BLACK ROCK BITUMEN

Safety Data Sheet (SDS / MSDS)

GHS Compliant | Version 1.0 | May 2026

Oxidized Bitumen 90/10

Grade 90/10 | Oxidized Blown Bitumen | EN Standard

Supersedes All Previous Versions

SECTION 1 — IDENTIFICATION

Property	Details
Product Name	Oxidized Bitumen 90/10
Grade / Designation	Grade 90/10 | Oxidized Blown Bitumen | EN Standard
Product Type	Oxidized (Blown) Bitumen
CAS Number	8052-42-4
EINECS / EC Number	232-490-9
UN Number (Hot/Molten)	UN 3257 (Elevated temperature liquid, n.o.s., >100°C)
Intended Use	Electrical cable insulation compound, high-temperature industrial sealants, specialist pipe coating, battery sealing
Restrictions on Use	Industrial use only. Not for use by the general public.
Company Name	Black Rock Bitumen
Address	Sheikha Fathima Building, Office #20, 6th Floor, Al Raffa, Bur Dubai, Dubai, UAE
Phone / Emergency	+971 54 3482758 | UAE Poison Control: 800-POISON (764766)
Email	sales@blackrockbitumen.com
Website	www.blackrockbitumen.com
Markets Served	UAE / GCC • Australia • United Kingdom

SECTION 2 — HAZARD IDENTIFICATION

2.1 GHS Classification

Hazard Category	Classification	Signal Word
Skin Corrosion/Irritation (hot/molten material)	Category 1 (when molten >100°C)	DANGER
Serious Eye Damage/Irritation	Category 2A (when molten)	WARNING
Carcinogenicity (PAH content)	Category 2 — IARC Group 2B	WARNING
Acute Inhalation Toxicity (fumes at elevated temp)	Category 4	WARNING
Aquatic Environmental Hazard (chronic)	Category 2	WARNING

Flammability	Combustible liquid — Flash Point 260°C (not classified flammable at ambient temp)	—

2.2 GHS Hazard Pictograms

Pictogram Code	Symbol Description	Applicable Condition
GHS05 (Corrosion)	Corrosive / Skin Burns	When molten or at temperatures >100°C
GHS07 (Exclamation Mark)	Irritant / Harmful	Bitumen fume inhalation during heated application
GHS08 (Health Hazard)	Carcinogenicity (PAH — IARC Group 2B)	Long-term repeated occupational exposure
GHS09 (Environment)	Aquatic Environmental Hazard	Accidental release / spill scenario

Hazard Statements:

- H315 — Causes skin irritation (hot material contact)
- H317 — May cause an allergic skin reaction
- H332 — Harmful if inhaled (bitumen fumes at elevated temperature)
- H351 — Suspected of causing cancer (PAH content — IARC Group 2B)
- H411 — Toxic to aquatic life with long lasting effects

Precautionary Statements:

- P201 — Obtain special instructions before use
- P260 — Do not breathe fumes or vapours
- P270 — Do not eat, drink or smoke when using this product
- P271 — Use only outdoors or in a well-ventilated area
- P280 — Wear protective gloves / clothing / eye protection / face protection
- P304+P340 — IF INHALED: Remove to fresh air; keep comfortable for breathing
- P312 — Call a POISON CENTER or doctor if you feel unwell
- P501 — Dispose of contents/container per local regulations

⚠ DANGER — HOT BITUMEN BURN HAZARD
Bitumen is handled at temperatures of 150–220°C depending on grade. Hot bitumen adheres to skin on contact and causes deep thermal burns. DO NOT attempt to peel solidified bitumen from skin. Immediately cool with cold running water for 20+ minutes and seek emergency medical treatment. Molten bitumen splashes can cause serious eye injury requiring immediate medical attention.

SECTION 3 — COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	EC Number	Concentration	GHS Classification
Bitumen (Petroleum)	8052-42-4	232-490-9	>99% (bitumen fraction)	Carc. 2 (PAH traces)

Polycyclic Aromatic Hydrocarbons (PAH)	Various	Various	<0.5% (trace)	Carc. 1B (EU REACH)
Hydrogen Sulfide (H_2S) — evolved at temp	7783-06-4	231-977-3	Trace at ppm level (elevated temp)	Flam. Gas 1; Acute Tox. 2
Sulfur Dioxide (SO_2) — trace combustion product	7446-09-5	231-195-2	Trace (thermal decomposition only)	Acute Tox. 3

Note: Bitumen is a complex mixture of high-molecular-weight aliphatic and aromatic hydrocarbons. Exact composition varies with crude oil origin and processing method. PAH content is at trace levels, typically below the threshold requiring product classification as Category 1B carcinogen.

SECTION 4 — FIRST AID MEASURES

4.1 Inhalation

- Remove exposed person immediately to fresh air
- If breathing is difficult, provide supplemental oxygen
- If not breathing, perform CPR and seek emergency medical help immediately
- Seek immediate medical attention if symptoms persist: coughing, dizziness, headache, or respiratory irritation
- Do not return to contaminated area without adequate ventilation and respiratory protection

4.2 Skin Contact — Hot Bitumen Burns (EMERGENCY PROCEDURE)

🔴 CRITICAL FIRST AID — HOT BITUMEN BURNS

Step 1: DO NOT attempt to remove or peel solidified bitumen from skin — this will deepen the injury.Step 2: Immediately cool the burn with cold running water for a MINIMUM of 20 minutes.Step 3: Do NOT apply ice, butter, oils, creams, or home remedies to the burn.Step 4: Remove any clothing or jewellery near the burn, unless adhered to the skin.Step 5: Cover with clean cling film or a clean non-fluffy material.Step 6: Seek IMMEDIATE medical emergency treatment — ALL hot bitumen burns are serious.Note for Medical Personnel: Solidified bitumen may be removed with petroleum jelly or medical paraffin oil AFTER clinical assessment. Treat as deep thermal burn.

Ambient/Cold Bitumen Skin Contact: Wash with soap and water. If irritation persists seek medical advice. Remove contaminated clothing.

4.3 Eye Contact

- Hot bitumen splash: DO NOT attempt removal. Gently cool with water if safe. Seek immediate ophthalmic emergency treatment.
- Fume/vapour irritation: Rinse gently with water for 15 minutes. Remove contact lenses if easy to do. If irritation persists, seek medical advice.

4.4 Ingestion

- Rinse mouth thoroughly with water. Do NOT induce vomiting.
- Do NOT give anything by mouth to an unconscious person.
- Seek medical advice. Call UAE Poison Control: 800-POISON (764766) / Australia: 13 11 26 / UK: 111.

SECTION 5 — FIREFIGHTING MEASURES

Fire Property	Value / Details
Flash Point	260°C minimum (Cleveland Open Cup — ASTM D92 / EN ISO 2592)
Auto-Ignition Temperature	~485°C
Flammability Classification	Combustible liquid. Does not sustain flame at ambient temperature.
Hazardous Combustion Products	CO, CO_2, SO_2, H_2S, PAH-containing smoke — all toxic

Suitable Extinguishing Media:

- Dry chemical powder (ABC-type)
- Carbon dioxide (CO_2)
- Foam (verify compatibility with bitumen products before use)
- Dry sand or earth for small quantities

Extinguishing Media NOT Suitable:

- Water jets — risk of steam explosion and uncontrolled splatter of hot bitumen
- Halogenated compounds — environmental concern

Special Firefighting Hazards and Instructions:

- Use self-contained breathing apparatus (SCBA) and full fire-protective equipment
- Heated bitumen tanks/containers exposed to fire: cool externally with water spray from a safe distance
- Do not enter the fire area without full SCBA — combustion gases (H_2S, CO) are highly toxic
- Contain all firefighting runoff — prevent entry to drains or water bodies

SECTION 6 — ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

- Evacuate all non-essential personnel from the spill area immediately
- Hot bitumen spill: mandatory full PPE — face shield, insulated heat-resistant gloves, heat-resistant coveralls
- Ambient/cold spill: nitrile gloves, safety goggles, and dust mask at minimum
- Ensure adequate ventilation; do not breathe any fumes
- Eliminate all ignition sources (no smoking, no open flames)

6.2 Environmental Precautions

- Prevent bitumen from entering stormwater drains, watercourses, or groundwater
- Contain spill with sand, earth, or absorbent barriers
- Notify local environmental authority if a major spill reaches a waterway

6.3 Cleanup Procedures

- Allow hot bitumen to cool and solidify before attempting manual cleanup
- Mechanically collect solidified material; place in labelled sealed containers

- Use sand, sawdust, or commercial absorbent material for residue cleanup
- Do not flush to drains — bitumen will cause blockages
- Dispose of all waste per Section 13 — Disposal Considerations

SECTION 7 — HANDLING AND STORAGE

7.1 Safe Handling

- Recommended handling temperature: Typically 180–220°C depending on grade softening point
- Do NOT overheat — temperatures above 230°C significantly increase fume and H_2S generation, and fire risk
- Ensure adequate local exhaust ventilation (LEV) at all decanting and application points
- Always wear appropriate PPE as specified in Section 8
- Do NOT allow water to enter hot bitumen storage tanks — risk of violent steam-boil and splatter
- Bond and earth all metallic equipment when handling heated bitumen (static discharge prevention)
- Inspect all hoses, valves, and fittings for wear or leaks before each use
- Keep hot bitumen strictly away from all sources of ignition

7.2 Storage Conditions

Storage Parameter	Requirement
Storage Temperature	Long-term storage at 60–80°C max to prevent excessive oxidation; application temperature per grade TDS
Container / Tank Type	Insulated steel tanks or drums only. Never PVC, HDPE, or plastic for hot bitumen.
Ventilation	Mechanical ventilation required in tank rooms and enclosed handling areas
Incompatible Materials	Strong oxidizing agents, chlorinated solvents, strong acids, strong alkalis
Fire Protection	Foam suppression system recommended for bulk storage tanks
Secondary Containment	Bunded area capable of holding 110% of the largest single tank volume
Labelling	All containers must be clearly labelled with product name, grade, hazard symbols, and emergency contact
Access Control	Restrict to trained and authorised personnel only — post warning signs
Shelf Life	2 years under recommended conditions

SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Occupational Exposure Limits — Bitumen Fumes

Jurisdiction / Standard	OEL TWA (8hr)	OEL STEL (15min)	Reference

UAE — OSHAD-SF	5 mg/m³ (benzene-soluble fraction)	10 mg/m³	OSHAD-SF CoP 8.0
Australia — Safe Work Australia	5 mg/m³ (inhalable fume)	Not established	WES-TWA 2022
United Kingdom — EH40	5 mg/m³ (fume, inhalable fraction)	10 mg/m³	UK EH40 4th Ed.
ACGIH TLV (Global Reference)	0.5 mg/m³ (benzene-soluble aerosol)	Not established	ACGIH TLV-TWA
Hydrogen Sulfide (H_2S) — All Markets	1 ppm / 1.4 mg/m³	5 ppm / 7 mg/m³	Multi-jurisdiction WEL

8.2 Personal Protective Equipment (PPE)

Respiratory Protection:

- Open-air paving operations (OEL not exceeded): Half-face respirator with P2 + OV combination filter
- Enclosed spaces, tanker unloading, or OEL exceeded: Full-face respirator with P3 + OV filter, or PAPR
- Emergency or confined space entry: Self-Contained Breathing Apparatus (SCBA)
- Continuous H_2S monitoring required in confined spaces and enclosed tank areas

Hand / Skin Protection:

- Insulated heat-resistant gloves rated to EN 407 (or AS/NZS 2161.5) for hot bitumen handling
- Long-sleeved, heat-resistant coveralls with no skin exposed
- Steel-toed, heat-resistant safety boots (anti-slip sole)

Eye / Face Protection:

- Full-face shield (EN 166 / AS/NZS 1337) mandatory for all hot bitumen operations
- Safety goggles (EN 166 Grade 3) minimum for ambient product handling

8.3 Engineering Controls

- Local exhaust ventilation (LEV) at all bitumen loading, unloading, and application points
- Continuous atmospheric monitoring for H_2S in enclosed storage and tank areas
- Emergency eyewash station within 10 seconds travel of all hot bitumen work areas
- Emergency safety shower within 10 seconds travel of all hot bitumen work areas
- Enclosed pumping and transfer systems where practicable

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Property	Value / Specification	Test Method
Appearance (ambient temperature)	Black, solid or semi-solid	Visual
Appearance (molten / heated)	Dark, viscous black liquid	Visual
Odour	Faint petroleum odour (cold); stronger hydrocarbon odour when heated	Sensory

Flash Point	260°C minimum	ASTM D92 / EN ISO 2592 (COC)
Auto-Ignition Temperature	~485°C	ASTM E659
Softening Point	85–95°C	EN 1427 / ASTM D36 (Ring & Ball)
Penetration at 25°C	5–15 dmm	EN 1426 / ASTM D5 (100g, 5s)
Density at 15°C	1.03–1.06 g/cm³	EN ISO 3838
Kinematic Viscosity	N/A — oxidized grade	ASTM D2170 / EN 12595
Solubility in Water	Practically insoluble	—
Solubility in CS_2 / TCE	>99% (bitumen component)	EN 12592 / ASTM D2042
Boiling Point	>300°C (complex mixture — decomposes)	—
Vapour Pressure at 20°C	<0.001 Pa (negligible at ambient temperature)	—
pH (emulsion grade)	N/A — not applicable	pH meter
Bulk Density	~1.01–1.07 kg/L (varies by grade)	—

SECTION 10 — STABILITY AND REACTIVITY

10.1 Reactivity

Bitumen is chemically stable under recommended storage and application conditions. No hazardous polymerization reactions will occur.

10.2 Chemical Stability

- Thermally stable within recommended temperature ranges
- Oxidized bitumen is inherently more thermally stable than penetration grade due to the air-blowing process

10.3 Conditions to Avoid

- Temperatures above 230°C — risk of thermal degradation and significantly increased H_2S fume generation
- Contact with strong oxidizing agents — potential for exothermic reaction
- Entry of water into hot bitumen storage tanks — risk of violent steam explosion / boiling
- Static discharge near heated bitumen vapours — potential ignition risk

10.4 Hazardous Decomposition Products

Product	Conditions Produced	Hazard Level
Hydrogen Sulfide (H_2S)	Heating above 150°C; natural volatilization from hot bitumen	HIGHLY TOXIC — TLV 1 ppm; flammable gas
Carbon Monoxide (CO)	Incomplete combustion of bitumen	TOXIC — asphyxiant at >200 ppm
Carbon Dioxide (CO_2)	Complete combustion	Asphyxiant at high concentrations
Sulfur Dioxide (SO_2)	Combustion of sulfur compounds	TOXIC — irritant to respiratory system

PAH Aerosol	Heating, spray application, and fume generation	Carcinogenic — IARC Group 2B
Benzene (trace)	Thermal cracking at very high temperatures (>400°C)	Carcinogenic — IARC Group 1

SECTION 11 — TOXICOLOGICAL INFORMATION

11.1 Routes of Exposure

- Inhalation: Primary occupational concern during heated application — bitumen fumes contain PAHs and H_2S
- Skin Contact: Major burn hazard when molten; also chronic PAH skin absorption risk
- Eye Contact: Serious injury from hot bitumen splash
- Ingestion: Not a likely route of industrial exposure

11.2 Acute Toxicity

Parameter	Value	Study Basis
Oral LD_{50} (rat)	>5,000 mg/kg	Literature data — bitumen
Dermal LD_{50} (rabbit)	>2,000 mg/kg	Literature data
Inhalation LC_{50} (rat, 4hr)	>5,000 mg/m³ (aerosol)	Estimated from analogous substances
H_2S LC_{50} (rat, 1hr)	444 ppm	NIOSH Registry

CARCINOGENICITY — IARC GROUP 2B NOTICE
The International Agency for Research on Cancer (IARC) classifies occupational exposure to bitumens and their emissions as possibly carcinogenic to humans (Group 2B) based on Polycyclic Aromatic Hydrocarbon (PAH) content. Oxidized bitumens used in roofing are classified Group 2A (probably carcinogenic). Minimize all exposure through engineering controls, PPE, and regular health surveillance for workers with daily bitumen fume exposure.

11.3 Chronic Effects

- Repeated skin exposure to bitumen fumes: potential photosensitization and occupational dermatitis
- Long-term inhalation of bitumen fumes: respiratory system irritation; potential lung disease risk
- PAH absorption (skin or inhalation): potential carcinogenic risk with prolonged high-level exposure
- Recommendation: Regular occupational health monitoring for all workers with daily bitumen exposure

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicity Parameter	Result	Test Duration

Fish LC_{50} (Oncorhynchus mykiss)	>1,000 mg/L	96 hours
Daphnia EC_{50} (Crustacean)	>10 mg/L	48 hours
Algae ErC_{50} (Desmodesmus subspicatus)	>10 mg/L	72 hours
Aquatic Chronic Classification	Category 2 (GHS)	Based on PAH persistence

- Persistence: Bitumen is poorly biodegradable; PAH fractions may persist in sediment and soil for years
- Bioaccumulation: Log Kow >6 for bitumen fractions — potential bioaccumulation in aquatic organisms
- Mobility: Solid bitumen is immobile in soil at ambient temperature; does not significantly leach to groundwater
- Prevent any release to drains, waterways, or soil

SECTION 13 — DISPOSAL CONSIDERATIONS

13.1 Waste Classification

Market	Waste Code / Classification
United Kingdom (post-Brexit REACH)	05 01 01* or 17 03 01* — Hazardous waste if PAH >0.1%
UAE / GCC	OSHAD-SF Waste Management CoP — Category B/C industrial hazardous waste
Australia (National)	Priority Hazardous Waste (PAH content) — refer to state/territory EPA

13.2 Disposal Methods

- Never dispose of bitumen via drains, waterways, soil, or general municipal waste
- Small quantities: Allow to solidify; dispose via licensed hazardous waste contractor
- Large quantities: Consider recycling as Reclaimed Asphalt Pavement (RAP) — bitumen is highly recyclable
- Emulsion waste: Neutralize and separate per local environmental authority guidance before disposal
- Contaminated containers: Return to supplier or dispose via licensed waste management facility

SECTION 14 — TRANSPORT INFORMATION

Parameter	Hot / Molten Bitumen (>100°C)	Solid / Ambient Bitumen	N/A
UN Number	UN 3257	Not regulated	—
Proper Shipping Name	Elevated temperature liquid, n.o.s. (Bitumen)	Not applicable	—
Transport Hazard Class	Class 9 — Miscellaneous Dangerous Goods	—	—

Packing Group	III	—	—
ADR Road (Europe/UK)	Class 9, UN 3257, PG III	Exempt	—
IMDG Sea Transport	Class 9, UN 3257 if >100°C	Exempt	—
IATA Air Transport	Not permitted if >100°C without special approvals	Exempt	—
Marine Pollutant	Yes (PAH content)	No (solid state)	—
Special Precautions	Maintain >100°C; insulated tankers; carry UN 3257 documentation	None required	—

TRANSPORT EMERGENCY CONTACT
Emergency: UAE 999 | Australia 000 | UK 999Product: Oxidized Bitumen 90/10 | UN Number: UN 3257ERG Guide: 128 (heated bitumen) | Keep away from all ignition sources | Do not allow runoff to enter waterwaysBlack Rock Bitumen Emergency Line: +971 54 3482758

SECTION 15 — REGULATORY INFORMATION

15.1 UAE / GCC Compliance

- UAE OSHAD-SF Code of Practice 8.0 — Chemical Safety Management: Compliant
- UAE Federal Law No. 24 of 1999 — Environmental Protection (waste/chemical discharge)
- Dubai Municipality Chemical Safety Regulations — storage and handling compliance required
- GCC Standardization Organization (GSO) — applicable bitumen product standards

15.2 Australia Compliance

- Safe Work Australia — Hazardous Chemicals Code of Practice 2021: GHS-compliant SDS required
- Work Health and Safety (WHS) Act and Regulations — all Australian jurisdictions
- AICIS (Industrial Chemicals Act 2019) — bitumen is a registered listed introduction
- Australian Standard AS 2341 — bitumen test methods and specifications
- State/Territory Environmental Protection Acts — waste disposal compliance required

15.3 United Kingdom Compliance

- GB REACH (UK post-Brexit) — bitumen registered as ongoing substance
- Control of Substances Hazardous to Health (COSHH) Regulations 2002 — risk assessment required
- EH40 Workplace Exposure Limits (4th Edition) — bitumen fume WEL: 5 mg/m³ TWA; 10 mg/m³ STEL
- Health and Safety at Work etc. Act 1974 — employer duty of care obligations
- Environmental Permitting (England and Wales) Regulations — waste disposal requirements

15.4 Global Chemical Inventories

Inventory	Status
EINECS (EU)	Listed — EC 232-490-9

TSCA (United States)	Listed on TSCA Inventory
AICS (Australia)	Listed — industrial chemical
GB Inventory (UK REACH)	Listed — approved substance
EU REACH	Registered — bitumen complex substance
DSL (Canada)	Listed

SECTION 16 — OTHER INFORMATION

Document Information	Details
SDS Revision Date	May 2026
Version	1.0
Supersedes	All previous versions of this SDS
Prepared By	Black Rock Bitumen — Technical Safety Department
Review Cycle	Every 3 years or upon availability of significant new hazard data
GHS Standard Applied	UN GHS Revision 9 (2021)
Applicable Markets	UAE/GCC (OSHAD-SF), Australia (Safe Work Australia), United Kingdom (HSE EH40/COSHH)

Key Reference Standards

- UN GHS Rev. 9 (2021) — Globally Harmonized System of Classification and Labelling
- IARC Monographs Vol. 103 — Bitumens and Bitumen Emissions (2013)
- ASTM D92 / EN ISO 2592 — Flash and Fire Points (Cleveland Open Cup)
- ASTM D5 / EN 1426 — Penetration of Bituminous Materials
- ASTM D36 / EN 1427 — Softening Point (Ring and Ball Method)
- EN 12591 — Specifications for Paving Grade Bitumens
- Safe Work Australia — Hazardous Chemicals Code of Practice (2021)
- UK HSE EH40/2005 (4th Edition) — Workplace Exposure Limits
- UAE OSHAD-SF CoP 8.0 — Chemical Safety Management

DISCLAIMER

This Safety Data Sheet is provided for informational purposes only and represents the best information available to Black Rock Bitumen at the time of preparation. This SDS pertains solely to the product designated herein. It is the sole responsibility of the user to determine the suitability of the product for any particular application, to read and understand all hazard information in this SDS, and to implement all necessary precautions for safe handling, use, storage, and disposal. Black Rock Bitumen makes no representation or warranty, expressed or implied, regarding the completeness, accuracy, or fitness for any particular purpose of the information herein. This document is GHS-compliant and intended for use in UAE/GCC, Australian, and United Kingdom markets. Revision Date: May 2026 | Version: 1.0