

Safety Data Sheet

Product: Penetration Bitumen - All Grades
Product abbreviation: PN-PB | Revision date: 2026-07-25 | Revision: v3

SECTION 1: IDENTIFICATION

Product identifier	Penetration Bitumen
Grades covered	Bitumen 40/50, 60/70, 85/100, and other penetration grades supplied by Petro Naft.
Synonyms	Asphalt, petroleum bitumen, paving-grade bitumen, penetration bitumen.
CAS number	8052-42-4
EC number	232-490-9
Recommended uses	Road paving, asphalt mixtures, civil engineering, waterproofing, industrial bituminous formulations, and related professional applications.
Restrictions on use	Not intended for food, pharmaceutical, cosmetic, or direct consumer use. Application suitability must be confirmed by the user.
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SECTION 2: HAZARDS IDENTIFICATION

GHS classification: Based on the supplied product information, solid penetration-grade bitumen is not classified as hazardous under normal ambient handling conditions. Important process hazards arise when the product is heated.

- Key hazards:
- Molten bitumen can cause severe thermal burns.
 - Hot fumes and mists may irritate the eyes and respiratory tract.
 - Hydrogen sulphide (H2S) may accumulate in tanks, cargo spaces, and confined areas and can be fatal if inhaled.
 - Water contacting molten bitumen may cause violent foaming, splashing, or boil-over.

GHS signal word: Not applicable for the solid product. Hot-product operations require workplace warnings and controls.

- Avoid breathing fumes, mists, or vapours generated during heating.
- Wear heat-resistant gloves, protective clothing, safety footwear, and eye/face protection.
- Provide adequate ventilation and monitor confined spaces for oxygen and H2S.
- Keep water away from molten bitumen and heated equipment.
- Wash thoroughly after handling and remove contaminated clothing.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	EC No.	Concentration	Classification / remarks
Petroleum bitumen	8052-42-4	232-490-9	100%	Complex mixture of high-molecular-weight hydrocarbons, predominantly above C36; may contain trace metals, inorganic salts, sulphur compounds, and naturally occurring constituents.

SECTION 4: FIRST-AID MEASURES

Inhalation	Move the person to fresh air. Keep at rest. If breathing is difficult, oxygen may be administered by trained personnel. If breathing stops, begin artificial respiration and obtain immediate medical attention.
Skin contact - cool product	Remove contaminated clothing. Wash with soap and water. Seek medical advice if irritation persists.

Skin contact - molten product	Immediately cool the affected area with clean running water for at least 15 minutes. Do not attempt to remove adherent bitumen. Do not use solvents. Cover loosely with a sterile dressing and obtain urgent medical treatment.
Eye contact	Rinse cautiously with clean water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing and seek medical attention if irritation persists.
Ingestion	Do not induce vomiting. Rinse mouth. Obtain medical advice, especially after significant ingestion.
Most important symptoms	Thermal burns, eye or respiratory irritation from fumes, headache, nausea, dizziness, coughing, or breathing difficulty.
Advice to physician	Treat symptomatically. Adherent cooled bitumen generally should be left in place unless removal is medically necessary.

SECTION 5: FIRE-FIGHTING MEASURES

- Suitable extinguishing media: Dry chemical powder, foam, carbon dioxide, water fog/spray, sand, or earth for small fires.
- Unsuitable media: Do not direct a solid water jet onto burning or molten bitumen.
- Specific hazards: Heated product may burn. Vapours from overheated product may form flammable mixtures with air. Containers holding molten bitumen may rupture when exposed to fire.
- Hazardous combustion products: Carbon monoxide, carbon dioxide, sulphur oxides, smoke, and unburned hydrocarbons.
- Firefighter protection: Wear self-contained breathing apparatus and full protective equipment. Cool exposed containers with water spray from a safe distance.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- Personal precautions: Isolate the area. Avoid contact with hot material and inhalation of fumes. Use appropriate PPE.
- Environmental precautions: Prevent entry into drains, sewers, soil, and watercourses.
- Containment and cleanup: If safe, stop the source. Allow hot product to cool and solidify. Remove mechanically and place in suitable labelled containers.
- Contaminated materials: Collect contaminated soil or absorbent for recovery or disposal in accordance with local requirements.
- Water: Do not use water to wash molten bitumen because violent splashing may occur.

SECTION 7: HANDLING AND STORAGE

- Handling temperature: Use the lowest practical temperature consistent with safe transfer and application. Avoid overheating and prolonged high-temperature storage.
- Typical hot handling: Bitumen may be handled around 140-170°C depending on grade, plant design, and application. Do not exceed agreed operating limits.
- Water exclusion: Prevent water from entering tanks, vessels, lines, or containers containing hot bitumen.
- Ventilation: Provide local exhaust or general ventilation to control fumes and vapours.
- Confined spaces: Test atmosphere for oxygen deficiency and hydrogen sulphide before entry; follow a formal confined-space permit system.
- Static control: Bond and ground transfer equipment where applicable.
- Storage: Store in clean, dry, compatible tanks or containers away from strong oxidizers, heat sources, and water. Do not place containers directly on steam lines or heaters.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Substance	Exposure type	Limit	Reference basis
Bitumen fumes	ACGIH TLV-TWA	0.5 mg/m ³	No specific OSHA PEL; ACGIH value cited by OSHA.
Bitumen fumes	NIOSH REL ceiling	5 mg/m ³ (15 min)	NIOSH value cited by OSHA; local limits govern.
Hydrogen sulphide (H ₂ S)	OSHA PEL	20 ppm ceiling; 50 ppm peak (10 min)	OSHA 29 CFR 1910.1000; local limits govern.
Hydrogen sulphide (H ₂ S)	NIOSH REL ceiling	10 ppm (10 min)	NIOSH Pocket Guide; local limits govern.

- Engineering controls: Enclose hot operations where practical and provide adequate general or local exhaust ventilation.
- Eye/face protection: Safety goggles; use a face shield where splashing of molten product is possible.
- Hand protection: Heat-resistant, impervious gloves suitable for hot-product handling.
- Body protection: Long-sleeved heat-resistant clothing, coveralls, and safety footwear that prevents molten material entering the footwear.

- Respiratory protection: Normally not required with effective ventilation. Use an approved respirator suitable for organic vapours/particulates if exposure limits may be exceeded. Supplied-air respiratory protection may be required for confined spaces or H₂S risk.
- Hygiene: Wash hands after handling. Remove and clean contaminated clothing before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Typical information
Physical state	Black to dark brown solid or semi-solid at 25°C; liquid when heated.
Odour	Petroleum / hydrocarbon.
Flash point	>230°C (grade and method dependent).
Softening point	Grade-dependent; penetration grades commonly vary by specification.
Density	Approximately 1.00-1.05 g/cm ³ .
Water solubility	Insoluble.
Vapour pressure	Negligible at ambient temperature.
Boiling range	>350°C; decomposition may occur.
Auto-ignition temperature	>400°C (indicative).
pH	Not applicable.
Viscosity	Strongly temperature-dependent; refer to grade-specific TDS/COA.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under recommended handling and storage conditions.
Chemical stability	Stable at ambient conditions. Thermal ageing may occur during prolonged heating.
Conditions to avoid	Overheating, open flame, sparks, water contamination of molten bitumen, and confined-space accumulation of fumes or H ₂ S.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon monoxide, carbon dioxide, sulphur oxides, smoke, and hydrocarbon vapours during combustion or severe overheating.
Hazardous polymerization	Not expected to occur.

SECTION 11: TOXICOLOGICAL INFORMATION

- Acute toxicity: Expected to be low based on the nature of petroleum bitumen.
- Inhalation: Fumes from hot bitumen may irritate the eyes and respiratory tract and may cause headache, nausea, dizziness, or coughing.
- Skin contact: Cool bitumen may cause mild irritation. Molten bitumen causes severe thermal burns.
- Eye contact: Fumes may irritate; molten product can cause severe thermal injury.
- Ingestion: Not a likely occupational route; may cause gastrointestinal irritation.
- Sensitization: Bitumen is not generally known as a skin sensitizer; individual reactions may occur.
- Repeated exposure: Prolonged or repeated contact with fumes or contaminated skin may contribute to dermatitis.
- Carcinogenicity: Occupational exposures involving bitumen fumes during paving and roofing have been evaluated by IARC. Exposure should be minimized by temperature control, ventilation, and hygiene.

SECTION 12: ECOLOGICAL INFORMATION

- Ecotoxicity: Solid bitumen is not expected to be acutely toxic to aquatic organisms under normal conditions.
- Environmental behaviour: Insoluble in water and expected to sink or adhere to soil and sediment; hot material can cause physical fouling.
- Persistence: Expected to be persistent due to low water solubility and complex hydrocarbon composition.
- Bioaccumulation: Data are limited for the substance as a whole.
- Precaution: Prevent release to drains, sewers, surface water, and soil.

SECTION 13: DISPOSAL CONSIDERATIONS

- Recover or recycle uncontaminated material where practicable.
- Dispose of product residues, contaminated absorbents, and packaging through an authorized waste contractor.

- Do not discharge to drains, sewers, or waterways.
- Waste classification depends on contamination, local regulations, and the final use; determine the applicable waste code at the point of disposal.
- Empty containers may retain hot-product or fume hazards and must be handled accordingly.

SECTION 14: TRANSPORT INFORMATION

Solid / ambient-temperature product	Generally not regulated as dangerous goods under normal dry solid-shipping conditions, based on the supplied SDS.
Hot / molten product	Transport classification depends on actual shipping temperature and applicable national or international regulations. Confirm requirements before shipment.
UN number	Not assigned for normal solid transport under the supplied information.
Transport hazard class	Not regulated for normal solid transport under the supplied information.
Packing group	Not applicable for normal solid transport.
Marine pollutant	Not designated under the supplied information.
Special precautions	Protect from water ingress, excessive heat, and container damage. Hot-product transport requires suitable insulated equipment, temperature control, and burn-prevention procedures.

SECTION 15: REGULATORY INFORMATION

The product should be assessed and labelled according to the laws and regulations applicable in the country of manufacture, transit, and destination. Based on the supplied information, penetration-grade bitumen is not classified as hazardous for supply in its normal solid form. Hot handling, bitumen fumes, and hydrogen sulphide require workplace controls. Users are responsible for confirming current local occupational exposure limits, chemical inventories, transport rules, and application-specific requirements.

SECTION 16: OTHER INFORMATION

Document title	Safety Data Sheet - Penetration Bitumen - All Grades
Product abbreviation	PN-PB
Document number	PN-SDS-PB-260725-03
Revision	v3
Preparation / revision date	2026-07-25
Prepared for	PETRO NAFT PETROKIMYA MADEN SANAYI TICARET LIMITED SIRKETI
Validity	Until replaced by a newer revision.

Abbreviations: ACGIH = American Conference of Governmental Industrial Hygienists; GHS = Globally Harmonized System; H2S = Hydrogen sulphide; PPE = Personal Protective Equipment; STEL = Short-Term Exposure Limit; TWA = Time-Weighted Average.

Disclaimer: This SDS is based on the product information supplied to Petro Naft and is intended to support safe handling, storage, transport, and commercial communication. It does not constitute a warranty of product properties or suitability for a specific application. The user must evaluate actual conditions of use, comply with applicable laws, and obtain a batch-specific COA and grade-specific TDS where required.