

SAFETY DATA SHEET

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Section 1, Identification

- **Catalog Number:** ACT-100-HBTU, ACT-500-HBTU, ACT-1K-HBTU
- **Product Name:** HBTU
- **Alternate Name:** O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate hexafluorophosphate
- **Chemical Formula:** C₁₁H₁₆N₅OPF₆
- **Chemical family:** Activators
- **Recommended Use:** Peptide synthesis

Section 2, Hazard(s) Identification

- **Emergency Overview:** **Warning!** Causes skin irritation. Irritant (Category 2, 2A) Target organ toxicity (Category 3).
- **Routes of Entry:** Dermal contact. Eye contact. Inhalation. Ingestion
- **Potential Acute Health Effects:**

Eyes: Hazardous in case of eye contact

Skin: Hazardous in case of skin contact.

Inhalation: Hazardous in case of inhalation (lung irritant)

Ingestion: Hazardous in case of ingestion

Section 3, Composition/Information on Ingredients

Components	CAS #	Chemical Formula	Molecular Weight	Components
HBTU	94790-37-1	C ₁₁ H ₁₆ N ₅ OPF ₆	379.3 g/mol	HBTU

Section 4, First-Aid Measures

Show this safety data sheet to the doctor in attendance. Get medical attention immediately.

- **Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes
Cold water may be used
Do not apply neutralizing agents
Get medical attention immediately
- **Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes
Cover the irritated skin with an emollient
Cold water may be used
Wash clothing before reuse. Thoroughly clean shoes before reuse.
Get medical attention immediately
- **Inhalation:** If inhaled, move to fresh air. If not breathing, give artificial respiration
If breathing is difficult, give oxygen
Get medical attention immediately
- **Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel
Never give anything by mouth to an unconscious person
Loosen tight clothing such as a collar, tie, belt or waistband
Get medical attention immediately

Section 5, Fire-Fighting Measures

- **Suitable Extinguishing Media:** Water spray
Alcohol resistant foam
Dry powder
Carbon dioxide
- **Special Exposure Hazards:** Hazardous decomposition products formed under fire conditions. -
Carbon oxides, nitrogen oxides, oxides of phosphorus, hydrogen fluoride
- **Special Protection Equipment for Firefighters:** Compressed air/oxygen apparatus

Section 6, Accidental Release Measures

- **Person-related Precautionary Measures:** Avoid substance contact. Avoid formation/inhalation of dusts. Avoid breathing vapors, mist or gas
- **Environmental Protection Measures:** Do not allow to enter drains

- **Procedures for cleaning/absorption:** Sweep up and shovel. Keep in suitable, closed containers for disposal

Section 7, Handling and Storage

Precautions for Safe Handling: Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for Safe Storage, Including Any Incompatibilities: Keep container in a cool, dry, well-ventilated area.

Keep closed tightly. Store between -20°C

Section 8, Exposure Controls/Personal Protection

Personal Protection:

- **Eye protection:** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- **Hand Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
- **Respiratory Protection:** Required when dusts are generated. Filter P 2 (acc. To DIN 3181) for solid and liquid particles of harmful substances.
- **Skin and Body Protection:** Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9, Physical and Chemical Properties

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|------------------------------|--------------|
| • Physical Appearance: | Solid, white |
| • Odor: | NA |
| • Boiling Point: | 200°C |
| • Melting Point: | NA |
| • Vapor Pressure (kPa/25°C): | NA |
| • Vapor Density (Air = 1): | NA |
| • Specific Gravity: | NA |
| • pH Value: | NA |
| • Flashpoint: | NA |
| • Auto-Ignition Point: | NA |
| • Explosion Limits: | NA |
| • Solubility: | NA |
| • Viscosity: | NA |

Section 10, Stability and Reactivity

- **Stability:** Stable under recommended storage conditions
- **Reactivity/Hazardous Decompositions Products:** Hazardous decomposition products formed under fire conditions – Carbon oxides, nitrogen oxides, oxides of phosphorus, hydrogen fluoride
- **Conditions/Materials to Avoid:** Strong oxidizing agents

Section 11, Toxicological Information

- **Acute Toxicity:**
 - LD50 Oral Rat: N/A
 - LD50 Dermal Rabbit: N/A
 - LC50 Inhalation rat: N/A
- **Chronic Toxicity:**
 - Carcinogenicity (TLV): N/A
 - IARC Classification: N/A
- **Routes of Exposure:** Ingestion, inhalation, eyes and skin.

Section 12, Ecological Information*

- **BOD5 and COD:** N/A

Section 13, Disposal Considerations*

- **EPA Waste Number:** N/A
- **Treatment:** Material does not have an EPA Waste Number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

Section 14, Transport Information*

- **Proper Shipping Name:** O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate
- **Transport by Road/Rail (ADR/RID):** Not subject to transport regulations

Section 15, Regulatory Information*

- **OSHA:** Irritant
- **SARA 302 Components:** N/A
- **SARA 313 Components:** O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate is not subject to reporting levels
- **SARA 311/312 Hazards:** N/A
- **California Prop. 65 Component:** This product does not contain any chemicals known to the State of California to cause cancer, birth, defects, or any other reproductive harm

Section 16, Other Information

The information accumulated herein is believed to be accurate but is not warranted to be whether origination with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Gyros Protein Technologies.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15(29 CFR 1910.1200(g)(2)).