WHMIS	Personal Protection Equipment	TDG (Ground)
		

1 Identification of the substance/mixture and of the company/undertaking

Product identifier
Trade name: Bitumen
SDS Nr: SDS-0031
Chemical description: Reformate
CAS No: 8052-42-4
EC No: 232-490-9

Registration-No: Registration deadline not expired.
Use: Used in the production and formulation of gasoline and fuel products, chemical industry feedstock, and refinery feedstock.

Company identification: Freepoint Commodities, LLC
58 Commerce Road
Stamford, Ct. 06902

E-Mail address (competent person): Lou Santore

Lou Santore [LSantore@freepoint.com]

Emergency telephone number: Within the U.S. or Canada: 1 800 424 9300
Outside the U.S. and Canada: +1 703 527 3887 (collect calls accepted)

MSDS prepared by: Paule Patterson, ENERCON Services, Inc.

2 Hazards identification

GHS Classification:

Flammable Liquids - Category 2
Germ Cell Mutagenicity – Category 1B
Carcinogenicity - Category 1A
Specific Target Organ Toxicity Single Exposure - Category 3
Specific Target Organ Toxicity Repeat Exposure - Category 2

GHS LABEL ELEMENTS
Symbol(s)

Signal Word

Danger

CLP Hazard Statements :

PHYSICAL HAZARDS:
H224: Extremely flammable liquid and vapor.

ENVIRONMENTAL HAZARDS:
H411: Toxic to aquatic life with long lasting effects.

HEALTH HAZARDS:
H350: May cause cancer.
H304: May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H373: May cause damage to organs or organ systems through prolonged or repeated exposure.
EUH066: Repeated exposure may cause skin dryness or cracking.

CLP Precautionary statements
Prevention :
P201: Obtain special instructions before use.
P210: Keep away from heat, sparks, open flame, hot surfaces - No smoking.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Storage:
P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Response :
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331: Do NOT induce vomiting.

Disposal:
P501: Dispose of contents and container to appropriate waste site or reclaimer in accordance with local, state, and national regulations.

Other Hazards:

Hydrogen sulphide is highly toxic and may be fatal if inhaled. Hydrogen sulphide (H2S), an extremely flammable and toxic gas, and other hazardous vapors may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers.

May dull the sense of smell, so do not rely on odor as an indication of hazard.

H2S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odor threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary edema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required.

Do not depend on sense of smell for warning. H2S causes rapid olfactory fatigue. There is no evidence that H2S will accumulate in the body tissue after repeated exposure.

Fumes from heated product may cause eye and lung irritation. Hot product can cause thermal burns.
On rare occasions, Hydrogen Sulphide may be present which can accumulate to hazardous levels in enclosed spaces.

Other Information:

This product is intended for use in closed systems only.

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.
Label elements According to Directive 67/548/EEC & Directive 1999/45/EC

3 Composition/information on ingredients

A natural product derived from various oil production fields primarily consisting of a complex combination of paraffinic and aromatic hydrocarbons and small amounts of nitrogen and sulfur compounds.

EC Classification No. 1272/2008

Component	Product Identifiers	Percent	Hazard symbol(s) and hazard statement(s)
Bitumen (Asphalt)	**CAS No:** 8042-05-9	**100**	**Flam. Liq. 1; H224** **Asp. Tox. 1; H304** **Eye Damage 2A; H319** **STOT SE 3; H336** **Muta. 1B; H340** **Carc. 1B; H350** **Repr. 2; H361fd** **STOT RE 2; H373** **Aquatic Chronic 2; H411**
Benzene	**CAS No:** 71-43-2	<1	

4 First aid measures

First Aid: Eyes
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin
Remove contaminated clothing. Rinse thoroughly for at least 15 minutes. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

First Aid: Ingestion
DO NOT INDUCE VOMITING. Do not give liquids if victim is unconscious. If victim is conscious, wash mouth out with water and provide water to drink (~ ½ pint or 200 – 300 ml). Obtain immediate medical attention. If spontaneous vomiting occurs, position victim forward, with head between knees, to reduce the risk of aspiration. Monitor for breathing difficulties.

First Aid: Inhalation
Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately if breathing becomes difficult.

Exposure to concentrations above 100% of the LEL such as 5% or 50,000 ppm may sensitize heart and cause irregular heartbeat. High concentrations may exclude oxygen and cause dizziness and suffocation. Contact with liquid or cold vapor may cause frostbite or freeze burn.

Exposure to concentrations above 10% of the LEL may cause a general central nervous system (CNS) depression typical of anesthetic gases or intoxicants. Aliphatic hydrocarbon gases may build up in confined spaces and may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in narcosis, unconsciousness, and possibly lead to death.

Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Notes to physician: Symptoms: Dizziness, Headache, Nausea, Frostbite, Vomiting, Discomfort Hazards:
This material may be a cardiac sensitizer; avoid the use of epinephrine.

Treatment: Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5 Fire-fighting measures

General Fire Hazards

See Section 9 for Flammability Properties.
Vapors can readily form explosive mixtures with air. Heavier than air vapors can flow along surfaces to ignition sources and flash back. Use self-contained breathing apparatus in enclosed areas.
Water spray may cause rapid expansion of foaming material. Water spray should only be used to keep exposed containers cool and to flush spills away from exposure.
For massive fires, use unmanned hose holders or monitor nozzles. If this is impossible, withdraw from area and let fire burn. Always stay away from tanks engulfed in fire.

Unusual Fire or Explosion Hazards

Keep away from heat, sources of ignition, halogens, strong acids, alkalis and strong oxidizers. This material can react violently with oxidizing agents.

Hazardous Combustion Products

Fumes, smoke, carbon monoxide, carbon dioxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, fire-fighting foam, or gaseous extinguishing agent. Water may splash and spread flaming liquid. ***DO NOT USE WATER JET.*** Avoid spreading burning liquid with water used for cooling purposes. Do not flush down public sewers. The use of self- contained breathing apparatus and protective clothing is recommended for fire fighters. Avoid inhalation of vapors.

LARGE FIRES: Water spray, fog or firefighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Water may splash and spread flaming liquid. ***DO NOT USE WATER JET.*** Avoid spreading burning liquid with water used for cooling purposes. Do not flush down public sewers. The use of self- contained breathing apparatus and protective clothing is recommended for fire fighters. Avoid inhalation of vapors.

Unsuitable Extinguishing Media

Water jet directed at source.

Fire Fighting Equipment/Instructions

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing. Isolate area around container involved in fire.

Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied firefighting foam.

6 Accidental release measures

Recovery and Neutralization

Danger, Flammable, eliminate all ignition sources. Equipment used in spill cleanup must be grounded to prevent sparking. Prevent entry into waterways, sewers, and confined areas. Carefully contain and stop the source of the spill, if safe to do so.

Report spills/releases as required to appropriate authorities.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container, seal tightly for proper disposal or reclamation.

Emergency Measures

Small Spills:
Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Product may release substantial amounts of flammable vapors and gases (e.g., methane, ethane, and propane), at or below ambient temperature depending on source and process conditions and pressure. Sweep absorbed material with non-sparking tools.

Large Spills:
Isolate the hazard area at least 150 feet in all directions and restrict entry to unnecessary personnel. Shut off source of leak only if it can be done so safely or dike and contain the spill. Wear appropriate respirator and protective clothing. Water fog may be useful in suppressing vapor cloud contain run-off. Remove with vacuum trucks. Soak up residue with sand or other suitable material, place in containers for proper disposal. Sweep absorbed material with non-sparking tools. Flush with water and disposal of flushing solutions as above. Local, state and federal disposal regulations must be followed.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Bitumens are immiscible with water but may be adsorped in the sediment. Surface material may be skimmed off for later disposal.

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of firefighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection - do not discharge solid water stream patterns into the liquid resulting in splashing.

Prevention of Secondary Hazards

Caution - spillages may be slippery.

7 Handling and storage

Handling Procedures

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area.
Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.
On rare occasions, Hydrogen Sulfide may be present which can accumulate to hazardous levels in enclosed spaces. Avoid all personal contact and breathing of gas.

Do not get in eyes, on skin or on clothing. Do not breathe vapors, mists or fumes. Wear protective equipment described in section 8 if exposure conditions warrant. Use only with adequate ventilation.

Storage Procedures

Keep away from flame, sparks, excessive temperatures, static electricity, pilot lights, and other ignition sources. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Product Transfer:

Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapor mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<= 1 m/s until fill pipe submerged to twice its diameter, then <= 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations

Incompatibilities

Keep away from oxidizers.

8 Exposure controls/personal protection

Component Exposure Limits:

Components	CAS #	OSHA	ACGIH	NIOSH
Bitumen	8042-05-9	N/A	N/A	5 mg/m3
Benzene	71-43-2	5 ppm	N/A	0.1 ppm

Engineering Measures

Use adequate ventilation to provide explosion proof ventilation to keep vapor concentrations of this product below exposure and flammability limits in enclosed work areas, particularly in confined spaces. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment: Hands

If prolonged or repeated skin contact is likely wear oil impervious gloves and clothing. If handling hot material use heat-resistant gloves, apron and/or other clothing. Good personal hygiene practices should always be followed

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Respiratory

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy

of exposure controls. For some substances biological monitoring may also be appropriate.

A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations (for exposures over TLV up to 300 ppm) are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Employees engaged in handling operations involving benzene must be provided with, and required to wear and use, a *half-mask* filter-type respirator for dusts, mists, and fumes. A respirator affording higher levels of protection than this respirator may be substituted.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

Hygiene Measures

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use gasoline or solvents (naphtha, kerosene, etc.) for washing this product from exposed skin areas. Waterless hand cleaners are effective.
Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

9 Physical and chemical properties

Appearance:	Black or brown tar-like texture	**Odor:**	Characteristic hydrocarbon odor
Physical State:	Viscous Liquid	**pH:**	ND
Vapor Pressure:	Variable	**Vapor Density:**	ND
Boiling Point:	> 554 °F (>290 °C)	**Melting Point:**	ND
Solubility (H2O):	Insoluble to slightly soluble	**Specific Gravity:**	1.02
Evaporation Rate:	ND	**VOC:**	ND
Octanol/H2O Coeff.:	ND	**Flash Point:**	< 73 °F (< 23 °C)
Flash Point Method:	ND	**Upper Flammability Limit (UFL):**	ND
Lower Flammability Limit (LFL):	ND	**Burning Rate:**	ND
Auto Ignition:		ND	

10 Stability and reactivity

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Hazardous Polymerization will not occur.

Conditions to Avoid

Hot product in contact with water can cause foaming or sudden evolution of steam which could cause pressure build-up and possibly rupture a tank or vessel. Overheating may result in thermal cracking that produces toxic and flammable vapors.

Materials to avoid : Halogens, strong acids, alkalis and oxidizers.
Hazardous decomposition products : Fumes, smoke, carbon monoxide, sulphur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

Incompatible Products

Keep away from halogens, strong oxidizers, alkalis, and strong acids.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke), sulfur oxides, and other decomposition products.

11 Toxicological information

Acute Toxicity

A: General Product Information

May cause cancer. Contains benzene, a classified IARC 1 chemical (Known Human Carcinogen). Also contains ethyl benzene, which is classified as an IARC 2B chemical (Possibly Carcinogenic to Humans).
Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.
May be Fatal or Harmful if swallowed and enters airways. Occupational exposure to the substance or mixtures may cause adverse effects.

B: Component Analysis - LD50/LC50

Petroleum distillates (naphtha) (8002-05-9)
Oral LD50 Rat >2000 mg/kg;
Dermal LD50 Rabbit >2000 mg/kg

Potential Health Effects: Skin Contact Property

Causes skin irritation. Prolonged contact may cause defatting of skin which can lead to dermatitis.

Potential Health Effects: Eye Contact Properties

Contact with eyes may cause moderate to severe irritation.

Potential Health Effects: Ingestion

Ingestion may cause irritation and malaise. Swallowing or vomiting of the liquid may result in aspiration into the lungs.

Potential Health Effects: Inhalation

Inhalation of vapors may cause drowsiness and dizziness. Inhalation studies of high concentrations of bitumen fumes in rodents produced bronchitis, pneumonitis and lung changes (fibrosis and cell damage).

Carcinogenicity:

Chronic mouse skin painting studies of straight run bitumen showed no evidence of carcinogenic effects. However, some bituminous compounds may contain low levels of polycyclic aromatic hydrocarbons (PCAHs).
Dilution with solvents and prolonged repeated contact under conditions of poor personal hygiene, are a suspected cause of skin cancer in humans.

Germ cell Mutagenicity:

Not believed to cause genetic defects.

Reproductive toxicity:

Not believed to cause reproductive defects.

Specific target organ toxicity -single exposure- Not classified.
Specific target organ toxicity -repeated exposure - Not classified.

12 Ecological information

Eco toxicity

A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under local, State, and Federal regulations.

B: Component Analysis - Eco toxicity - Aquatic Toxicity

Toxicity to fish : Not established.
Toxicity to aquatic organisms : This substance is practically non-toxic to aquatic organisms (LL50: >1000 mg/l).

Bioaccumulation : Minimal owing to low water solubility. Substance is considered not subject to biodegradable.

Mobility : Adsorbs in soil

May be dangerous if it enters water intakes, notify local health and wildlife officials, notify operators of nearby water intakes.

13 Disposal considerations

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

This material and its container must be disposed of in a safe way.
It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local, state, and federal regulations.

Disposal Regulatory Requirements:

Recovered non-usable material is regulated by the US EPA as a hazardous waste due to its ignitibility characteristics (D001) and its benzene content (D018).

Container Cleaning and Disposal: "Empty" Container Warning:

"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

14 Transport information

DOT Information:

Shipping Name: Bitumen
UN #: 1267
Hazard Class: 9 - Packing - II

Note : Product may be transported by air or road if its temperature is below 100°C and its flashpoint.

Land transport (ADR/RID):
ADR
14.1 UN No. : 1267
14.2 Proper shipping name: Bitumen
14.3 Transport Hazard Class: 9
14.4 Packing group: II Danger label (primary risk): 9
14.5 Environmentally Hazardous: Yes

RID
14.1 UN No. : 1267
14.2 Proper shipping name: Bitumen
14.3 Transport Hazard Class: 9
14.4 Packing group: II Danger label (primary risk): 9
14.5 Environmentally Hazardous: Yes

Sea transport (IMDG Code):
14.1 UN No. : 1267
14.2 Proper shipping name: Bitumen
14.3 Transport Hazard Class: 9
14.4 Packing group: II Danger label (primary risk): 9
14.5 Environmentally Hazardous: Yes

Air transport (IATA):
14.1 UN No. : 1267
14.2 Proper shipping name: Bitumen
14.3 Transport Hazard Class: 9
14.4 Packing group: II Danger label (primary risk): 9
14.5 Environmentally Hazardous: Yes
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Pollution Category: Not applicable.
Ship Type: Not applicable.
Product Name: Not applicable.
Special Precaution: Not applicable.

Additional Information: MARPOL Annex 1 rules apply for bulk shipments by sea.

15 Regulatory information

Component Analysis

This material contains no "EXTREMELY HAZARDOUS SUBSTANCES" required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

US OSHA Hazard Communication Standard: This product may be used in certain applications where temperature may lead to generation of bitumen fumes.
Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KECI, ENCS, PICCS and IECSC.

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number
BENZENE	71-43-2

International Regulations
Inventory Status
Not determined

State and Local Regulations
California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer.
BENZENE

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause reproductive harm.
BENZENE

16 Other information

DISCLAIMER OF LIABILITY: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

This document is generated for the purpose of distributing health, safety, and environmental data.
Information is correct to the best of our knowledge at the date of the SDS publication. It is not a specification sheet nor should any displayed data be construed as a specification.

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