

Material Safety Data Sheet (MSDS)

Product Name: Vitamin B1 Mononitrate (Thiamine)

MSDS Generate Date: 20-05-2017

Revision Date: 30-12-2024

Supplier:

Rawpharma Biz Pvt Ltd
1101- City Centre 2,
Science City Road,
Sola Ahmedabad Gujarat,
India - 380060.

Contact No.: +91 97272 88479

Email: info@rawpharmabiz.com

Website: www.rawpharmabiz.com

1. Identification of the Substance/Preparation and Company

- **Product identifier:** Vitamin B1 Mononitrate
- **CAS number:** 67-03-8 (commonly reported for thiamine mononitrate)
- **EC number / other IDs:** Not mandatory here; use CAS for regulatory lookup.
- **Use of the substance / mixture:** Nutritional supplement, pharmaceutical, food fortification.
- **Emergency telephone:** +91 97272 88479 (office hours). For medical emergencies contact local poison control / emergency services.

2. Composition / Information on Ingredients

- **Substance:** Thiamine mononitrate (Vitamin B1 Mononitrate)
- **Chemical formula:** C₁₂H₁₇N₄O₄S · HNO₃ (approximate representation)
- **Purity:** Typically supplied as ≥ 98% (specify actual assay on certificate of analysis).

- **Impurities / stabilizers:** May contain trace amounts of manufacturing residuals — see CoA.
- **Hazardous components:** The active substance is not classified as a hazardous substance under most transport/CLP criteria; refer to local regulations.

3. Hazards Identification

- **GHS Classification:** Not classified as hazardous for physical, health or environmental hazards under typical regulatory criteria. (Check local/regional classification.)
- **Label elements:** No mandatory pictograms for solvent/health hazards in typical formulations. Use general precautionary labeling (see Section 2).
- **Most important adverse effects:**
 - May cause mild irritation to eyes or respiratory tract if dust is inhaled in high concentrations.
 - Repeated or prolonged skin contact may cause mild irritation in sensitive individuals.
 - Not known to be a skin sensitizer or significant systemic toxin at normal exposure levels (for nutritional use).
- **Other hazards:** Not flammable, not explosive in normal handling; dust generation may create nuisance dust.

4. First Aid Measures

- **Inhalation:** Remove to fresh air. If breathing is difficult or symptoms persist, seek medical attention.
- **Skin contact:** Wash with soap and water. Remove contaminated clothing. If irritation persists, get medical attention.
- **Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If irritation persists, seek medical attention.
- **Ingestion:** Rinse mouth. Drink water. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention if large amounts ingested or if symptoms occur.
- **Notes to physician:** Treat symptomatically. There is no specific antidote.

5. Fire-Fighting Measures

- **Suitable extinguishing media:** Water spray, foam, dry chemical, CO₂ — choose appropriate media for surrounding fire.
 - **Unsuitable extinguishing media:** None known specific to this material.
 - **Specific hazards:** When heated strongly, decomposition may generate oxides of nitrogen, sulfur-containing gases, or other irritating fumes.
 - **Protective equipment for firefighters:** Self-contained breathing apparatus (SCBA) and full protective clothing. Cool exposed containers with water spray.
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6. Accidental Release Measures

- **Personal precautions:** Avoid dust formation. Use appropriate PPE (see Section 8). Avoid inhalation and contact with eyes/skin. Remove ignition sources if dust present.
 - **Environmental precautions:** Avoid release to drains or waterways. Prevent large spills from entering sewers or watercourses.
 - **Methods for containment & cleanup:** Sweep or scoop up spills carefully to minimize dust. Use vacuum equipped with HEPA filter or dampen to suppress dust and collect into suitable containers for disposal. Clean residue with water. Dispose of contaminated material per local regulations.
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7. Handling and Storage

- **Handling:**
 - Avoid generation of dust. Use good industrial hygiene practices.
 - Do not eat, drink or smoke in work areas.
 - Wash hands after handling.
 - **Storage:**
 - Store in a cool, dry, well-ventilated place. Keep container tightly closed.
 - Protect from moisture and strong oxidizing agents.
 - Recommended storage temperature range: ambient (store per supplier CoA instructions).
 - **Packaging materials:** Store in original containers (polyethylene, glass-lined drums, or other compatible packaging).
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8. Exposure Controls / Personal Protection

- **Occupational exposure limits:** No specific global OEL for thiamine mononitrate in many jurisdictions; treat as nuisance dust where applicable. Use local regulatory OELs if available. Example: follow general dust limits (e.g., total inhalable and respirable dust TLVs).
- **Engineering controls:** Local exhaust ventilation to keep airborne concentrations below any applicable limits. Dust collection systems.
- **Personal protective equipment (PPE):**
 - **Eye/Face:** Safety glasses with side shields or goggles if dust generation.
 - **Skin:** Protective gloves (nitrile or equivalent) if repeated contact is possible; lab coat or protective clothing.
 - **Respiratory:** If dust exposure exceeds OEL, use a suitable respirator (particulate filter N95/FFP2 or better) approved by local standards.
 - **Hygiene:** Wash hands after handling; launder contaminated clothing before reuse.

9. Physical and Chemical Properties

- **Appearance:** White to off-white crystalline powder (solid).
- **Odour:** Odourless or slight characteristic odour.
- **pH:** Typically slightly acidic in aqueous solution (refer to CoA for exact value).
- **Melting point / Freezing point:** Decomposes on heating (refer to supplier data).
- **Boiling point:** Not applicable (solid).
- **Flash point:** Not applicable — not flammable.
- **Flammability (solid, gas):** Not classified as flammable.
- **Explosive properties:** Not explosive; however, fine dust may form an explosive mixture in air — treat as nuisance dust.
- **Vapour pressure:** Negligible (solid).
- **Solubility:** Soluble in water (moderately), soluble in dilute acids; check CoA for exact solubility.
- **Partition coefficient (log P):** Not typically significant; hydrophilic compound.
- **Auto-ignition temperature:** Not applicable.
- **Specific gravity / density:** Refer to supplier data.

10. Stability and Reactivity

- **Reactivity:** Stable under recommended storage and handling conditions.
- **Chemical stability:** Stable under normal ambient conditions.
- **Possibility of hazardous reactions:** None under normal processing. Avoid strong oxidizing agents.
- **Conditions to avoid:** Excessive heat, moisture, and dust accumulation.
- **Incompatible materials:** Strong oxidizers, strong acids (avoid uncontrolled reactions), reducing agents (per standard precaution).
- **Hazardous decomposition products:** Oxides of nitrogen, sulfur-containing gases, and other irritating fumes if heated to decomposition.

11. Toxicological Information

- **Acute toxicity:** Low acute oral toxicity expected at typical exposure levels (nutritional doses). LD₅₀ data will vary by species — refer to authoritative toxicology resources for specific values.
- **Routes of exposure:** Inhalation (dust), skin contact, eye contact, ingestion.
- **Irritation / Corrosivity:** May cause mild irritation to eyes and respiratory tract from dust; mild skin irritation possible in sensitive individuals.
- **Sensitization:** Not typically sensitizing; no widespread evidence of skin sensitization.
- **Carcinogenicity / Mutagenicity / Reproductive toxicity:** No data indicating classification as carcinogen, mutagen, or reproductive toxin at typical exposure levels used as vitamin supplement. Consult authoritative regulatory lists for updates.
- **Chronic effects:** No specific long-term effects expected from normal use as a vitamin; extremely high doses may cause adverse effects — follow recommended dosages.

12. Ecological Information

- **Ecotoxicity:** Not expected to be acutely toxic to aquatic organisms at environmental concentrations typical for product use.
- **Persistence and degradability:** Likely biodegradable under typical environmental conditions.
- **Bioaccumulative potential:** Low potential for bioaccumulation (hydrophilic).

- **Mobility in soil:** Moderately mobile due to water solubility.
- **Other adverse effects:** Avoid large releases to the environment. If spill occurs, prevent entry to sewers or waterways.

13. Disposal Considerations

- **Waste treatment methods:** Dispose of in accordance with local, regional, national and international regulations. Small quantities may be disposed of as non-hazardous waste in approved landfill if permitted. Large quantities should be handled by licensed waste disposal contractors.
- **Contaminated packaging:** Empty containers may retain product residue. Dispose of or recycle in accordance with local regulations; decontaminate prior to disposal.

14. Transport Information (DETAILED)

Summary statement: Vitamin B1 Mononitrate is generally **not regulated as a dangerous good** for transport by road (ADR), rail (RID), sea (IMDG), or air (IATA) under normal conditions of use and transport. However, local regulations and carrier policies can differ — below are detailed recommendations and references to check.

14.1 United Nations (UN) / ADR / RID / IMDG / IATA

- **UN Number:** Not assigned (Not regulated / No UN number).
- **UN Proper Shipping Name:** Not applicable (Not regulated).
- **Transport hazard class(es):** Not applicable (Not classified as hazardous).
- **Packing group:** Not applicable.
- **Marine pollutant:** No.
- **Special Provisions:** Not applicable for standard packaged doses of vitamin. If shipped as a mixture with hazardous additives, consult applicable regulations.

14.2 Modes of transport — Practical guidance

- **Road / Rail (ADR / RID):**
 - Classified as non-dangerous goods for transport. No special ADR labeling required.
 - Use sturdy, closed packaging to prevent moisture ingress and dust release. Recommended packaging: sealed drums, fiberboard boxes with inner polyethylene bags, or HDPE drums.

- Segregation: Keep away from strong oxidizers and incompatible chemicals during transport.
- **Sea (IMDG):**
 - Not regulated as hazardous under IMDG (unless shipped with hazardous materials).
 - Use standard commercial packaging and secure against movement.
 - Stowage: Follow "Store away from oxidizing agents" good practice.
- **Air (IATA / ICAO):**
 - Not classified as a dangerous good for air transport. Follow general IATA packing instructions for non-restricted materials. Some carriers may require declaration for bulk shipments — check carrier policy.
- **Bulk transport:** If transported in bulk (tons), ensure dust control measures, proper labeling, and provide SDS to carrier. For marine bulk, review MARPOL/regional rules if applicable.

14.3 Packaging, labelling and documentation recommendations

- **Primary label:** Product name, net weight, batch/lot number, supplier name and emergency contact.
- **Handling marks:** "Keep dry", "This way up" and "Handle with care" as appropriate.
- **Documentation:** Attach SDS, commercial invoice, and any certificate of analysis. For international shipments, include customs documentation and any country-specific declarations.
- **Transport emergency information:** Provide SDS and emergency contact phone number (+91 97272 88479) to carrier.

14.4 Emergency response guidance

- **Spill response during transit:** Avoid creating dust; sweep up and place into suitable containers. Prevent material entering waterways; notify local authorities if release to environment occurs.
- **Fire during transport:** Use water spray, foam, dry chemical or CO₂. Firefighters should wear SCBA and protective clothing.
- **First aid & response contacts:** Provide the SDS and supplier emergency number to response teams. In the event of an incident, treat per Sections 4 and 5.

14.5 Regulatory and carrier checks

- **Important note:** Although typically non-regulated, always verify with:
 - Current ADR / RID / ADN / IMDG / IATA DGR regulations applicable at time of shipment.
 - Carrier-specific transport restrictions (some carriers restrict powders/dusts or require additional packaging).
 - Import/export country requirements (some countries require pre-notification for food/pharmaceutical ingredients).
 - **Recommended precautionary measures for export/import:** Confirm permitted HS code and any phytosanitary / food safety documentation requirements for food-grade or pharmaceutical shipments.
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15. Regulatory Information

- **Regulatory status:** Vitamin B1 mononitrate is widely approved as a food additive/vitamin/nutritional ingredient and is listed in many pharmacopeias — consult local regulations for permitted uses and maximum levels.
 - **Labeling requirements:** Comply with local food, feed or pharmaceutical labeling regulations depending on intended use.
 - **Safety, health and environmental regulations:** Not classified as hazardous under many national chemical regulations; check national inventories (e.g., Indian regulatory lists) for registration status.
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16. Other Information

- **Disclaimer:** The information in this MSDS is believed to be accurate at the date of issue. The supplier makes no warranty, express or implied, and assumes no liability for reliance on these data. Users should verify suitability for their own applications and regulatory compliance. Update SDS whenever new hazard information becomes available.
- **MSDS Generate Date:** 20-05-2017
- **Revision Date:** 30-12-2024
- **Website:** www.rawpharmabiz.com
- MSDS are based on the manufacturer's provided information.