

UNIVERSAL MINERALS EXPORT COMPANY

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TECHNICAL DATA SHEET

Barium Sulphate

Product Code: UME-BAS-02

Revision: 01

Date: June 2026

HS Code: 2833.27

1. PRODUCT DESCRIPTION

Barium Sulphate (BaSO₄) is a white, odourless, chemically inert inorganic compound occurring naturally as the mineral barite. It is characterized by high specific gravity, exceptional chemical resistance, and complete insolubility in water. Universal Minerals Export Company supplies two distinct grades: Natural Barium Sulphate (ground barite) and Precipitated Barium Sulphate (blanc fixe). Natural grade is used for oil & gas drilling mud and general industrial applications; precipitated grade is used for high-performance coatings, automotive primers, and medical applications requiring ultrafine particle size and superior whiteness.

2. CHEMICAL COMPOSITION

Parameter	Formula	Natural Grade	Precipitated Grade	Test Method
Barium Sulphate	BaSO ₄	≥ 95.0 %	≥ 98.5 %	Gravimetric / XRF
Barium Oxide	BaO	≥ 65.0 %	≥ 67.5 %	XRF
Silica	SiO ₂	≤ 3.0 %	≤ 0.1 %	XRF
Iron Oxide	Fe ₂ O ₃	≤ 0.1 %	≤ 0.005 %	XRF
Water Soluble Salts	—	≤ 0.5 %	≤ 0.2 %	Gravimetric
Moisture	H ₂ O	≤ 0.5 %	≤ 0.3 %	Gravimetric @ 105°C
pH (10% suspension)	—	6.5 – 8.5	6.5 – 8.0	pH meter

3. PHYSICAL PROPERTIES

Appearance	White to off-white crystalline powder	Melting Point	1,580°C
Odour	Odourless	Boiling Point	Decomposes > 1,580°C
Crystal System	Orthorhombic	Solubility in Water	0.000245 g/100 mL (practically insoluble)
Specific Gravity	4.20 – 4.50 g/cm ³	Refractive Index	1.636 – 1.648
Bulk Density (loose)	0.90 – 1.10 g/cm ³	Oil Absorption (PBC)	12 – 18 g/100g
Mohs Hardness	3.0 – 3.5	Whiteness (Elrepho)	Natural: 88–92%; Precipitated: 96–98%

4. AVAILABLE GRADES & SPECIFICATIONS

Grade	BaSO ₄ %	D50 (µm)	Specific Gravity	API 13A	Primary Use
Natural — Standard	≥ 95%	10 – 25	≥ 4.20	Compliant	General Industrial, Drilling Mud

Natural — Fine Ground	≥ 95%	5 – 12	≥ 4.20	—	Paints, Rubber, Heavy Concrete
Natural — Drilling Grade	≥ 95%	15 – 44	≥ 4.20	Compliant	Oil & Gas Drilling Mud (API 13A)
Precipitated (Blanc Fixe)	≥ 98.5%	0.5 – 3	4.30 – 4.50	—	Automotive Coatings, Plastics, Medical

5. INDUSTRIAL APPLICATIONS

Oil & Gas Drilling Mud: API 13A compliant barite used as weighting agent in water-based and oil-based drilling fluids. Specific gravity ≥ 4.20 required. Drilling grade with D50 15–44 µm.

Automotive Coatings & Primers: Precipitated BaSO₄ used in automotive underbody coatings, primers, and topcoats to improve stone-chip resistance, levelling, and gloss. D50 < 3 µm preferred.

Industrial Paints & Coatings: Extender filler improving chemical resistance, gloss, and film hardness. Natural fine-ground grade 200–325 mesh used in anti-corrosion and marine coatings.

Plastics & Polymer Compounds: High specific gravity filler for sound deadening compounds, automotive interior panels, and weighted plastics. Precipitated grade for white masterbatch.

Rubber Compounding: Used as an inert filler in rubber goods, conveyor belts, and gaskets. Improves chemical resistance and dimensional stability.

Radiation Shielding: High density and atomic number make BaSO₄ an effective X-ray and gamma radiation shield in medical imaging rooms and industrial applications.

Medical & Pharmaceutical: Ultra-pure precipitated BaSO₄ used as contrast agent in gastrointestinal X-ray imaging (barium meal / barium enema procedures).

Paper & Board Coating: Provides high gloss, smoothness, and opacity in coated paper and paperboard. Fine precipitated grade preferred.

Sound Deadening Mats: High specific gravity makes BaSO₄ an ideal filler in automotive sound deadening sheets and vibration damping compounds.

Brake Pads & Friction Materials: Inert filler in disc brake pads and clutch facings — replaces asbestos as a safe, chemically stable component.

6. PACKAGING & STORAGE

Standard Pack	25 kg & 50 kg double-layered HDPE woven bags with PE inner liner
Bulk Pack	500 kg, 1,000 kg & 1,500 kg PP jumbo bags (FIBC)
Container Load	~500 x 25 kg bags per 20' FCL (~12.5 MT); ~500 x 50 kg bags per 20' FCL (~25 MT)
Private Label	Custom printed bags available for distributors (MOQ: 1 FCL)
Storage	Store in a cool, dry, well-ventilated area. Avoid moisture. Shelf life: 24 months.
Transport	Non-hazardous, non-flammable. No special transport restrictions. Standard bulk cargo.
UN Number	Not classified as dangerous goods — no UN number required

7. SAFETY & REGULATORY INFORMATION

GHS Classification	Not classified as hazardous (natural & precipitated grades)
REACH Status	Registered under REACH — not on SVHC Candidate List

RoHS	Compliant — does not contain restricted substances
API 13A	Natural drilling grade meets API Specification 13A
Dust Inhalation	Use FFP2 dust mask when handling powder — inert dust, nuisance only
Eye Contact	Flush with clean water for 15 minutes. Seek medical attention if irritation persists.
Skin Contact	Wash with soap and water. Non-irritating to skin.
Disposal	Inert mineral waste. Dispose per local environmental regulations. Not hazardous waste.
Solubility Note	BaSO ₄ is practically insoluble — distinct from soluble barium compounds which are toxic.

8. EXPORT & ORDERING INFORMATION

HS Code	2833.27 (Barium Sulphate — Natural / Precipitated)
Country of Origin	India
Port of Loading	Mundra Port / Kandla Port, Gujarat, India
Lead Time	7–15 working days from order confirmation to container loading
MOQ	1 FCL (~12.5 MT in 25 kg bags or ~25 MT in 50 kg bags)
Payment Terms	30% advance, 70% against BL copy (T/T); LC at sight acceptable
Price Basis	FOB Mundra / CIF destination port (as negotiated)
Documents Provided	Commercial Invoice, Packing List, Bill of Lading, COA, Certificate of Origin, API Certificate (drilling grade)

Universal Minerals Export Company

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This TDS is provided for informational purposes only. Typical values may vary by batch and grade. Universal Minerals Export Company reserves the right to modify specifications without prior notice. Customers should independently verify suitability for specific applications. BaSO₄ is an insoluble barium compound and should not be confused with soluble barium salts.