Material Safety Data Sheet

MSDS ID NO.: 0316MAR019
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1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code: 93X
Product name: Marathon 0-10 Pen Asphalt
Synonym: Marathon SDA Bottoms; Solvent Deasphalted Residuum; 0 Pen Asphalt; 3 Pen Asphalt; 10 Pen Asphalt
Chemical Family: Petroleum Residuum
Formula: Mixture

Manufacturer:
Marathon Petroleum Company LP
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

0-10 Pen Asphalt or Solvent Deasphalted Residuum (SDA) is a complex mixture of hydrocarbons obtained as the solvent soluble fraction from C3-C4 solvent deasphalting of a residuum. It consists of hydrocarbons generally having chain lengths > 25 carbons.

Product information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Marathon 0-10 Pen Asphalt	64741-95-3	100			

Component Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Deasphalted Residual Oil	64741-95-3	100			
Hydrogen Sulfide	7783-06-4	0-0.01	1 ppm TWA 5 ppm STEL	= 10 ppm TWA = 14 mg/m^3 TWA = 15 ppm STEL = 21 mg/m^3 STEL	Marathon Exposure Guideline: 10 ppm TWA 15 ppm STEL

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING!

HOT PRODUCT CAN CAUSE BURNS TO SKIN
CONTAINS HYDROGEN SULFIDE GAS. MAY BE FATAL IF INHALED
GAS MAY EVOLVE FROM THIS MATERIAL AND ACCUMULATE IN CONFINED SPACES.
WATER CONTACT CAN CAUSE VIOLENT ERUPTION OF HOT ASPHALT
FUMES FROM HOT PRODUCT CAN CAUSE IRRITATION TO THE EYES, SKIN AND RESPIRATORY SYSTEM

SEE TOXICOLOGICAL INFORMATION SECTION FOR MORE INFORMATION

STABLE

Inhalation:

May release hydrogen sulfide gas which is highly toxic. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since loss of smell rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.
May cause central nervous system depression or effects.
Fumes or vapors from the heated material may be irritating to the respiratory tract.
Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information."

Ingestion:

Contact with hot material may cause thermal burns. If swallowed at ambient temperature no significant adverse effects are expected. May cause irritation of the mouth, throat and gastrointestinal tract. Ingestion of large amounts may cause gastrointestinal blockage.

Skin contact:

Contact with hot material may cause thermal burns. Contact may cause reddening, itching and inflammation. Skin contact may cause harmful effects in other parts of the body.

Eye contact:

Exposure to hot material can cause thermal burns. Vapors may cause eye irritation and sensitivity to light. Effects may become more serious with repeated or prolonged contact.

Carcinogenic Evaluation:

Product information:

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Marathon 0-10 Pen Asphalt 64741-95-3	Supplement 7 [1987], Monograph 33 [1984]			Present

Notes: The International Agency for Research on Cancer (IARC) has not evaluated this product.

Component Information:

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Deasphalted Residual Oil 64741-95-3	Supplement 7 [1987], Monograph 33 [1984]			Present

4. FIRST AID MEASURES

Eye Contact:

If hot material comes in contact with eyes hold the eyelids apart and flush the eye with a large amount of cool water for at least 15 minutes. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact:

If hot material gets on skin, immediately flush affected area with large amounts of cool water. Do not attempt to remove the material from the skin, or to remove contaminated clothing. Get immediate medical attention.
For cold material, immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists.
Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties. Discard contaminated leather goods.

Ingestion:

Do not induce vomiting. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to an unconscious person.
Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Inhalation:

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN:

INHALATION: Inhalation exposure can produce toxic effects. Treat intoxications as hydrogen sulfide exposures. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis.

SKIN: Hot material may cause skin burns. Immerse skin covered with hot material in cool water to limit tissue damage and prevent spread of liquid material. Consider leaving cooled material on skin unless contraindicated by contamination or potential for tattooing. If removal is necessary, mineral oil may be of assistance in minimizing skin loss when removing cool, hardened asphalt.

EYES: Hot material may cause burns to the eyes. Early ophthalmologic evaluation is recommended.

Medical Conditions Aggravated By Exposure:

skin, lungs, respiratory system,

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

5. FIRE FIGHTING MEASURES

Specific hazards: This product is not a combustible material per the OSHA Hazard Communication Standard, but will ignite and burn at temperatures exceeding the flash point.

Special protective equipment for firefighters: Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: >550 F
Autoignition temperature: No data available.
Flammable limits in air - lower (%): No data available.
Flammable limits in air - upper (%): No data available.

NFPA rating:
Health: 2
Flammability: 1
Instability: 0
Other: -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate. Contain liquid with sand or soil. Recover and return product to source.

7. HANDLING AND STORAGE

Handling:

Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues.

Harmful concentrations of hydrogen sulfide (H2S) gas can accumulate in excavations and low-lying areas as well as the vapor space of storage and bulk transport compartments. Stay upwind and vent open hatches before unloading.

Avoid skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

Engineering measures: Local or general exhaust required in an enclosed area or when there is inadequate ventilation.

Respiratory protection: 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. When H2S vapors exceed permissible limits, i.e., in confined spaces or bulk transport loading/unloading, a positive-pressure atmosphere supplying respirator is recommended. Self-contained breathing apparatus should be used for fire fighting.

Provided hydrogen sulfide (H2S) is not detected: if there is potential to exceed the exposure limits for asphalt fumes a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters with R or P95 filters should be used. A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed when conditions warrant the use of a respirator.

Note: Air purifying respirators are not to be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient atmospheres, (less than 19.5 percent oxygen) or under conditions that are immediately dangerous to life and health (IDLH).

Skin and body protection: Impermeable gloves to prevent skin contact.

Eye protection: Goggles and faceshield when handling hot material.

Hygiene measures: Chemical resistant apron or other protective clothing may be needed to avoid skin contact. Use mechanical ventilation equipment that is explosion-proof.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Light to Dark Brown Liquid
Physical state (Solid/Liquid/Gas):	Liquid
Substance type (Pure/Mixture):	Mixture
Color:	Brown
Odor:	Hydrocarbon
Molecular weight:	Not determined.
pH:	Neutral
Boiling point/range (5-95%):	752 F
Melting point/range:	Not determined.
Decomposition temperature:	Not applicable.
Specific gravity:	1.03-1.13
Density:	8.5-9.4 lbs/gal
Bulk density:	No data available.
Vapor density:	No data available.
Vapor pressure:	Not determined.
Evaporation rate:	No data available.
Solubility:	Not determined
Solubility in other solvents:	No data available.
Partition coefficient (n-octanol/water):	No data available.
VOC content(%):	No data available.
Viscosity:	No data available.

10. STABILITY AND REACTIVITY

Stability: The material is stable at 70 F, 760 mm pressure.

Polymerization: Will not occur.

Hazardous decomposition products: Combustion produces carbon monoxide, aldehydes, aromatic and other hydrocarbons.

Materials to avoid: Strong oxidizers such as nitrates, chlorates, peroxides.

Conditions to avoid: Sources of heat or ignition.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product information:

Name	CAS Number	Inhalation:	Dermal:	Oral:
Marathon 0-10 Pen Asphalt	64741-95-3	No data available	No data available	No data available

Toxicology Information:

PETROLEUM ASPHALT: Eye and upper respiratory tract irritation has been reported in some asphalt workers (paving and roofing operations) but they are typically mild and transient. Some studies indicate that asphalt paving workers may experience lower respiratory tract symptoms (e.g., coughing, wheezing, and shortness of breath) and pulmonary function changes. Other studies of asphalt workers found no consistent relationship between exposure to asphalt fumes and pulmonary function. Increased levels of 1-hydroxypyrene (a marker for exposure to polycyclic aromatic hydrocarbons) have been observed in the urine of asphalt workers. Genotoxicity studies (e.g., DNA adducts in the urine) of asphalt workers have been largely inconclusive.
A slight increase in lung cancer mortality was reported in a study of European workers exposed to paving and mastic asphalt, but conclusions were equivocal. A follow-up case-control epidemiology study of asphalt paving workers sponsored by the International Association for Research in Cancer (IARC) concluded that there was no evidence that asphalt exposure was linked to lung cancer.
An increase in skin tumors was observed in lifetime studies of laboratory rodents exposed to extracts of asphalt (bitumen). The relevance of these studies to humans is not clear. No increase in skin tumors was observed in a lifetime bioassay where laboratory mice were treated with paving fume condensates. No increase in lung or other tumors were observed in a lifetime inhalation study in laboratory rats exposed to fumes from paving asphalt.

IARC has determined that there is sufficient evidence that extracts of steam and air refined bitumens are carcinogenic in animals, and that there is inadequate evidence that bitumens alone are carcinogenic to humans.

ASPHALTS USED IN ROOFING OPERATIONS: Some asphalts including roofing flux are further processed (oxidized) by the user or customer before use. An increased incidence of skin tumors was observed in a mouse skin carcinogenicity study where animals were exposed to condensed fumes collected from an oxidized roofing asphalt (BURA Type III) at above 450°F. Additional studies where mice were exposed to oxidized roofing asphalt fume condensates both as a tumor initiator and as a tumor promoter indicate that roofing fume condensate caused tumors as a result of initiation.

SOLVENT DEASPHALTED RESIDUAL OIL: Lifetime dermal bioassays in mice with petroleum residua and/or its major components have produced tumors following prolonged and repeated skin contact. Repeated dermal application has produced severe irritation and systemic toxicity in subacute toxicity studies. Some components of petroleum residua streams were found to be positive in a few mutagenicity tests while negative in the majority of others. The exact relationship between these results and human health is not known.

TARGET ORGANS: TARGET ORGANS: skin, lungs, respiratory system, eyes, central nervous system, blood

12. ECOTOXICOLOGICAL INFORMATION

Mobility:

Not likely to move rapidly with surface or groundwater flows because of its low water solubility.

Ecotoxicity:

Practically non-toxic to the aquatic environment.

Bioaccummulation:

May bioaccumulate in aquatic organisms.

Persistance/Biodegradation:

Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Cleanup Considerations: This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

14. TRANSPORT INFORMATION

49 CFR 172.101:

DOT:

Transport Information: This material when transported via US commerce would be regulated by DOT Regulations.

Proper shipping name:	Elevated Temperature Liquid, N.O.S.
UN/Identification No:	UN 3257
Hazard Class:	9
Packing group:	III
DOT reportable quantity (lbs):	Not applicable.

Comments: (Hot Petroleum Asphalt) This material must not be transported when heated at or above its flash point.

Proper shipping name:	Elevated Temperature Liquid, N.O.S.
UN/Identification No:	UN 3257
Hazard Class:	9
Packing group:	III

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Deasphalted Residual Oil	NA
Hydrogen Sulfide	= 500 lb TPQ

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Deasphalted Residual Oil	NA
Hydrogen Sulfide	= 100 lb final RQ = 45.4 kg final RQ

SARA Section 311/312 The following EPA hazard categories apply to this product:

Acute Health Hazard

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

Name	CERCLA/SARA 313 Emission reporting:
Deasphalted Residual Oil	None
Hydrogen Sulfide	None

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Deasphalted Residual Oil

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed

Deasphalted Residual Oil

Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	carcinogen
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Hydrogen Sulfide

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 1017
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Extraordinarily hazardous
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	extraordinarily hazardous
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1017 TPQ 500 lb
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 100 lb RQ air = 100 lb RQ land/water

Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Hydrogen Sulfide	A, B1, D1A, D2B	1 %

NOTE: Not Applicable.

16. OTHER INFORMATION

Additional Information: The pronounced and easily-recognized rotten egg odor of hydrogen sulfide gas (H2S) can be detected at concentrations as low as 0.003-0.13 ppm. Since higher H2S concentrations (100-200 ppm) cause olfactory fatigue and other hydrocarbon odors can "mask" H2S, the sense of smell cannot be used as a reliable indicator of H2S exposure.

Prepared by: Mark S. Swanson, Manager, Toxicology and Product Safety

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End of Safety Data Sheet