SAFETY DATA SHEET

BARIUM SULPHATE (BARYTES POWDER)

CAS No.: 7727-43-7

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

BARIUM SULPHATE (BARYTES POWDER)
Barite; Blanc fixe (precipitated grade); Barium sulfate
CAS: 7727-43-7

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Oil & gas drilling mud weighting agent, filler in paints/coatings/plastics/rubber, radiation shielding (concrete aggregate), friction materials, ceramics. For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

Emergency phone number

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Based on available data, the classification criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) are not met. This product is not classified as hazardous.

GHS label elements, including precautionary statements

GHS: Not classified – no signal word required

Hazard statements

None required.

Precautionary statements

P260: Avoid breathing dust.
P280: Wear protective gloves/protective clothing/eye protection.
P264: Wash hands thoroughly after handling.
P501: Dispose of contents/container in accordance with local/national regulations.

Other hazards which do not result in classification

Not classified as hazardous. Note: barium sulfate is distinguished from soluble barium salts (e.g. barium chloride, barium carbonate), which ARE acutely toxic – its extreme insolubility in water and body fluids is why it is not classified and is even used as a radiographic contrast medium in medicine.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: BARIUM SULPHATE (BARYTES POWDER)

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 7727-43-7	BARIUM SULPHATE (BARYTES POWDER) — Not classified as hazardous under GHS	≥ 90% BaSO4 (industrial/drilling grade; grade-specific assay available on request)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance immediately, showing the SDS of this product.

By inhalation

Remove the person affected from the area of exposure to fresh air and keep at rest. If dust has been inhaled and irritation or breathing difficulty persists, seek medical attention.

By skin contact

Remove contaminated clothing and footwear. Wash affected skin thoroughly with plenty of water and soap. If irritation develops or persists, seek medical attention.

By eye contact

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.

By ingestion/aspiration

Rinse mouth with water. Do NOT induce vomiting. If conscious, give plenty of water to drink. Seek medical attention immediately, especially if large quantities were ingested.

Most important symptoms/effects, acute and delayed	Acute and delayed effects are indicated in sections 2 and 11.
Indication of immediate medical attention and special treatment needed, if necessary	Not relevant – treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Not combustible – use extinguishing media suited to the surrounding fire (water spray, foam, dry chemical powder, CO2).
Unsuitable: None known.

Specific hazards arising from the chemical

Non-combustible, non-explosive. Does not support combustion.

Special protective actions for fire-fighters

No special measures required beyond those for the surrounding fire.

Additional provisions

If safe to do so, remove exposed containers from the fire area. Use water spray to cool fire-exposed containers/structures. Avoid generating and inhaling dust.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid raising and inhaling dust. Use personal protective equipment as described in Section 8. Evacuate the area and keep unprotected persons away.

For emergency responders

Wear appropriate protective equipment as described in Section 8. Ensure adequate ventilation.

Environmental precautions

Practically insoluble and of very low toxicity; nonetheless avoid large-scale release to watercourses as physical/turbidity impact on aquatic habitats.

Methods and materials for containment and cleaning up

Sweep up or vacuum spilled material (avoid generating dust) and place in a suitable closed, labelled container for recovery or disposal. Wash the spill area with water after solid material has been removed.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Avoid generating and breathing dust during bulk handling. Keep away from incompatible materials (see section 10).

B. Technical recommendations for the prevention of fires and explosions

Product is non-combustible; no special fire-prevention measures required.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke during handling. Wash hands and exposed skin thoroughly after handling and before breaks/meals.

D. Technical recommendations to prevent environmental risks

Avoid release to the environment. Follow the protective measures given in Section 8. For bulk storage/handling, consult Suraj Chemicals.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Minimum Temp.	Ambient (no minimum requirement)
Maximum Temp.	40°C
Maximum time	Indefinite under normal dry storage (inert mineral)

B. General conditions for storage

Store in a dry, covered area. Product is chemically inert and stable indefinitely under normal storage conditions.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):

Identification	Occupational Exposure Limit Type	Value
Particulates Not Otherwise Regulated (inert/nuisance dust)	Time Weighted average concentration (8 hrs)	10 mg/m³ (inhalable) / 4 mg/m³ (respirable) – general guideline

Appropriate engineering controls

Use local exhaust ventilation or general dilution ventilation to keep airborne concentrations below occupational exposure limits. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection

Dust mask (type P1) recommended in poorly ventilated or dusty bulk-handling conditions.

C. Specific protection for the hands

Standard work gloves.

D. Eye and face protection

Safety glasses/goggles recommended when handling dusty material.

E. Bodily protection

Standard work clothing.

F. Additional emergency measures

Emergency eyewash station and safety shower should be available in the immediate work area (ANSI Z358-1 / ISO 3864 or equivalent).

Environmental exposure controls

Avoid environmental spillage of both the product and its container. See subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid (fine powder)
Appearance	Fine, heavy, free-flowing powder
Color	White to off-white / pale grey (natural barytes)
Odor	Odorless
Odour threshold	Not established
Melting point/freezing point	1580°C
Boiling point at atmospheric pressure	Not relevant (solid decomposes/sublimes above melting point)
Density / Relative density at 20°C	4.25 – 4.50 g/cm³ (specific gravity, drilling grade)
Bulk density	2200 – 2400 kg/m³ (typical)
Solubility in water at 20°C	0.0025 g/L (practically insoluble)
pH	Not relevant (insoluble)
Vapour pressure at 20°C	Not relevant *
Partition coefficient n-octanol/water	Not relevant (insoluble inorganic mineral)
Decomposition temperature	Not relevant (stable to >1000°C)
Flammability	
Flash Point	Non-applicable (non-combustible solid)
Flammability (solid, gas)	Not classified as flammable
Autoignition temperature	Not relevant *
Lower / Upper flammability limit	Not relevant *
Particle Characteristics	
Median particle size	Available on request (grade/mesh-size dependent)

** Not relevant due to the nature of the product, not providing information on the properties of its hazards.*

Other information

Explosive properties	Not explosive
Oxidising properties	Not oxidising
Corrosive to metals	Not relevant *
Heat of combustion	Not relevant *
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

10. STABILITY AND REACTIVITY

Reactivity Chemically inert and unreactive under normal conditions. Reduced to barium sulfide by strong reducing agents at high temperature.

Chemical stability Chemically stable under the indicated conditions of storage, handling and use.

Possibility of hazardous reactions Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid excessive heat	Not applicable	Avoid contact with moisture (may cake/hydrolyse)

Incompatible materials

Incompatible with	Reason/Effect
Strong reducing agents (e.g. at high temperature)	May form barium sulfide
None under normal conditions	Chemically inert mineral

Hazardous decomposition products No hazardous decomposition products under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

Practically non-toxic due to extreme insolubility; barium sulfate is used medically as an oral/rectal radiographic contrast agent under controlled conditions.

B. Inhalation (acute effect)

Dust may cause mechanical/nuisance irritation of the respiratory tract; prolonged excessive dust inhalation may contribute to baritosis (a benign pneumoconiosis) – use standard dust controls.

C. Contact with skin and eyes (acute effect)

May cause mild mechanical irritation to eyes; not expected to irritate skin.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC: Not listed.

E. Sensitizing effects

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure

Classification criteria are not met based on available data, except as noted in Section 2.

G. Specific target organ toxicity (STOT) – repeated exposure

Classification criteria are not met based on available data.

H. Aspiration hazard

Classification criteria are not met based on available data (not a liquid hydrocarbon).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
BARIUM SULPHATE (BARYTES POWDER) CAS: 7727-43-7	LD50 oral: >2000 mg/kg (practically non-toxic due to insolubility)	Rat
	LD50 dermal: >2000 mg/kg	Rabbit
	LC50 inhalation: Not established	–

12. ECOLOGICAL INFORMATION

Very low toxicity to aquatic organisms owing to extreme insolubility; not classified as hazardous to the environment.

Toxicity

Identification	Acute Toxicity	Species	Genus
Barium sulphate CAS: 7727-43-7	LC50: >100 mg/L (96h, limit test)	Fish (various species)	Fish

Persistence and degradability

Inorganic mineral – not subject to biodegradation; environmentally inert due to insolubility.

Bioaccumulative potential

Not expected to bioaccumulate (practically insoluble).

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not relevant	Not relevant	Soluble in water – may leach in soil	Soluble in water – may leach in soil

Results of PBT and vPvB assessment

Non-applicable – inorganic, insoluble mineral; does not meet PBT/vPvB screening criteria.

Other adverse effects

Not described

13. DISPOSAL CONSIDERATIONS

Disposal methods

Inert mineral solid; may generally be disposed of as non-hazardous industrial waste in accordance with local regulations, or via a licensed waste contractor.

Do not discharge to drains, soil or surface water. Dispose of via a licensed hazardous/industrial waste contractor in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (India) and other applicable national/local regulations. Empty containers may retain product residue – handle empty containers with the same precautions as full ones.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023)

14.1 UN number	Not assigned
14.2 UN proper shipping name	Non-Dangerous Goods for transport under ADR/RID, IMDG and IATA/ICAO
14.3 Transport hazard class(es)	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22)

14.1 UN number	Not assigned
14.2 UN proper shipping name	Non-Dangerous Goods for transport under ADR/RID, IMDG and IATA/ICAO
14.3 Transport hazard class(es)	Not applicable
14.4 Packing group	Not applicable
14.5 Marine pollutant	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024)

14.1 UN number	Not assigned
14.2 UN proper shipping name	Non-Dangerous Goods for transport under ADR/RID, IMDG and IATA/ICAO
14.3 Transport hazard class(es)	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991
Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

Not applicable – no hazard statements apply to this product.

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

The United Nations Economic Commission for Europe (UNECE); European Chemicals Agency (ECHA) classification and labelling inventory; publicly available chemical safety literature for this substance.

Abbreviations and acronyms

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

(This document is computer generated and therefore does not require any signature.)