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	H-Pyr-OH (product number 47221)
Other means of identification	Product number: 47221 Abbreviation: H-Pyr-OH
Recommended use of the chemical and restrictions on use	Recommended use: laboratory reagent; amino acid (L-pyroglutamic acid) for peptide synthesis and research. For research and development use only. Restrictions on use: not for food, drug, household, pesticide or biocidal 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)	• Eye damage/irritation, category 1
Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200	**Signal word: Danger** Hazard pictograms: Corrosion Hazard statements: • `H318` Causes serious eye damage. Precautionary statements: • `P280` Wear 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. • `P310` Immediately call a poison center or doctor.
Hazards classified under paragraph (d)(1)(ii) of § 1910.1200	None identified.
Hazards not otherwise classified that have been identified during the classification process	None identified.

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	(2S)-5-oxopyrrolidine-2-carboxylic acid
Common name and synonyms	L-Pyroglutamic acid; (S)-(−)-2-pyrrolidone-5-carboxylic acid; 5-oxo-L-proline; L-Pyr-OH; (2S)-5-oxopyrrolidine-2-carboxylic acid.
CAS number and other unique identifiers	• CAS number: 98-79-3 • InChIKey: ODHCTXKNWHHXJC-VKHMYHEASA-N • PubChem CID: 7405
Impurities and stabilizing additives (constituents) which are themselves classified and which contribute to the classification of the substance	None known. The product is a single substance (purity assay 98.5–101.0%, per specification). No impurity or additive is known to contribute to the classification.

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 advice: Show this safety data sheet to the doctor in attendance. Inhalation: Move the person to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. Skin: Take off contaminated clothing. Wash with plenty of soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. Eyes: Rinse immediately and cautiously with plenty of water for at least 15 minutes, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. Ingestion: Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Causes serious eye damage: pain, redness and watering, with a risk of lasting injury to the eye.
Indication of immediate medical attention and special treatment needed, if necessary	Immediate medical attention is required after eye contact. Treat symptomatically. Show this safety data sheet to the attending physician.

Section 5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media	Suitable: water spray, carbon dioxide, dry chemical, alcohol-resistant foam. Unsuitable: do not use a solid water jet.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products)	Keep product and empty containers away from heat and sources of ignition. Thermal decomposition can release irritating gases and vapors. Hazardous combustion products: carbon monoxide, carbon dioxide and nitrogen oxides.
Special protective equipment and precautions for fire-fighters	Wear a NIOSH/MSHA-approved, pressure-demand self-contained breathing apparatus and full protective gear; prevent skin contact. Thermal decomposition can release irritating gases and vapors.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures	Keep unprotected people away from the spill. Use personal protective equipment (see Section 8), including gloves and eye/face protection; avoid contact with skin and eyes. Avoid dust formation and do not breathe dust. Ensure adequate ventilation.
Methods and materials for containment and cleaning up	Sweep up and shovel the material, without creating dust, into suitable closed containers for disposal (see Section 13). Do not let the product enter drains.

Section 7. Handling and storage

Precautions for safe handling	Avoid contact with skin, eyes and clothing; wear eye/face protection (Section 8). Avoid formation of dust and do not breathe dust. Provide appropriate exhaust ventilation where dust is formed. Keep away from heat and sources of ignition; minimize dust generation and accumulation. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Keep the container tightly closed. Store refrigerated (2–8 °C) in a dry place (per specification). Allow the container to warm to room temperature before opening. Incompatible materials: strong oxidizing agents.

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 with adequate ventilation; use local exhaust ventilation (e.g. a fume hood) where dust is generated. Eyewash stations and safety showers must be close to the workstation.

Individual protection measures, such as personal protective equipment	Eyes/face: Tightly fitting chemical safety goggles (29 CFR 1910.133), with a face shield where dust or splashes are possible. Skin: Chemical-resistant gloves (e.g. nitrile rubber, minimum thickness 0.11 mm); inspect before use and remove without touching the outer surface. Wear a lab coat or other protective clothing to prevent skin exposure. Respiratory: Where dust is generated and ventilation is inadequate, use a NIOSH-approved particulate respirator (e.g. N95/P95), under a respiratory protection program meeting 29 CFR 1910.134. Hygiene: Wash hands before breaks and at the end of the workday. Do not eat, drink or smoke in work areas.

Section 9. Physical and chemical properties

Physical state	Solid (powder), per specification.
Color	White to off-white (per specification).
Odor (includes odor threshold)	Odorless (one supplier). Odor threshold: no applicable information available.
Melting point/freezing point	Melting point: 152–162 °C (supplier data; not in the P3 specification).
Boiling point (or initial boiling point or boiling range)	No applicable information available.
Flammability	No applicable information available.
Lower and upper explosion limit/flammability limit	No applicable information available.
Flash point	No applicable information available.
Auto-ignition temperature	No applicable information available.
Decomposition temperature	No applicable information available.
pH	pH 1.7 (5% aqueous solution).
Kinematic viscosity	Not applicable (solid).
Solubility	Water: 100–150 g/L at 20 °C.
Partition coefficient n-octanol/water (log value)	No applicable information available.
Vapor pressure (includes evaporation rate)	Vapor pressure: no applicable information available. Evaporation rate: not applicable (solid).
Density and/or relative density	No applicable information available.
Relative vapor density	Not applicable (solid).
Particle characteristics	Powder (per specification). No particle size data available.

Section 10. Stability and reactivity

Reactivity	None known, based on information available.

Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions, including those associated with foreseeable emergencies	No hazardous reactions known under normal processing. Hazardous polymerization does not occur.
Conditions to avoid (e.g., static discharge, shock, or vibration)	Heat, flames, sparks and other ignition sources; dust formation; contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon monoxide, carbon dioxide and nitrogen oxides.

Section 11. Toxicological information

Information on the likely routes of exposure (inhalation, ingestion, skin, and eye contact)	Ingestion, skin contact, eye contact and inhalation of dust.
Symptoms related to the physical, chemical, and toxicological characteristics	Eyes: pain, redness, watering and serious eye damage; risk of lasting injury. Skin and respiratory tract: no data are available on irritation.
Delayed and immediate effects and also chronic effects from short- and long-term exposure	Immediate: serious eye damage. Chronic: no data available. The toxicological properties have not been fully investigated.
Numerical measures of toxicity (such as acute toxicity estimates)	Oral LD50 (rat): > 1 g/kg (> 1,000 mg/kg). Dermal LD50: no data available. Inhalation LC50: no data available.
Interactive effects; information on interactions should be included if relevant and readily available	No interactive effects are known.
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 as a carcinogen.
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)	No alternative (analog, class or SAR) information was used. The classification follows US and Canadian suppliers' safety data sheets for this substance; no eye irritation test data for this substance were found. Its aqueous solution is strongly acidic (pH 1.7 at 5%).

Section 12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available)	No data available.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	Likely to be mobile in the environment because of its water solubility.
Other adverse effects (such as hazardous to the ozone layer)	Do not let the product enter drains.

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	Dispose of contents and container in accordance with local, state and federal regulations, using a licensed waste disposal company. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste (40 CFR Part 261). Dispose of contaminated packaging as unused product. Do not let the product enter drains.

Section 14. Transport information

US DOT: not regulated.

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

IATA: not regulated.

UN number	See above: not regulated by any mode P3 ships by.
UN proper shipping name	See above: not regulated by any mode P3 ships by.
Transport hazard class(es)	See above: not regulated by any mode P3 ships by.
Packing group, if applicable	See above: not regulated by any mode P3 ships by.
Environmental hazards (e.g., Marine pollutant (Yes/No))	See above: not regulated by any mode P3 ships by.
Transport in bulk (according to IMO instruments)	Not applicable. P3 BioSystems does not ship this product in bulk or 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	None known.

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 extremely hazardous substances. SARA 313: no components subject to reporting. SARA 311/312 hazard categories: Serious eye damage or eye irritation. CERCLA: contains no substances regulated as hazardous substances (40 CFR 302). California Proposition 65: contains no Proposition 65 chemicals.

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.