

SAFETY DATA SHEET

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Section 1, Identification

- **Catalog Number:** TPS-H05-SB, TPS-H15-SB, TPS-H25-SB
- **Product Name:** Fmoc-L-Ser(tBu)-OH / HBTU
- **Alternate Name:** N^o- Fmoc-O-tert-butyl-L-serine; O-(Benzotriazol-1-yl)-N,N',N'-tetramethyluronium hexafluorophosphate
- **Chemical family:** Fmoc Protected Amino Acid, Activator
- **Recommended Use:** Peptide Synthesis
- **Restrictions on Use:**

Section 2, Hazard(s) Identification

- **Emergency Overview: Warning!** Causes skin irritation. Irritant (Category 2, 2A) Target organ toxicity (Category 3).
- **Routes of Entry:** Eye contact. Inhalation. Ingestion. Dermal contact.
- **Potential Acute Health Effects:**
 - **Eye:** May cause eye irritation
 - **Skin:** May cause skin irritation.
 - **Ingestion:** May be harmful if swallowed
 - **Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

Section 3, Composition/information on Ingredients

Components	CAS#	Chemical Formula	Molecular Weight
Fmoc-L-Ser(tBu)-OH	128107-47-1	C ₂₂ H ₂₅ NO ₅	383.4 g/mol
HBTU	94790-37-1	C ₁₁ H ₁₆ N ₅ OPF ₆	379.3 g/mol

Section 4, First-Aid Measures

- **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
 - 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
 - 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
 - Get medical attention immediately

Section 5, Fire-Fighting Measures

- **Suitable Extinguishing Media:**
 - Water spray
 - Dry Chemical
 - Alcohol-resistant foam
 - Carbon dioxide
- **Special Exposure Hazards:**
 - Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides
- **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

- **Handling:** Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.
- **Storage:** Keep container in a cool, dry, well-ventilated area. Keep closed tightly. Store between +2 to +8°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

- **Physical Appearance:** Solid, white to off white
- **Odor:** NA
- **Boiling Point:** NA
- **Melting Point:** NA
- **Vapor Pressure (mmHg/70°F):** NA
- **Vapor Density (Air = 1):** NA
- **Specific Gravity:** NA
- **Solubility:** NA

Section 10, Stability and Reactivity

- **Stability:** Stable under recommended storage conditions.
- **Reactivity/Hazardous Decomposition Products:** Hazardous decomposition products formed under fire conditions. - Carbon oxides
- **Conditions/Materials to Avoid:** Strong oxidizing agents

Section 11, Toxicological information

- **Acute Toxicity:**
 - Fmoc-Ser(tBu)-OH
 - LD50 Oral Rat: NA
 - LC50 Inhalation Rat: NA
 - HBTU
 - LD50 Oral Rat: NA
 - LD50 Dermal Rabbit: NA
 - LC50 Inhalation Rat: NA
- **Chronic Toxicity:**
 - Fmoc-Ser(tBu)-OH
 - Carcinogenicity (TLV): NA
 - IARC Classification: NA
 - HBTU
 - Carcinogenicity (TLV): NA
 - IARC Classification: NA
- **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:** Fmoc-L-Ser(tBu)-OH / HBTU
- **Transport by Road/Rail (ADR/RID):** Not subject to transport regulations

Section 15, Regulatory information*

- **OSHA Hazards:** NA
- **SARA 302 Components:** NA
- **SARA 313 Components:** Fmoc-L-Ser(tBu)-OH / HBTU is not subject to reporting levels
- **SARA 311/312 Hazards:** NA
- **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)).