



GHATREH ENERGY AVAND

QUALITY CONTROL / EXPORT DOCUMENTATION

BITUMEN QUALITY PROFILE

Certificate of Analysis • Laboratory Control • Batch Traceability



CERTIFICATE OF ANALYSIS

COA TEMPLATE • BITUMEN PENETRATION GRADE 60/70

SAMPLE / TEMPLATE

PRODUCT NAME

Bitumen Grade 60/70

REFERENCE STANDARD

ASTM / Contract Specification

DATE OF ISSUE

BATCH / LOT NUMBER

Technical Test Results

Result column to be completed from actual QC laboratory data

Test	Test Method	Unit	Specification*	Result
Specific Gravity @ 25°C	ASTM D70	-	1.01 - 1.06	—
Penetration @ 25°C (100 g, 5 s)	ASTM D5	dmm	60 - 70	—
Softening Point (Ring & Ball)	ASTM D36	°C	49 - 56	—
Ductility @ 25°C	ASTM D113	cm	Min. 100	—
Loss on Heating	ASTM D6	wt %	Max. 0.20	—
Drop in Penetration after Heating	ASTM D6 / D5	%	Max. 20	—
Flash Point (Cleveland Open Cup)	ASTM D92	°C	Min. 232	—
Solubility in Trichloroethylene	ASTM D2042	wt %	Min. 99.0	—
Spot Test	AASHTO T102	-	Negative	—

* Specification values shown are commonly used for penetration grade 60/70 and must be verified against the applicable purchase contract, national standard, and governing product specification before a final COA is issued.

VG GRADE NOTE

For viscosity grades such as VG30, include viscosity parameters such as Absolute Viscosity @ 60°C (ASTM D2171) and Kinematic Viscosity @ 135°C (ASTM D2170), in addition to the applicable quality tests.

This is to certify that the above sample has been tested and meets the specified ASTM standards.

QC Manager Signature / Stamp



QUALITY CONTROL

Structured testing, review and batch-level documentation



COA Workflow

01 Sampling

Representative sample is identified against the shipment or production batch.

02 Laboratory Testing

Applicable ASTM / AASHTO methods are performed for the target bitumen grade.

03 QC Review

Results are checked against the agreed product specification and contract requirements.

04 COA Issue

The final certificate records batch data, methods, results and QC authorization.

CORE TEST METHODS

ASTM D70 • D5 • D36 • D113 • D6 • D92 • D2042 | AASHTO T102 | VG grades: ASTM D2171 • D2170

Actual test values must come from verified laboratory results.



PACKAGING & LOADING

Visual overview for product handling and shipment presentation



JUMBO BAG STORAGE

Packed bitumen / bulk bag presentation



BULK LOADING

Tanker loading and bulk shipment presentation

DOCUMENT CONTROL POINTS

- COA prepared separately for each grade and batch / lot.
- Product name, batch number, date and reference specification must match shipment documents.
- Actual laboratory results should be entered only after testing and QC verification.
- For VG grades, viscosity requirements must be included according to the governing specification.

AVAND ENERGY • QUALITY DOCUMENTATION



SAFETY DATA SHEET

SDS / MSDS TEMPLATE • BITUMEN / ASPHALT • GHS-STYLE 16-SECTION FORMAT

DRAFT - VALIDATE BEFORE ISSUE

01 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- Product identifier: Bitumen / Asphalt (grade to be specified, e.g., 60/70 or VG30).
- Company: Avand Energy. Address / general telephone: [To be completed].
- Emergency telephone: [To be completed with a 24-hour or applicable emergency contact].
- Recommended use: road paving, waterproofing and industrial applications as applicable to the supplied grade.

02 HAZARDS IDENTIFICATION

- GHS classification depends on the exact product and jurisdiction; verify before commercial issue.
- Hot product can cause severe thermal burns. Avoid all skin and eye contact with molten bitumen.
- Hydrogen sulfide (H₂S) may accumulate in tanks, vapor spaces and enclosed areas; H₂S is toxic and flammable.
- Bitumen fumes / vapors may irritate the eyes and respiratory system. Do not rely on odor as an H₂S warning.

03 COMPOSITION / INFORMATION ON INGREDIENTS

- Substance: Bitumen / Asphalt.
- Typical composition: 100% petroleum bitumen unless the supplied product is modified or blended.
- CAS No.: 8052-42-4.
- Any additives or modifiers, if present, must be declared in the final product-specific SDS.

04 FIRST AID MEASURES

- Eyes: Immediately flush with clean water. For hot-product exposure, cool continuously and obtain urgent medical attention.
- Skin - hot bitumen: cool affected area with clean running water for at least 20 minutes. Do not attempt to peel adhered bitumen from the skin.
- Inhalation: move the person to fresh air, keep at rest, and obtain medical assistance if symptoms occur. Suspected H₂S exposure requires urgent response.
- Ingestion: do not induce vomiting. Rinse mouth and seek medical advice if unwell.



SAFETY DATA SHEET

SDS / MSDS TEMPLATE • BITUMEN / ASPHALT • GHS-STYLE 16-SECTION FORMAT

DRAFT - VALIDATE BEFORE ISSUE

05 FIRE FIGHTING MEASURES

- Suitable extinguishing media: foam, dry chemical powder, carbon dioxide, or water fog where appropriate for surrounding equipment.
- Do not direct a water jet or pour water onto hot / molten bitumen; violent foaming and splashing may occur.
- Fire may produce carbon monoxide, carbon dioxide, sulfur oxides, smoke and potentially hydrogen sulfide.
- Firefighters should use full protective equipment and self-contained breathing apparatus where fumes or H₂S may be present.

06 ACCIDENTAL RELEASE MEASURES

- Keep unprotected personnel away and eliminate ignition sources where safe to do so.
- Prevent release to drains, sewers, soil and surface water.
- For hot product, contain with dry sand or earth and allow to cool / solidify when safe; then recover mechanically.
- Use heat-resistant PPE during recovery. Do not use a direct water jet on molten product.

07 HANDLING AND STORAGE

- Avoid overheating. Keep handling / storage temperature as low as practicable while maintaining safe pumpability for the grade.
- Keep away from open flames, sparks and uncontrolled ignition sources. Prevent water ingress into hot-bitumen systems.
- Provide adequate tank ventilation and H₂S controls / monitoring where vapor accumulation is possible.
- Use closed transfer systems where practical and follow site procedures for hot-product loading and unloading.

08 EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering controls: adequate ventilation, local extraction where needed, and atmospheric monitoring for H₂S in risk areas.
- PPE for hot handling: heat-resistant gauntlet gloves, safety goggles plus face shield, long-sleeved protective clothing and safety boots.
- Respiratory protection may be required if fumes or H₂S can exceed applicable occupational exposure limits; select equipment under a competent respiratory-protection program.
- Wash exposed skin after handling and remove contaminated clothing safely.



SAFETY DATA SHEET

SDS / MSDS TEMPLATE • BITUMEN / ASPHALT • GHS-STYLE 16-SECTION FORMAT

DRAFT - VALIDATE BEFORE ISSUE

09 PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: black to dark-brown solid / semi-solid at ambient temperature; highly viscous liquid when heated.
- Odor: characteristic petroleum / asphalt odor. Odor is not a reliable indicator of H₂S.
- Water solubility: essentially insoluble.
- Flash point: typically above 230°C for paving bitumen grades; use the exact grade-specific test value in the final SDS / COA.
- Boiling point / range: not a single defined value for this complex petroleum substance; thermal decomposition may occur at elevated temperature.

10 STABILITY AND REACTIVITY

- Stable under recommended storage and handling conditions.
- Avoid excessive heat, open flame, sparks and other ignition sources.
- Avoid contact with strong oxidizing agents.
- Water contacting hot bitumen can cause rapid steam generation, foaming and dangerous splashing.
- Thermal decomposition / combustion can generate carbon oxides, sulfur oxides and other irritating or toxic fumes.

11 TOXICOLOGICAL INFORMATION

- Hot product causes thermal injury rather than chemical burns.
- Fumes and vapors may cause eye and respiratory irritation, headache, nausea or discomfort depending on exposure.
- Hydrogen sulfide can cause severe acute toxicity, including loss of consciousness at high concentrations. Immediate medical response is required for suspected significant exposure.
- Long-term hazard statements must be based on the exact bitumen type, process and current jurisdictional classification.

12 ECOLOGICAL INFORMATION

- Bitumen is poorly soluble in water and has low mobility when cool / solid.
- Large releases can physically contaminate or smother soil, shorelines and aquatic habitats.
- Prevent uncontrolled discharge to waterways, drains and soil.
- Product-specific ecotoxicity, persistence and bioaccumulation statements should be confirmed in the final SDS where required.



SAFETY DATA SHEET

SDS / MSDS TEMPLATE • BITUMEN / ASPHALT • GHS-STYLE 16-SECTION FORMAT

DRAFT - VALIDATE BEFORE ISSUE

13 DISPOSAL CONSIDERATIONS

- Recover and recycle usable bitumen where technically and legally feasible.
- Dispose of residues, absorbents and contaminated packaging through authorized waste contractors in accordance with local regulations.
- Do not discharge product or contaminated washings to drains or natural waters.
- Waste classification codes vary by country and should be assigned by the responsible waste specialist.

14 TRANSPORT INFORMATION

- For elevated-temperature liquid material transported at or above 100°C and below its flash point, UN 3257 (Elevated Temperature Liquid, N.O.S.) may apply; Class 9, Packing Group III.
- Ambient-temperature / solid or packaged bitumen may be subject to different transport requirements and may not use the same UN entry.
- Confirm classification for the actual shipment temperature, package type and mode (ADR/RID, IMDG, IATA or applicable national rules) before dispatch.
- Transport documents must match the actual product condition and regulatory jurisdiction.

15 REGULATORY INFORMATION

- Prepare the final SDS in the 16-section GHS-aligned sequence required by the destination jurisdiction.
- Apply relevant chemical communication, occupational safety, environmental, waste and dangerous-goods transport requirements.
- Examples may include GHS / OSHA HazCom, REACH / CLP where applicable, and ADR / RID / IMDG / IATA transport rules.
- Local legal review is required before commercial use; regulatory status can vary by country and product formulation.

16 OTHER INFORMATION

- Preparation date: [To be completed]. Revision: 1.0 - Draft Template.
- Prepared for: Avand Energy. Product grade / document code: [To be completed].
- Disclaimer: information must be verified against the exact supplied grade, current scientific data, local law and the actual transport / handling condition before issue.
- This template is not a substitute for approval by the responsible HSE / technical authority.

FINAL ISSUE CONTROL

HSE / Authorized Signatory: _____ Date: _____ Company Stamp: _____