Safety Data Sheet

According to 29 CFR 1910.1200 (OSHA Hazard Communication Standard, 2024)

Version 2 · Date of preparation 2026-10-07

Section 1. Identification

Product identifier used on the label	HOBt hydrate (product number 31002)
Other means of identification	Synonyms: HOBt hydrate; 1-Hydroxybenzotriazole hydrate; 1H-Benzotriazol-1-ol hydrate. CAS No.: 123333-53-9. Form: wetted with not less than 20% water by mass.
Recommended use of the chemical and restrictions on use	Recommended use: laboratory chemical; reagent for peptide synthesis and the manufacture of substances. Restrictions on use: for research and manufacturing use by technically qualified persons only. Not for food, drug, household, agricultural or cosmetic use.
Name, U.S. address, and U.S. telephone number of the chemical manufacturer, importer, or other responsible party	P3 BioSystems 270 Haven Hill Rd, Shelbyville, KY 40065 Telephone: +1 888-737-5598 Email: info@p3bio.com
Emergency phone number	+1 888-737-5598 (P3 BioSystems office line, business hours)

Section 2. Hazard identification

Classification of the chemical in accordance with paragraph (d)(1) of § 1910.1200, except for classification under paragraph (d)(1)(ii)	• Flammable solids, category 2 • Eye damage/irritation, category 2A

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200	**Signal word: Warning** Hazard pictograms: Flame, Exclamation Mark Hazard statements: • H228 Flammable solid. • H319 Causes serious eye irritation. Precautionary statements: • P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. • P240 Ground and bond container and receiving equipment. • P241 Use explosion-proof electrical/ventilating/lighting equipment. • P264 Wash hands thoroughly after handling. • P280 Wear protective gloves/protective clothing/eye protection/face protection. • P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • P337+P313 If eye irritation persists: Get medical advice/attention.
Hazards classified under paragraph (d)(1)(ii) of § 1910.1200	None identified.
Hazards not otherwise classified that have been identified during the classification process	• Desensitized explosive: explosive when dry. Keep wetted; below 20% water by mass it is an explosive for transport (UN0508, 1.3C).
Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥ 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity	Not applicable: the product is a substance, not a mixture.

Section 3. Composition/information on ingredients

Chemical name	1-hydroxybenzotriazole hydrate
Common name and synonyms	1-Hydroxybenzotriazole hydrate; HOBt hydrate; 1H-Benzotriazole, 1-hydroxy-, hydrate.
CAS number and other unique identifiers	• CAS number: 123333-53-9 • InChIKey: PJUPKRYGDFTMTM-UHFFFAOYSA-N • PubChem CID: 2796029
Impurities and stabilizing additives (constituents) which are themselves classified and which contribute to the classification of the substance	Water (CAS 7732-18-5), not less than 20% by mass, is present as a desensitizing agent. Water is not itself classified, but it suppresses the explosion hazard of the dry material (see sections 2, 7 and 10). No classified impurities are known.

Section 4. First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion	General: Move out of the danger area. Show this safety data sheet to the attending physician. Inhalation: Move the person to fresh air. If not breathing, give artificial respiration. Consult a physician. Skin: Take off contaminated clothing. Wash off with soap and plenty of water. Consult a physician if irritation develops. Eyes: Rinse cautiously with plenty of water for at least 15 minutes, lifting the upper and lower eyelids occasionally. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention. Ingestion: Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms/effects, acute and delayed	Eyes: causes serious eye irritation. No other acute or delayed effects are established. The toxicological properties have not been thoroughly investigated (see section 11).
Indication of immediate medical attention and special treatment needed, if necessary	No specific treatment is known. Treat symptomatically and supportively.

Section 5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media	Suitable: water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Unsuitable: no information available.
Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products)	Flammable solid. Explosive when dry; risk of explosion if heated under confinement. Containers may explode when heated. Hazardous combustion products: carbon oxides and nitrogen oxides (NOx).
Special protective equipment and precautions for fire-fighters	Wear positive-pressure self-contained breathing apparatus and full protective gear. Use water spray to cool unopened containers, from a protected location. Do not approach containers suspected to be hot. If safe to do so, remove containers from the path of the fire.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures	Use personal protective equipment (see section 8). Avoid dust formation and avoid breathing dust. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Methods and materials for containment and cleaning up	Prevent further spillage if safe to do so. Do not let the product enter drains. Keep spilled material wet; do not allow it to dry out. Collect by wet-brushing or with an electrically protected vacuum cleaner, using non-sparking tools, and place in suitable, closed containers for disposal (see section 13). If the spilled material has dried out, it may be explosive: consult explosives specialists before collecting it.

Section 7. Handling and storage

Precautions for safe handling	Avoid contact with skin and eyes. Avoid formation of dust and aerosols; provide exhaust ventilation where dust is formed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take measures to prevent the build-up of electrostatic charge; ground and bond containers and receiving equipment. Do not allow the product to dry out: the dry material is explosive and may explode if heated under confinement. Do not heat. Further processing of solid material may form combustible dust; consider this before additional processing. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store refrigerated (2-8 °C), in a well-ventilated place, protected from light. Do not allow to dry out: the water content must stay at or above 20% by mass. Keep away from heat and sources of ignition. Incompatible materials: strong oxidizing agents, metals, strong acids, acid chlorides, acid anhydrides.

Section 8. Exposure controls/personal protection

OSHA permissible exposure limit (PEL), ACGIH Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available	No OSHA PEL or ACGIH TLV has been established.
Appropriate engineering controls	Use local exhaust ventilation where dust is formed. Where dust clouds can occur, use explosion-proof electrical, ventilating and lighting equipment. Provide an eyewash station and safety shower close to the workstation.

Individual protection measures, such as personal protective equipment	Eyes/face: safety glasses with side shields or chemical safety goggles (29 CFR 1910.133); add a face shield where dust or splashes are likely. Skin: nitrile rubber gloves (minimum thickness 0.11 mm; breakthrough time 480 min, EN 374), inspected before use and removed without touching the outer surface. Wear flame-retardant, antistatic protective clothing. Respiratory: not normally required with adequate ventilation. For nuisance dust, use a NIOSH-approved P95 particle respirator; where a risk assessment calls for more, use a full-face N100 particle respirator as a backup to engineering controls (29 CFR 1910.134). Hygiene: wash hands before breaks and at the end of the workday.

Section 9. Physical and chemical properties

Physical state	Solid: crystalline powder, wetted with not less than 20% water by mass (per specification).
Color	White (per specification).
Odor (includes odor threshold)	No applicable information available.
Melting point/freezing point	153-160 °C (per specification).
Boiling point (or initial boiling point or boiling range)	Not determined; decomposes on heating (see 9.j).
Flammability	Flammable solid (Category 2). Explosive when dry; risk of explosion if heated under confinement.
Lower and upper explosion limit/flammability limit	No applicable information available.
Flash point	Not applicable (solid).
Auto-ignition temperature	No applicable information available.
Decomposition temperature	156 °C (decomposes at the melting point). Heating above 180 °C causes rapid exothermic decomposition.
pH	No applicable information available.
Kinematic viscosity	Not applicable (solid).
Solubility	Water: 0.3% at 20 °C. Soluble in dimethylformamide (DMF).
Partition coefficient n-octanol/water (log value)	No applicable information available.
Vapor pressure (includes evaporation rate)	No applicable information available.
Density and/or relative density	No applicable information available.
Relative vapor density	Not applicable (solid).
Particle characteristics	No applicable information available.

Section 10. Stability and reactivity

Reactivity	Explosive when dry; risk of explosion if heated under confinement. Heating above 180 °C causes rapid exothermic decomposition.
Chemical stability	Stable under recommended storage conditions (refrigerated, tightly closed, wetted). Contains not less than 20% water by mass as a desensitizing agent; loss of water increases the explosion hazard. Light sensitive.
Possibility of hazardous reactions, including those associated with foreseeable emergencies	The material may explode if it dries out, or if heated under confinement. Hazardous polymerization does not occur.
Conditions to avoid (e.g., static discharge, shock, or vibration)	Heat (do not heat above 100 °C), flames and sparks; heating under confinement; drying out; extremes of temperature; direct sunlight; dust formation.
Incompatible materials	Strong oxidizing agents, metals (including copper), strong acids, acid chlorides, acid anhydrides.
Hazardous decomposition products	Under fire conditions: carbon oxides (carbon monoxide, carbon dioxide) and nitrogen oxides (NOx).

Section 11. Toxicological information

Information on the likely routes of exposure (inhalation, ingestion, skin, and eye contact)	Eye contact, skin contact, inhalation of dust, ingestion.
Symptoms related to the physical, chemical, and toxicological characteristics	Eyes: serious eye irritation. Skin, inhalation and ingestion: not classified. Older supplier data report possible irritation of the skin, the respiratory tract and the digestive tract.
Delayed and immediate effects and also chronic effects from short- and long-term exposure	Immediate: serious eye irritation. Delayed and chronic effects: no data available. The chemical, physical and toxicological properties have not been thoroughly investigated.
Numerical measures of toxicity (such as acute toxicity estimates)	No acute toxicity data are available for the hydrate. 1-Hydroxybenzotriazole, anhydrous (CAS 2592-95-2): oral LD50, rat, 16,330 mg/kg.
Interactive effects; information on interactions should be included if relevant and readily available	No applicable information available.

Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA	Not listed by NTP, IARC or OSHA.
When specific chemical data or information is not available, whether alternative information is used and the method used to derive the information (e.g., information from a class of chemicals rather than the exact chemical, using SAR)	Yes. The oral LD50 in 11.d was measured on anhydrous 1-hydroxybenzotriazole (CAS 2592-95-2), not on the hydrate. No other alternative information was used.

Section 12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available)	Harmful to aquatic life with long lasting effects. Daphnia magna (water flea), EC50, 48 h: 75.5 mg/L (OECD Test Guideline 202).
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects (such as hazardous to the ozone layer)	Do not let the product enter drains or the environment.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging	Offer surplus and non-recyclable material to a licensed disposal company, in accordance with local, state and federal regulations. The material may be burned in a chemical incinerator equipped with an afterburner and scrubber, taking extra care in igniting because it is highly flammable. Do not allow waste to dry out. Dispose of contaminated packaging as unused product.

Section 14. Transport information

US DOT: regulated; see 14.a–14.e.

IMDG: not offered — P3 does not ship by sea.

IATA: regulated; see 14.a–14.e.

UN number	• US DOT: UN3474 • IATA: UN3474

UN proper shipping name	• US DOT: 1-Hydroxybenzotriazole, monohydrate • IATA: 1-Hydroxybenzotriazole, monohydrate
Transport hazard class(es)	• US DOT: 4.1 • IATA: 4.1
Packing group, if applicable	• US DOT: I • IATA: I
Environmental hazards (e.g., Marine pollutant (Yes/No))	• US DOT: not a marine pollutant • IATA: not a marine pollutant
Transport in bulk (according to IMO instruments)	Not applicable: P3 does not ship by sea.
Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises	The UN3474 entry applies only while the product contains at least 20% water by mass. With less than 20% water it is UN0508 (1-Hydroxybenzotriazole, anhydrous, dry or wetted with less than 20 percent water, by mass), Division 1.3C, which is forbidden by air. Keep packages cool and away from heat and ignition sources.

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product in question	TSCA: The chemicals shipped by P3 BioSystems are not subject to TSCA. SARA 302: no components subject to reporting. SARA 313: no components above the de minimis reporting levels. SARA 311/312 hazard categories: Flammable (gases, aerosols, liquids, or solids); Serious eye damage or eye irritation. California Proposition 65: this product does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16. Other information, including date of preparation or last revision

The date of preparation of the SDS or the last change to it	Date of preparation: 2026-10-07.

The information above is believed to be accurate and represents the best information available to P3 BioSystems on the date of preparation. It is provided for the safe handling of the product by trained persons in a laboratory and is not a warranty of any kind.