



PENETRATION GRADE BITUMEN

Colas Material Safety Data Bulletin

2013/05

1. IDENTIFICATION OF SUBSTANCE

Product name	: Penetration Grade Bitumen.
Product identifier/synonyms	: Bitumen; 50/70 Penetration Grade Bitumen; 70/100 Penetration Grade Bitumen.
Product description	: Blend of hydrocarbons, derived from the crude oil refining process.
Intended use	: Manufacturing of bitumen emulsions, polymer modified binders and cutback bitumen. Used as a tack coat during surface dressing and for the manufacture of hot mix asphalt.

2. HAZARDS IDENTIFICATION

Health hazards	: Not expected to be a health hazard at ambient temperature. Hydrogen sulphide (H ₂ S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in headspace of containers. Hydrogen sulphide is highly toxic and may be fatal if inhaled. May dull the sense of smell, so do not rely on odour as an indication of hazard.
Signs and symptoms	: H ₂ S has a broad range of effects depending on the airborne concentration and length of exposure. Do not depend on smell for warning. H ₂ S rapidly deadens sense of smell. There is no evidence that H ₂ S will accumulate in the body tissue after repeated exposure.
Safety hazards	: Not classified as flammable but will burn. Typically handled above 100°C. Contact with water will result in violent expansion and splashing or boil-over may occur.
Environmental hazards	: Not classified as dangerous to the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Additional information	: Bitumen may contain trace levels of hydrogen.
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4. FIRST AID MEASURES

Skin burns	: Apply cold running water to burn area (10-15 minutes). Do not remove bitumen from skin. The bitumen forms a protective layer that detaches after a few days. Seek medical attention.
Eye contact	: Rinse eyes with cold water for 10 minutes and seek medical attention. Serious burns should receive immediate medical attention.
Inhalation	: Remove victim to fresh air. Apply artificial respiration and seek medical assistance if rapid breathing stops and/or remains difficult.
Ingestion	: Do not induce vomiting. Protect airways if vomiting starts. Seek medical assistance if rapid recovery does not occur.
Advice to physician	: Do not attempt to remove the product from the skin as it provides an airtight sterile covering, which will eventually fall away with the scab as the burn heals.

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5. FIRE-FIGHTING MEASURES

Clear the area of all non-emergency personnel.

Suitable fire-fighting agents : Dry chemical powder.
Carbon dioxide.
Foam.
Sand or earth may be used for small fires only.
Do not use water.

Protective equipment for fire-fighters : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material.

Clean-up methods : Use sand and spill control material to contain and/or absorb spills. Allow product to cool and solidify. Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

Additional advice : Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

General precautions : Avoid contact with hot liquid to prevent burns.

Handling : Do not exceed the recommended storage and handling temperature.

Storage : Keep dry and store container in well ventilated place when stored hot.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

MATERIAL	SOURCE	TYPE	ppm	mg/m ³	NOTATION
Hydrogen sulphide	ACGIH	TWA	10 ppm		
Asphalt, fumes	ACGIH	TWA (Inhalable fraction)		0,5 mg/m ³	As benzene solubles

Exposure controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Where material is heated, sprayed or mist formed, there is a greater potential for airborne concentrations to be generated. Eye wash and showers for emergency use.

Personal protective equipment : Heat-resistant gloves with close-fitting cuffs. Heat-resistant, close-fitting safety boots. Overalls with close-fitting cuffs. Safety visor to protect entire face. Respirators if fume exposure is likely to exceed occupational standards. Avoid breathing bitumen fumes and avoid skin contact with product.

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use. Use self-contained breathing apparatus in places where hydrogen sulphide vapours may accumulate.

Eye protection : For normal operations with hot material, wear safety hat with visor.

Protective clothing : For normal operations with hot material, wear heat-resistant coveralls and heavy-duty boots.

Environmental exposure controls : Minimise release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Black, Semi-solid
Odour	: Asphaltic
Viscosity at 60°C	: 75-250 Pa.s
Viscosity at 135°C	: 0,15-0,45 Pa.s
Specific gravity (g/cm ³)	: 1,0-1,05
Solubility in water	: Insoluble
pH	: N/A
Softening point °C	: 42-56°C
Pour point °C	: N/A
Boiling point °C	: > 316
Flash point °C	: > 230
Vapour pressure @ 20°C (mm Hg)	: < 0,1

10. STABILITY AND REACTIVITY DATA

Stability	: (Thermal, light, etc.) Stable.
Conditions to avoid	: Overheating may result in thermal cracking and produce flammable vapours.
Incompatibility	: Strong oxidizers and water.
Hazardous decomposition products	: Sulphur oxides, hydrogen sulphide and carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Basis of assessment	: Toxicological data has not been determined specially for this product. Information given is based on data on the components and toxicology of similar products.
Acute oral toxicity	: Expected to be low toxicity: LD50 > 5000 mg/kg, Rat.
Acute dermal toxicity	: Expected to be low toxicity: LD50 > 5000 mg/kg, Rabbit.
Acute inhalation toxicity	: Not considered to be an inhalation hazard under normal conditions of use. Avoid vapours from heated materials to prevent exposure to potentially toxic/irritating fumes.
Skin irritation	: Expected to be slightly irritating. Contact with hot product may cause thermal burns which may result in permanent skin damage.
Eye irritation	: Expected to be slightly irritating. Hot product may cause severe eye burns and/or blindness.
Respiratory irritation	: Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated dose toxicity	: Not expected to be a hazard.
Mutagenicity	: Not expected to be a mutagenicity hazard.
Carcinogenicity	: Not classified as dangerous under EC criteria. It contains low concentrations of Polycyclic Aromatic Compounds (PACs). These PACs are not considered to be bioavailable. Despite the known presence of PACs there is no evidence that exposure to the product or their fumes is harmful.
Reproductive and developmental toxicity	: Data not available.

12. ECOLOGICAL INFORMATION

Ecotoxicological data has not been determined specifically for this product. Information given is based on knowledge of the components and the ecotoxicology of similar products.

Acute toxicity	: Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non-toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).
Mobility	: Absorbs to soil and has low mobility. In water will either float or sink, showing little tendency to disperse, the product will absorb to the sediment.
Persistence/degradability	: Expected to be not inherently biodegradable.
Bioaccumulation	: Has the potential to bioaccumulate. In practice, the low water solubilities and high molecular weights of these substances are such that their bioavailability to aquatic organisms is limited and therefore bioaccumulation is unlikely.
Other adverse effects	: Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

Material disposal	: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the materials generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
Container disposal	: Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Local legislation	: Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

IMDG identification number	: UN 3257
Proper shipping name	: ELEVATED TEMPERATURE LIQUIDS, N.O.S.
Technical name	: Bitumen
Class/division	: 9
Packaging group	: III
Marine pollutant	: No
Additional information	: ITATA - Forbidden for transport on passenger and cargo aircraft in molten state. Not dangerous for conveyance under UN, IMO, ADR/RID, IATA codes if transported at ambient temperature.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

EC Classification	: Not classified as dangerous under EC criteria.
EC Symbols	: No Hazard Symbol required.
EC Risk Phrases	: Not classified.
EC Safety Phrases	: Not classified.
EINECS	: All components listed or polymer exempt.
TSCA	: All components listed.

16. OTHER INFORMATION

Other information : No specific notes on this product.

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