



SAFETY DATA SHEET

Bitumen 85/100

MSDS No. : Bitumen 85/100 - 2015

SECTION 1: Product and company Identification

1.1 Product Identifier

Product Name: Bitumen 85/100

Other name: Asphalt

Chemical Family: A complex of heavy hydrocarbons

1.2 Product Use

Bitumen for road paving, waterproofing, adhesives, coatings

1.3 Detail of the supplier of the safety data sheet

Manufacture / Supplier / Importer: Tabriz Oil Refining Company
5 Tabriz – Azarshar Road
Tabriz,
East Azerbaijan,
I.R Iran.
Postal Cod: 5197131111
www.tabrizrefinery.co.ir

Contact person: General Information
+98-4121148305
info@tbzrefinery.co.ir

Emergency telephone number: +98- 4121149117-118

SECTION 2: Hazard Identification

Danger:

Bitumen is normally handled at high temperatures generally. The major hazard is heat burns on skin in direct contact with hot bitumen. If bitumen is overheated, flammable decomposition products may be formed, resulting into fire and explosion. Boil over of tanks due to presence of water. In confined spaces, hydrogen sulfide may accumulate and reach hazardous levels. Pyrophoric deposits may develop in bitumen tanks which may self-ignite.

Target Organs: Eyes, Skin, Respiratory system, Kidney, Liver

Routes of exposure: Inhalation, ingestion, skin or eye contact.



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difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin Contact:

Burns from hot bitumen: remove heat by immediately treating/plunging the affected part with cold running water for 10 minutes. After cooling, NO attempt should be made to remove the bitumen adhering to the skin since the cold bitumen forms a sterile protective layer on the burnt area. If for any reason the bitumen must be removed, this can be done using slightly warmed medicinal paraffin. Take off all contaminated clothing immediately. Seek medical assistance or hospitalization in all cases of serious burns.

Eye Contact:

Remove contact lenses. Flood eyes with plenty of water for at least 15 minutes, blinking as often as possible. Remove deposits around the eye, eyelashes and eyebrows by wiping carefully with a soft cloth soaked with medicinal paraffin oil. Do not force eyelids open. If irritation persists, obtain medical attention. The use of flush fluid, other than water, is not recommended.

Ingestion:

DO NOT induce vomiting, get medical advice. Give milk or water to drink. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Do not give anything by mouth to an unconscious person.

First aid facilities

Eye wash fountains and safety showers should be available for emergency use.

Advice to Doctor

When it is absolutely necessary to remove adhering bitumen from the skin, liberal amounts of warm medicinal paraffin can be used. If solvent treatment is required, washing with soap and water and then the application of a proprietary re-fattening or skin cleansing cream should follow.

SECTION 5: Fire fighting measures

Fire hazards

CAUTION! Product is Combustible. It will not burn unless preheated. Isolate from sources of heat, naked flames and sparks. The vapor pressure of this product is expected to be too low at ambient temperatures and pressures for the lower explosion limit to be reached. This product is a hazardous substance when heated beyond 100 degree centigrade (C). Petroleum products are flammable (explosive) in proportions between upper and lower flammability limits. at ambient



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temperatures and pressures. Earth and bond all process equipment including tanks and drums. Boil over of tanks may occur due to presence of water.

Hazardous Combustion Products

If bitumen is over heated, decomposition products may be formed resulting into a fire or explosion hazard. H₂S may be released if the product is heated, particularly in the presence of water. Pyrophoric deposits may develop in bitumen tanks which may self-ignite.

Unusual fire and explosion hazard

If hydrogen sulfide is present, the flammable limits can be from 4.3 to 45.5% by volume and its presence may promote the formation of pyrophoric iron compounds.

Suitable Extinguishing Media

Small Fires: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or Halon.

Large Fires: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Do not use water except as a fog. Do not use a direct stream of water.

Additional Advice

Clear fire area of all non-emergency personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, Self-contained breathing apparatus. Cool surrounding equipment, fire exposed containers, pipelines and structures with water. Container areas exposed to direct flame contact should be cooled with large quantities of water to prevent weakening of container structure. Do not apply water directly.

Special protective equipment for fire-fighters

: Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.

Flash Point: Not available

Lower Explosive Limit (LEL) – Upper Explosive Limit (UEL): Not available



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SECTION 6: Accidental release measures

Protective Measures

CAUTION! Product is combustible. Eliminate all potential sources of ignition. Keep away from heat, naked flames and sparks. Stop leak if safe to do so. Wear chemical splash goggles, full suit, vapor respirator, boots, gloves, self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Suggested protective clothing might not be adequate.

CAUTION! The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

Clean Up Methods

Contain residual material at affected sites to prevent material from entering sewers; ditches and waterways. Dike and contain land spills. For small spills, contain the spills with earth, sand or other absorbent. For large liquid spills, pump up excess liquid and absorb residue with earth, sand or other absorbent. Clean contaminated area with water and detergent.

Protective Precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

SECTION 7: Handling and storage

General Precautions

CAUTION! Combustible. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Store in a well ventilated area. Ground all handling equipment to prevent sparking. This product is a hazardous substance when heated above 100 C.

Handling

Avoid contact with eyes, skin, clothing and foodstuffs. Wash thoroughly after handling. Launder contaminated clothing prior to use; use good personal hygiene.



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controls should meet applicable requirements of the National Electrical Code (NEC) Standards. Ensure that an emergency eye wash station and safety shower is located near the work-station.

Eye and Face Protection:

Use a full-face shield and chemical safety goggles if handling heated material. With product at ambient temperatures, safety glasses equipped with side shields are recommended as minimum protection in industrial settings. An eye wash station immediately available to the work area.

Hand Protection:

When handling product at elevated temperatures, use long-cuffed leather or heatresistant gloves. When product is at ambient temperatures, use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected.

Skin and body Protection:

Use insulated, heat-resistant clothing when handling heated material. Use a full body heat-resistant or internally cooled suit when work conditions dictate.

Respiratory Protection:

Contaminant air concentrations determine the level of respiratory protection required. Use only NIOSH-approved respiratory equipment within the limits of the protection factors for that equipment. Use supplied air respirators when H₂S concentrations are expected to exceed applicable workplace exposure levels. Do not use air purifying respiratory equipment when considering elevated H₂S concentrations. Respiratory equipment must be selected on the basis of the maximum expected air concentration.

Hygiene measures:

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners to clean skin. Prevent skin contact when handling heated material. Use insulated, heat-resistant clothing when handling heated material. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.



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SECTION 9: Physical and Chemical Properties

Physical State: Black viscous liquid at high temperature, solid at ambient temperature.

Color: Black

Penetration (@ 25 C): 85-100 (0.1 mm)

Softening: 45-52 C

Ductility (@25 C): Min. 100 cms

Loss of heating (wt%): Max 0.5

Flash point: Min. 225 C

Solubility in CS₂ (wt%): Min. 99.5

Density (@25 C): 1.001 – 1.05 kg/lit

Odor: Not available

pH: Not available

Vapor Pressure: Not available

Specific Gravity (water=1): Not available

Specific Gravity (air=1): Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: Not available

Decomposition Temperature: Not available

Solubility in water: Not available

Molecular Formula: Not available

Molecular Weight: Not available

Viscosity: Not available

Percentage Volatile: Not available

SECTION 10: Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Material to avoid: Strong acids and oxidizing agents, halogenated compounds, reducing materials

Condition to avoid: Heat, flames and sparks, formation of vapors, accidental contact of hot material with water as this can cause violent eruptions.

Hazardous Decomposition: In case of fire hazardous decomposition products may be produced such as Carbon oxides, Hydrogen sulfide and other sulfur-



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containing gases can evolve from this product particularly at elevated temperatures. No decomposition products in case of appropriate storage / handling / transport.

Hazardous Reactions:

Stable under normal conditions of use; under normal conditions of storage and use, hazardous reactions will not occur. however, incompatible with strong acids and strong oxidizers. Keep away from oxidizing agents, and acidic or alkaline products. Do not allow molten products to contact water or liquids as this can cause violent eruptions. Hydrogen Sulfide from the product can react with iron in asphalt storage tank to form iron sulfide, a pyrophoric (a material which ignites spontaneously in air below 130°F) material.

Hazardous Polymerization:

Will not occur.

SECTION 11: Toxicological Information

Routes of Exposure: Exposure will most likely occur through skin or eye contact. Inhalation is only possible if the product is heated or mists are generated.

Carcinogenicity and Mutagenicity

: According to the International Agency for Research and Cancer (IARC), this product is not classifiable as a human carcinogen. It may contain a variety of Polycyclic Aromatic Hydrocarbons (PAH), some of which are associated with the potential of inducing skin cancer. Increasing amounts of PAH may be released if this product is heated above 200 C.

Chronic effects :

Prolonged or repeated contact with Polycyclic Aromatic Hydrocarbons (PAH) may cause skin cancer where there is

SECTION 12: Ecological Information

This product is estimated to have a slow rate of biodegradation. This product is not expected to bioaccumulate through food chains in the environment. Analysis for ecological effects has not been conducted on this product. Spills into water ways may be harmful to organisms and bottom feeders.

