

Material Safety Data Sheet (MSDS) of OXIDIZED BITUMEN

1. Identification of Substance and Supplier:

Substance / preparation: Oxidized Bitumen.

Uses: oxidised asphalt product for roofing, building, insulation, infrastructure construction, industrial and civil engineering materials and processes.

Manufacturer:

ATDM | TDM | Avizheh Technology and Development of Middle East

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2. Composition / Information on Ingredients:

A blend of components derived from crude petroleum oil. Oxidized (Blown) Bitumen is produced by either a staggered or a continuous blowing process. The product contains no dangerous substances according to EC Directive 67/548/EEC and further modifications and adaptations pointed out in this publication.

3. Hazardous Identification:

- Inhalation: of vapour or mist can cause headache, nausea, irritation of nose and lungs.
- Eye Contact: with material can cause slight irritation.
- Prolonged or repeated skin contact: can cause slight skin irritation.
- Contact with hot material: can cause thermal burns which may result in permanent skin damage. Hot product may cause severe eye burns and/or blindness.
- Safety Hazards: Not classified as flammable. Contact of hot material with water will result in violent expansion and splashing or boil-over may occur.
- Environmental Hazards: Not classified as dangerous for the environment.

4. First Aid Measures:

- General Information: DO NOT DELAY. Keep victim calm and obtain medical treatment immediately.
- Eye contact: If the substance has entered the eyes then irrigate with emergency eye wash solution (if available) or clean water for up to 15 minutes. Seek medical attention. If contact with hot product, cool the burn area by flushing with large amounts of water. Do not attempt to remove anything from the burn area or apply burn creams or ointments. Cover the burn area loosely with a sterile dressing. All burns should receive medical attention and transport to the nearest medical facility for additional treatment.
- Skin contact: Remove contamination with proprietary skin cleaner, followed by washing with soap and water. If irritation persists, seek medical attention. If contact with hot product, cool the burn area by flushing with large amounts of water. Do not attempt to remove anything from the burn area or apply burn creams or ointments. Cover the burn area loosely with a sterile dressing. All burns should receive medical attention and transport to the nearest medical facility for additional treatment.
- Ingestion: Under normal conditions of use this is not expected to be a primary route of exposure. If swallowed seek medical advice immediately. Do not induce vomiting.
- Inhalation: If inhalation occurs, remove the patient into fresh air. Keep warm and at rest. If rapid recovery does not occur obtain medical attention.
- Advice to Physician: Do not attempt to remove the product from the skin as it provides a sterile airtight covering which will eventually fall away with the scab as the burn heals. If removal is attempted mineral oil or a mineral oil based ointment may be applied to help soften the product to facilitate removal.

5. Fire Fighting Measures:

- There are no risks of fire or explosion as the products identified are non-combustible. The product is non-flammable but it can cause dangerous fumes if there is a fire.
- Specific Hazards: In the event of combustion occurring products may include a complex mixture of airborne solid and liquid particles and gases (smoke), unidentified organic and inorganic compounds and carbon monoxide. Boil over of tanks and violent eruptions may occur in the presence of water.
- Suitable extinguishing media: Fog, foam or water spray. Carbon dioxide, dry chemical powder, earth and sand may be used for small fires only. Unsuitable extinguishing media: Do not use water in a jet.
- Protective equipment for fire fighters: Wear proper protective equipment including breathing apparatus when approaching a fire in a confined space.

6. Accidental Release Measures:

- For guidance on suitable protective equipment see 8.0 and for information on disposal see 13.0.
- Protective measures: Avoid contact with eyes, skin and clothing. The hot product should be handled so that there is no risk of burns. Use compressed air or fresh air respiratory equipment in confined spaces. Use appropriate barriers such as sand and earth to prevent from spreading or entering into drains, ditches or rivers.
- Clean up Methods: For a small spillage, allow product to cool and solidify. Shovel into a suitable clearly marked container for retrieval or disposal in compliance with the local regulations. For a large spillage, make a barrier with sand, earth or other restraining material and treat residues as for small spillage. In the event of significant spillages which cannot be contained local authorities should be notified immediately.

7. Storage and Handling:

- Storage: Store in unopened containers and keep dry. Keep the container in a well ventilated place. Prevent all contact with water and moist atmosphere. Storage temperature limits are 1°C to 80°C. Comply with all applicable EPA, OSHA, NFPA and consistent State and Local Authority Guidelines.
- Handling: Avoid prolonged skin contact, avoid contact with eyes. With hot liquid avoid contact to prevent thermal burns. Ensure adequate ventilation. For health and safety reasons and to maintain quality, do not exceed the industry recommended storage and handling temperatures.

8. Exposure Controls / Personal Protection:

- This product has a low volatility and fume formation will be low at ambient temperature. Avoid vapours from heated materials to prevent exposure to potentially toxic/irritating fumes.
- According to the ACGIH asphalt fumes are not classified as a human carcinogen.
- Exposure Controls: The types of controls necessary and the level of protection will vary upon potential exposure conditions. Opt for controls based on a carefully calculated risk assessment of local conditions and situations. Ensure adequate ventilation to control airborne concentrations below the recommended exposure limits. During heating and spraying of the product material, there is higher potential for airborne concentrations to be formed. In emergencies eye washes and showers should be available.
- Personal Protection: All personal protective equipment should comply with recommended national standards.
- Respiratory Protection: No respiratory protection is generally required under normal conditions of use. In places where Hydrogen Sulphide may accumulate, use a self-contained breathing apparatus.
- Hand Protection: When handling heated product material wear heat resistant gloves. Always seek advice from protective glove suppliers.
- Eye Protection: When handling hot product material, wear a safety hat with protective visor.
- Protective Clothing: When handling hot product material, wear heat resistant coveralls, heavy duty boots e.g. leather for heat resistance. The use of a neck apron is recommended to cover all exposed extremities.
- Environmental Exposure Controls: Minimise release and spillage to the environment. Ensure environmental assessments are conducted regularly to meet with local environmental legislation.

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9. Physical and Chemical Properties:

Form:	Solid
Appearance:	Black, Liquid at high temperatures.(depend on grade from 150~300C)
Odour:	Characteristic
Specific Gravity:	1.00-1.06
Solubility In Water:	Insoluble
Solubility In Other Solvents:	Soluble
pH:	N/A
Softening Point:	>150°C
Flash Point:	>330°C
Vapour Pressure:	N/A

N.B. Parameters will vary with different bitumen grades. Please refer to the Individual Data Sheets and Specifications provided for the bitumen grades of interest.

10. Stability and Reactivity:

- Stable under normal conditions of use.
- Avoid heating material above the maximum recommended storage and handling temperatures as this will cause degradation and formation of flammable vapours.
- Do not allow hot molten material to contact water or other liquids as this can cause violent eruptions, splatter hot material or ignite flammable material. Avoid contact with strong oxidising agents as reactions will occur.
- Hazardous Decomposition Products: Hydrogen Sulphide Carbon Monoxide and other Gases.

11. Toxicological Information:

- Toxicological data has not been specifically determined for this product. Information given is based on data on the components and toxicology of similar products.
- Acute oral toxicity: is expected to be low.
- Acute dermal toxicity: is expected to be low.
- Acute inhalation toxicity: Not considered to be an inhalation hazard under normal conditions of use. Avoid vapours from heated product material to prevent exposure to potentially toxic/irritating fumes (see 10.0).
- Skin Irritation: Expected to be slightly irritating. Hot product material will cause thermal burns and may result in permanent epidermal skin damage.
- Eye Irritation: Expected to be slightly irritating. Hot product material may cause severe eye burns or result in blindness.
- Respiratory Irritation: Inhalation of mists or vapours may cause irritation to the respiratory system.
- Carcinogenicity: Under EC criteria Bitumen is not classified as dangerous.

12. Ecological Information:

- Eco-toxicological data has not been specifically determined for this product. Information given is based on data on the components and eco-toxicology of similar products.
- Acute Toxicity: Expected to be practically non toxic. A poorly soluble mixture.
- Mobility: Has low mobility and adsorbs to soil. In water will either sink or float showing slight tendency to disperse and product material will adsorb to the sediment.
- Degradability: Expected to be not inherently biodegradable.
- Bioaccumulation: Has the potential to bio accumulate but is unlikely.
- This product is not expected to have any ozone depletion potential or global warming potential

13. Disposal Considerations:

- Material disposal: Recover spillage and waste and recycle if possible. Comply with all regulations, waste classification and disposal methods. It is the responsibility of the waste generator. Do not dispose in drains, sewers and running water sources.
- Container Disposal: Comply by regulations and those of local authorities. Collection of waste should be done by a recognized contractor or collector.
- Coagulate the dispersion by the stepwise addition of ferric chloride and lime. Remove the clear supernatant and flush to a chemical sewer. Incinerate liquid and contaminated solids in accordance with local, state, regional and federal regulations.

14. Transport Information:

- Not dangerous for conveyance under UN, IMO, ADR/RID, IATA codes of transport at ambient temperature.

15. Regulatory and Information:

- EEC: This product satisfies all the requirements of the European Inventory of Existing Chemical Substances. (EINECS). This product is Not Hazardous according to EEC Directives 67/548/EEC and 88/379/EEC.
- EC Classification: Not Classified as dangerous under EC criteria.
- EINECS: All components listed or polymer exempt
- TSCA: All components listed

16. Legislation and Other Information:

- Health & Safety at Work, etc. Act 1974
- Control of Substances Hazardous to Health Regulations (COSHH) 2002
- Control of Substances Hazardous to Health (Amendment) Regulations 2004
- Environmental Protection Act 1990
- HSE Guidance Note EH40 (Workplace Exposure Limits)
- Any authorised manual on First Aid by St. John's / St. Andrews / Red Cross.
- Manual Handling Operations Regulations 1992 (as amended)

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