphalt. Treat intoxications as hydrogen sulfide and sulfur dioxide effects.

NA-Not Applicable

ND-No Data

NE-Not Established

7.0 SPECIAL PROTECTION INFORMATION

Ventilation Requirements Use in well Ventilated area. In confined space, mechanical ventilation may be required to maintain airborne concentrations below applicable workplace exposure levels as evaluated by designated and properly trained individuals. Applicable Workplace Exposure Levels' Chemical Component

Asphalt Petroleum Fumes

Hydrogen Sulfide 1 10(14) 15(21)

1
 1 Sulfur Dioxide 120) 1 5(13) No

ACGIH TLV STEL Ceiling

(C)

ppm (mg/m3)

NE

ACGIH TLV Skin Rotation?

No

No

ACGIH TLV

TWA ppm (Mg/M3)

(5)

OSHA PEL OSHA PEL TWA ppm (Mg/ m3)

NE

1m

OSHA

STEL/
 Ceiling (C)

ppm (mg/M3)

NE

20(28)

~No

PEL
 Skin
 notation?

No

NO

Specific Personal protective Equipment:

0 under which this

P

ersonal protective equipment should be selected based upon the conditions material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations.

Respirator: Air concentrations of fumes determine the level of protection needed. Use only NIOSH approved respiratory equipment within the limits of the protection factors for that equipment. Supplied air respirators are required for confined space entry.

Use splash proof goggles with face shield when handling hot asphalt

Protect against hot liquid. Use heat and chemical resistant gloves and full body work clothing. Avoid direct skin contact.

Clothing or Equipment- For potential contact with hot asphalt, use whole body protection. Discard contaminated contaminated clothing including shoes. Wash thoroughly with soap and water after handling.

Eyes:

Dermal:

9.0 TRANSPORTATION AND SPECIAL PRECAUTIONS

Storage. Materials represented by this MSDS are classified as NFPA Class III B combustible liquid. Store distant from fire and ignition sources, Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product. Empty containers can be dangerous if use to store toxic, flammable or reactive materials. Cutting or welding of empty containers can cause fire, explosion or release of toxic fumes from residues. Do not pressurize or expose empty containers to open flame or heat. Keep container closed and drum bungs in place. All label warning and precautions must be observed. Return empty drum to a qualified reconditioner. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

Caution:

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N -Not Established

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8.0 TRANSPORTATION AND SPECIAL PRECAUTIONS (continued)

DOT Information:

Ptoper Shipping Name-Hazard Class: Hazard Identification No.: Packaging Group: Marking(s) Required:

9.0 ENVIRONMENTAL DATA

Elevated Temperature Liquid, n.o.s. (Petrolcuin Asphalt)

9

UN 3257

III

Hot, _ Gallons

Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 313 - Toxic Chemtcals:

This product is not known to contain any components in concentrations above *de minimis* levels that are **listed as toxic** chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA.

Section 311/312 - Hazard Categories:

This product may meet one or more of the criteria for the hazard categories defined in 40 CFR Part 370 as established by Sections 311 and 312 of SARA as indicated below:

Immediate (Acute) Health Hazard: Yes
Delayed (Chronic) Health Hazard: Yes

Fire Hazard: No

Sudden Release of Pressure Hazard: No
Reactive Hazard: No

Section 302 - Extremely Hazardous Substances:

This product is not known to contain any components in concentrations greater than one percent that are listed as Extremely Hazardous Substances in 40 CFR Part 3 55 pursuant to the requirements of Section 302(a) of SARA.

Clean Water Act (CWA)

Under the CWA, discharges of crude oil and petroleum products to surface water without proper federal and state permits must be reported immediately to the National Response Center at (300) 424-8802.

Compreheasive Environmental Res ensation & Liability Act (CERCLA) Section 102

sponse Comp

Harzardous Substances:

As defined by CERCLA the term "hazardous substance" does not include petroleum, including crude *oil* or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance.

Toxic Substances Control Act (TSCA):

Reported In TSCA Inventory as:	Product	Components
Asphalt		

|

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10.0 LABELING

CAUTION:

Hot liquid may cause burns to eyes and skin.

Fumes may be toxic and irritant to the respiratory system.

Vapor spaces of tanks may contain Hydrogen Sulfide.

FIRST AID

Skin and Eyes: **Cool affected** area with water or ice. Seek medical attention immediately.

Respiratory: Administer oxygen and seek medical attention immediately.

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NA-Not Applicable

ND-No Data

NE-Not Established