



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
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Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

Sodium Molybdate Dihydrate ($\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$)

SECTION 1: Identification

1.1 Product Identifiers - Product Name: Sodium Molybdate Dihydrate - Product Number: NaMo-CAS7631950-202802 - Brand: SIGALD - CAS-No.: 7631-95-0 - Synonyms: Disodium molybdate dihydrate; Molybdic acid disodium salt dihydrate - Chemical Family: Molybdate Salt

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
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- Telephone : +86-021-50350029
- Fax : +86-021-50350029

1.3 Emergency telephone

Emergency Phone # : +86-021-50350029
(CHEMTREC)

1.4 Uses & Restrictions - Identified Uses: Water treatment agent (corrosion and scale inhibitor); agricultural micronutrient fertilizer (molybdenum supplement); catalyst in chemical reactions; metal surface treatment; pigment and dye manufacturing; analytical reagent. - Uses Advised Against: Direct food contact; medical application; use in strong reducing environments beyond product limits; mixing with strong acids without proper protection.

SECTION 2: Hazards Identification

2.1 GHS Classification: Skin irritation (Category 2); Eye irritation (Category 2A); Aquatic hazard (Category 1); Specific target organ toxicity (single exposure, respiratory tract irritation) (Category 3)

2.2 GHS Label Elements - Hazard Pictogram: (Irritant) + (Aquatic hazard) - Signal Word: DANGER - Hazard Statements: H315 (Causes skin irritation); H319 (Causes serious eye irritation); H335 (May cause respiratory irritation); H410 (Very toxic to aquatic life with long-lasting effects) - Precautionary Statements: P261, P264, P270, P273, P280, P302+P352, P304+P340+P310, P305+P351+P338+P310, P310, P337+P313, P391, P501

2.3 Physical/Chemical Hazards: Non-combustible solid; incompatible with strong reducing agents (e.g., sodium borohydride, zinc dust) and strong acids (e.g., hydrochloric acid, sulfuric acid); decomposes at temperatures $>687^\circ\text{C}$ to release toxic fumes (molybdenum oxides, sodium oxides).

2.4 Health Hazards: Skin irritation (redness, itching, dryness); severe eye irritation (redness, tearing, corneal damage); inhalation of dust may cause respiratory tract irritation (coughing, sore throat); ingestion may cause gastrointestinal upset (nausea, vomiting, abdominal pain); long-term exposure may cause molybdenosis (joint pain, gout-like symptoms).

2.5 Environmental Hazards: Very toxic to aquatic organisms (fish, daphnia, algae); persistent in water bodies; bioaccumulation in aquatic organisms (BCF >100); long-lasting toxic effects on aquatic ecosystems.

SECTION 3: Composition/Information on Ingredients

Substance/Mixture: Substance (main component $\geq 99.0\%$)

Component	Content (w/w)	CAS-No.	Hazard Classification
Sodium Molybdate Dihydrate	$\geq 99.0\%$	7631-95-0	Skin Irrit. 2; Eye Irrit. 2A; Resp. Irrit. 3; Aquatic Toxicity 1
Water (Crystal Water)	13.0-15.0%	7732-18-5	Non-hazardous
Impurities (Cl^- , SO_4^{2-} , etc.)	$\leq 0.1\%$	-	Non-hazardous

SECTION 4: First Aid Measures

- Inhaled: Remove to fresh air immediately; keep the affected person at rest in a comfortable position; if breathing is difficult, provide oxygen by a qualified person; seek medical attention immediately if irritation persists or severe symptoms occur. - Skin Contact: Remove contaminated clothing and shoes immediately; rinse skin thoroughly with plenty of running water for at least 15 minutes; apply emollient if irritation occurs; seek medical help if redness, blistering, or pain persists. - Eye Contact: Hold eyelids open; rinse eyes continuously with clean water or normal saline for at least 20 minutes; do not rub eyes; seek emergency medical help immediately (corneal damage risk). - Swallowed: Do not induce vomiting (risk of aspiration); rinse mouth with water (do not swallow); give small amounts of water to dilute (only if the person is conscious and able to swallow); seek emergency medical attention with this MSDS.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Water spray, foam, CO_2 , dry powder, sand. - Unsuitable Media: High-pressure water jet (may disperse solid and spread contamination). - Special Hazards: Non-combustible; decomposes at high temperature ($>687^\circ\text{C}$) to release toxic fumes (molybdenum oxides, sodium oxides); dust may cause irritation to firefighters' respiratory tract and eyes. - Firefighter Advice: Wear full firefighting protective equipment (including self-contained breathing apparatus, fire-resistant suit, and face shield); keep a safe distance; cool containers with water spray; avoid inhalation of decomposition fumes; use dust suppression measures.

SECTION 6: Accidental Release Measures

- Personal Precautions: Wear dust mask (N95 or equivalent), chemical-resistant gloves (nitrile or rubber), safety goggles, and protective clothing; avoid direct contact with spilled powder and dust; use respiratory protection in confined spaces or high-dust concentrations. - Environmental Precautions: Prevent powder from entering sewers, rivers, lakes, or other water bodies; notify local environmental authorities if contamination occurs; isolate the spilled area to avoid spread to aquatic ecosystems. - Cleanup: Small spill - collect powder with a clean shovel or vacuum cleaner (equipped with dust filter), place in a sealed container for disposal; large spill - dike the area with sand or soil, collect all powder into sealed corrosion-resistant drums, and treat by professional hazardous waste disposal institutions; clean the area with water (avoid washing into water bodies) and neutralize if necessary.



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SECTION 7: Handling and Storage

- Handling: Operate in well-ventilated area; use dust-collecting equipment to suppress dust generation; avoid creating dust clouds; wear full personal protective equipment; do not mix with strong reducing agents and strong acids; avoid splashing and spillage; wash hands and face thoroughly after handling. - Storage: Store in cool, dry, well-ventilated warehouse (5-35°C); keep container tightly closed to prevent moisture absorption, dust contamination, and caking; avoid direct sunlight and high temperature (>50°C); store separately from strong reducing agents, strong acids, food-grade materials, and combustible materials; stack containers stably (no more than 3 layers) to prevent tipping; label clearly with hazard warnings. - Shelf Life: 24 months (unopened, specified conditions); use promptly after opening, seal tightly after each use; do not use if caking, discoloration, or moisture absorption occurs. - Compatibility: Incompatible with strong reducing agents (NaBH₄, Zn dust), strong acids (HCl, H₂SO₄), and heavy metal salts (Pb(NO₃)₂, CuSO₄).

SECTION 8: Exposure Controls/Personal Protection

- Engineering Controls: Install local exhaust ventilation to remove dust and vapors; maintain good general ventilation in the workplace; use dust-collecting equipment (bag filters) during handling; install emergency eyewash stations and safety showers nearby the workplace. - PPE: Respiratory protection: Use dust mask (N95/P100) when dust is generated or in confined spaces; Hand protection: Chemical-resistant gloves (nitrile or rubber, thickness ≥ 0.4 mm); Eye/Face protection: Safety goggles and face shield (dust-proof); Body protection: Dust-proof protective clothing and cap. - Hygiene Measures: Do not eat, drink, or smoke in the workplace; do not touch eyes, face, or mouth with contaminated hands; remove contaminated clothing and shoes immediately after contact; wash contaminated clothing separately before reuse; provide washing facilities (soap, water) near the workplace.

SECTION 9: Physical and Chemical Properties

Physical State: Solid (crystalline powder/crystals); Color: White; Odor: Odorless pH (25°C, 5% Aqueous Solution): 6.0-8.0; Melting Point: 100°C (loses crystal water), 687°C (decomposes) Flash Point: Not applicable (non-combustible); Autoignition Temperature: Not applicable Density (25°C, solid): 2.37 g/cm³; Solubility: Easily soluble in water (≥ 500 g/L at 25°C), slightly soluble in ethanol, insoluble in acetone and ether Vapor Pressure (25°C): <0.01 hPa; Partition Coefficient (log P): -3.2 (estimated); Viscosity: Not applicable (solid)

SECTION 10: Stability and Reactivity

- Stability: Stable under normal storage and handling conditions; maintains corrosion inhibition and micronutrient performance within the shelf life; stable in neutral and slightly acidic/alkaline environments; gradual decomposition in strong reducing environments and at temperatures >687°C. - Incompatibilities: Strong reducing agents which may reduce molybdate to molybdenum trioxide; strong acids which may form molybdic acid; heavy metal salts which may form insoluble molybdate precipitates. - Hazardous Decomposition Products: At temperatures >687°C, decomposes to release molybdenum trioxide (MoO₃), sodium oxide (Na₂O), and water vapor; contact with strong reducing agents may generate toxic molybdenum compounds.

SECTION 11: Toxicological Information



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- Acute Toxicity: Oral (Rat, LD₅₀): 3337 mg/kg; Dermal (Rabbit, LD₅₀): >2000 mg/kg; Inhalation (Rat, LC₅₀): >5 mg/m³ (4-hour exposure, dust). - Skin/Eye Irritation: Mild to moderate skin irritation (Category 2); severe eye irritation (Category 2A) with potential corneal damage; no corrosive effects. - Respiratory Toxicity: Inhalation of dust causes respiratory tract irritation (Category 3); may lead to coughing, sore throat, and shortness of breath in severe cases. - Other Toxicity: No mutagenic, carcinogenic, or teratogenic effects reported (per OECD test guidelines); long-term oral exposure may cause molybdenosis (joint pain, hyperuricemia) in animals and humans.

SECTION 12: Ecological Information

- Fish (Zebrafish, LC₅₀): 0.3 mg/L (96-hour exposure) - Daphnia (EC₅₀): 0.1 mg/L (48-hour exposure) - Algae (Growth Inhibition, EC₅₀): 0.2 mg/L (72-hour exposure) - Biodegradability: Poorly biodegradable (BOD₅/COD < 0.1); persistent in water bodies for 60-90 days. - Environmental Fate: Resistant to hydrolysis and photodegradation; in natural water bodies, exists in dissolved state; bioaccumulates in aquatic organisms (BCF: 100-500 in fish).

SECTION 13: Disposal Considerations

- Product Waste: Collect waste product in a sealed container; do not mix with other wastes; dispose of via licensed hazardous waste treatment facilities in accordance with local regulations (incineration or landfill after stabilization); do not discharge into water bodies or sewers. - Packaging Waste: Rinse packaging containers thoroughly with water; neutralize the rinse water (if necessary); dispose of the container as hazardous waste if contaminated, or as general solid waste if no residual product remains; recycle packaging materials only if permitted and after thorough cleaning. - Special Disposal Notes: Incineration must be conducted in professional facilities equipped with molybdenum oxide removal systems; do not landfill without prior stabilization (risk of leaching into groundwater); comply with local environmental protection regulations for hazardous waste disposal.

SECTION 14: Transport Information

- UN Number: ADR/RID: UN 3077; IMDG: UN 3077; IATA-DGR: UN 3077 - UN Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Sodium Molybdate) - Transport Class: 9 (Miscellaneous Dangerous Substances); Packaging Group: III; Environmental Hazards: Yes (Marine Pollutant) - Special Precautions: Transport in sealed, dust-proof packaging (paper-plastic composite bags with PE liner or iron drums); avoid collision, vibration, and impact to prevent packaging damage and powder leakage; keep away from strong reducing agents, strong acids, and food-grade goods during transport; store in a cool, ventilated area during transit; do not expose to sunlight or high temperature; transport by qualified hazardous chemical transport vehicles; drivers and handlers must be trained and familiar with hazard characteristics and emergency handling methods.

SECTION 15: Regulatory Information

- National Regulations (China): Complies with Hazardous Chemical Safety Management Regulation; meets GB/T 1601-2018 (Sodium Molybdate) and GB 5085.1-2007 (Hazardous Waste Identification Standards); compliant with water treatment agent and agricultural micronutrient fertilizer use standards. - International Regulations: GHS Rev.9 (Skin Irrit. 2, Eye Irrit. 2A, Resp. Irrit. 3, Aquatic Toxicity 1); REACH (EU, registered); TSCA (US, listed); FDA (US, compliant for industrial and agricultural use only).



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SECTION 16: Other Information

- Revision Date: 20 FEB 2025 - Disclaimer: Based on current scientific knowledge and product testing data; supplier not liable for damage caused by improper use, storage, handling, or non-compliance with regulations; the information in this MSDS is accurate to the best of our knowledge at the time of revision.

