Safety Data Sheet

PINHONBIO® Selenium Disulphide

General powder grade | SDS / MSDS | Version 1.0 | 22 Oct 2026

1 Identification

Product identifier	PINHONBIO® Selenium Disulphide | Powder
CAS / INCI	7488-56-4 / SELENIUM DISULPHIDE
Recommended use	Raw material for professional formulation of anti-dandruff rinse-off products, subject to applicable market requirements. Not for direct consumer use or ingestion.
Supplier	Shaanxi Pinhon Biotechnology Co., Ltd.
Address	Room 704, Unit 2, Building 1, I-Duhui, No. 11 Tangyan South Road, Yanta District, Xi'an, Shaanxi, China
Contact	Albert Zhao | +86 173 0298 1616 | info@pinhoningredients.com | pinhoningredients.com
Emergency contact	Albert Zhao | +86 173 0298 1616 | 09:00–18:00 China Standard Time (UTC+8); business-hours contact. For urgent medical help, contact local emergency services or a poison centre.

2 Hazard identification

Classification: Acute toxicity, oral Category 3; acute toxicity, inhalation Category 3; specific target organ toxicity, repeated exposure Category 2; aquatic acute Category 1; aquatic chronic Category 1. GHS/CLP substance classification based on references [1–2].



GHS06 Skull and crossbones | GHS08 Health hazard | GHS09 Environment

Signal word: DANGER

H301 + H331: Toxic if swallowed or if inhaled.
H373: May cause damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

Prevention: P260 Do not breathe dust. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing and eye protection.

Response: P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P330 Rinse mouth. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P311 Call a POISON CENTER/doctor. P314 Get medical advice if unwell. P391 Collect spillage.

Storage / disposal: P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P501 Dispose of contents/container through an authorized hazardous-waste facility in accordance with local requirements.

Other hazards: Contact with strong acids can release toxic hydrogen sulfide gas. Avoid dust dispersion and contamination of work surfaces.

3 Composition and information on ingredients

Substance identity	CAS number	Composition / analytical basis
Selenium disulphide	7488-56-4	Technical substance; elemental selenium content 52.00–55.50%.

EC number: 231-303-8. Nominal formula: SeS_2. Formula weight: approximately 143.09 g/mol. Supplied as an inorganic powder, not a formulated solution. Selenium assay is not the percentage of selenium disulphide in a carrier blend. No separate carrier is identified in the supplied specification.

4 First aid measures

General: Protect rescuers from dust and secondary contamination. Seek urgent medical advice after ingestion or inhalation. Give medical personnel the product identity and this SDS.

Inhalation: Move the person to clean air without entering an unsafe atmosphere. Call a poison centre or doctor immediately. If breathing has stopped, trained personnel should provide assisted ventilation using a suitable barrier device. Do not use unprotected mouth-to-mouth resuscitation.

Ingestion: Rinse the mouth. Call a poison centre or doctor immediately. Do not induce vomiting. Do not give food, drink or medication to an unconscious person; follow medical instructions.

Skin: Remove contaminated clothing and rinse the affected area thoroughly with water, then wash with soap. Obtain medical advice.
Eyes: Rinse gently with clean water for at least 15 minutes, removing contact lenses if easy to do. Seek medical attention.

Symptoms may include nausea, vomiting, headache, cough and breathing difficulty. Repeated selenium exposure may affect organs. Treatment is supportive and symptom-directed; no product-specific antidote is specified here.

5 Firefighting measures

Choose water spray, foam, dry chemical or carbon dioxide for the surrounding fire. Avoid a forceful jet that disperses contaminated material. Thermal decomposition can release sulfur oxides and selenium-containing fumes; wear positive-pressure self-contained breathing apparatus and full protective clothing. Contain contaminated firefighting water.

6 Accidental release measures

Isolate the spill and keep unprotected people away. Use trained personnel with appropriate respiratory and skin protection. Prevent powder from becoming airborne; do not use compressed air or uncontrolled dry sweeping. Collect with suitable contained dust-control equipment into closed, labelled waste containers.

Protect drains and prevent discharge to soil or waterways. Do not wash the spill into a sewer. Collect cleaning residues as hazardous waste; notify the relevant authority if a significant environmental release occurs.

7 Handling and storage

Use enclosed transfer or effective local exhaust when weighing, charging or dispersing powder. Avoid inhalation and direct contact. Keep food and drinks outside the work area. Clean work surfaces and clothing without redistributing dust. Provide suitable handling training.

Keep tightly closed in a secure, dry, ventilated storage area at room temperature, protected from strong light and heat. Separate from food, feed, acids, strong oxidizers, ammonia, reducing agents and finely divided metals. Shelf life: 24 months in original unopened packaging under the recommended conditions.

8 Exposure controls and personal protection

US reference limits for selenium compounds, expressed as Se: OSHA PEL 0.2 mg/m³ (8-hour TWA); NIOSH REL 0.2 mg/m³ (TWA, up to 10 hours/day). NIOSH IDLH: 1 mg/m³ as Se. Apply the occupational limits and respiratory-protection rules of the actual workplace [3].

Engineering controls	Use enclosed processing and local dust extraction. Provide eyewash and emergency washing facilities. Assess exposure by air monitoring where needed.
Eye and body protection	Wear chemical safety goggles, suitable protective gloves and protective work clothing. Select glove resistance for any solvents used in the process.
Respiratory protection	Use a fit-tested P3/P100 or other approved high-efficiency particulate respirator selected for the measured exposure and assigned protection factor. For unknown, oxygen-deficient or immediately dangerous atmospheres, use positive-pressure SCBA or an approved supplied-air system with escape provision.
Environmental controls	Capture dust and collect selenium-containing wash water. Prevent discharge into drains and surface water.

9 Physical and chemical properties

Physical state / appearance	Bright orange to reddish-brown powder
Odour / threshold	Characteristic / threshold not determined
Melting or softening point	Approximately 100 °C (literature reference); not a release limit
Boiling / decomposition temperature	Not established for this grade; decomposition may occur on heating
Flammability / flash point	Not classified as a flammable solid / flash point not applicable
Explosion limits / autoignition	Not determined
pH	Not specified; suspension test conditions not established
Water solubility	Practically insoluble
Viscosity	Not applicable to the supplied powder
Partition coefficient / vapour pressure	Not determined
Relative density / vapour density	Not determined for this grade
Particle characteristics	Powder; particle-size distribution not specified

Physical data are general reference information unless identified as product specifications; they are not batch test results.

10 Stability and reactivity

Stable during recommended dry storage. Avoid heat, moisture ingress and incompatible chemicals. Acids may cause hazardous gas evolution, including hydrogen sulfide. Oxidizers, ammonia, reducing agents and finely divided metals may react. Heating can generate sulfur oxides and selenium-containing decomposition products. Hazardous polymerization is not expected.

11 Toxicological information

Exposure routes: Inhalation of powder, accidental ingestion, skin contact and eye contact. Toxic by ingestion and inhalation. Oral LD50 (rat): 138 mg/kg, reported for the substance in reference [1]; this is not a PINHONBIO batch test.

Repeated exposure: May cause organ damage; liver effects are identified in substance safety data. Overexposure may cause nausea, vomiting, headache, coughing or breathing difficulty. Dust and direct contact can irritate eyes, skin and mucous membranes.

Skin corrosion/irritation, serious eye damage, sensitization, germ-cell mutagenicity, reproductive toxicity, single-exposure target-organ toxicity and aspiration hazard: No product-specific test results have been supplied. No additional numerical toxicity values are assigned to this grade.

Carcinogenicity: The US National Toxicology Program lists selenium sulfide under CAS 7446-34-6 as reasonably anticipated to be a human carcinogen, based on animal studies [7]. This related selenium-sulfide record does not establish a product-specific test result for CAS 7488-56-4. Avoid prolonged exposure. Product-specific endocrine-disruption data are not available.

12 Ecological information

Very toxic to aquatic life with long lasting effects. Aquatic Acute 1 and Aquatic Chronic 1; reference M-factors: 10 for acute and chronic hazards [1]. Avoid environmental release even though the powder is poorly water-soluble.

No product-specific aquatic LC50/EC50, bioaccumulation or soil-mobility data are available. Biodegradation concepts for organic substances do not directly describe the fate of this inorganic material. No product-specific PBT/vPvB or endocrine-disruption assessment has been supplied.

13 Disposal considerations

Manage residues, spill-cleaning materials, wash water and contaminated packaging as selenium-containing hazardous waste. Keep them in closed, compatible, labelled containers for collection by an authorized contractor. Do not mix with acids or incompatible wastes, discharge to drains or dispose of with ordinary refuse.

Apply the waste classification rules of the jurisdiction. Empty packaging may retain toxic residue and requires the same precautions until properly decontaminated.

14 Transport information

UN number	UN 2657
UN proper shipping name	SELENIUM DISULPHIDE (US spelling: SELENIUM DISULFIDE)
Transport hazard class	6.1 — Toxic substances
Packing group	II
Mode applicability	Named selenium disulphide entry for ADR/RID, IMDG and IATA; use the current applicable transport rules.
Environmental hazards	Environmentally hazardous; marine pollutant for maritime transport.
Special precautions	Use approved packaging, labels and documentation suitable for the substance and mode. Keep packages closed, dry and protected from damage. Do not ship as ordinary non-dangerous cargo.
Maritime transport in bulk	Not addressed; supplied as packaged powder.

15 Regulatory information

Prepared in a 16-section format using GHS/CLP substance hazard information and the named dangerous-goods entry. Chemical registration, importer obligations and finished-product permissions depend on the destination and intended use; no universal regulatory approval is asserted.

Anti-dandruff use may fall under cosmetic or medicinal-product rules. Confirm the permitted concentration, claims and labelling before commercial use. The elemental-Se specification alone does not establish full USP or other pharmacopoeial compliance. A product-specific chemical safety assessment has not been provided.

16 Other information

Version 1.0 | Issue date: 22 Oct 2026. Initial general English edition. Quality specifications are based on the supplied PINHONBIO COA and the confirmed elemental selenium assay basis. No batch results are included.

H400: Very toxic to aquatic life. Other hazard statements appear in Section 2. TWA: time-weighted average; PEL: permissible exposure limit; REL: recommended exposure limit; IDLH: immediately dangerous to life or health; SCBA: self-contained breathing apparatus.

References consulted 22 Oct 2026:

[1] Merck/Millipore, Selenium disulfide 843845; EU SDS v8.5, revised 19 Feb 2023; identity, GHS categories and substance toxicology. https://www.merckmillipore.com/INTL/en/product/Selenium-disulfide,MDA_CHEM-843845

[2] Fisher Scientific, Selenium sulfide AC31814; SDS revision 5, 19 Dec 2025; physical properties and handling. https://www.fishersci.com/store/msds?countryCode=US&language=en&partNumber=AC318141000&productDescription=SELENIUM+SULFIDE&vendorId=VN00032119

[3] CDC/NIOSH Pocket Guide, selenium and compounds as Se. https://www.cdc.gov/niosh/npg/npgd0550.html

[4] NOAA CAMEO, Selenium Disulfide; substance hazards and UN 2657. https://cameochemicals.noaa.gov/chemical/4425

[5] IMO IMDG dangerous-goods entry 2657 SELENIUM DISULPHIDE, Packing Group II. https://imo-epublications.org/content/books/9789280102376.UNNo2657II

[6] USP, Selenium Sulfide monograph, elemental-Se assay definition. https://doi.org/10.31003/USPNF_M74820_01_01

[7] NTP, 15th Report on Carcinogens, Selenium Sulfide profile. https://ntp.niehs.nih.gov/sites/default/files/ntp/roc/content/profiles/seleniumsulfide.pdf

This sheet describes the identified material for safe handling and does not replace process-specific risk assessment, transport documentation or finished-product evaluation.