

# MATERIAL SAFETY DATA SHEET

## Section 1 - Identification

|                     |                                                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Product identifier  | Fmoc-Thr-OL                                                                                                                         |
| Catalog No.         | AS2059                                                                                                                              |
| CAS No.             | 176380-53-3                                                                                                                         |
| Recommended use     | Laboratory research, chemical synthesis and peptide-building-block applications.                                                    |
| Restrictions on use | For research use only. Not for human or veterinary use, therapeutic use, diagnostic use, food, household, or consumer applications. |
| Responsible party   | Alan Scientific Inc.                                                                                                                |
| U.S. address        | 9031 Shady Grove Court, Gaithersburg, MD 20877 U.S.                                                                                 |
| Contact             | +1 888-757-1116   contactus@alanscientific.com   www.alanscientific.com                                                             |
| Emergency telephone | +1 888-757-1116                                                                                                                     |

## Section 2 - Hazard(s) Identification

|                          |                                                                                                                                 |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| OSHA HCS classification  | Product-specific classification where supported by reviewed information; otherwise not assigned in this summary.                |
| Signal word              | Not assigned                                                                                                                    |
| Hazard statements        | No product-specific GHS classification was assigned from the reviewed source set. Handle using standard laboratory precautions. |
| Pictograms               | None                                                                                                                            |
| Precautionary statements | Avoid breathing dust. Wash thoroughly after handling. Wear suitable gloves and eye protection. Use adequate ventilation.        |
| HNOC                     | None known based on currently available information.                                                                            |
| Unknown acute toxicity   | Not applicable - substance, not a mixture.                                                                                      |

## Section 3 - Composition / Information on Ingredients

|                                |                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------|
| Substance / mixture            | Substance                                                                            |
| Chemical name                  | Fmoc-Thr-OL                                                                          |
| CAS No.                        | 176380-53-3                                                                          |
| Molecular formula              | C <sub>19</sub> H <sub>21</sub> NO <sub>4</sub>                                      |
| Molecular weight               | 327.37 g/mol                                                                         |
| Purity / concentration         | Product-specific; refer to Certificate of Analysis (COA).                            |
| Hazard-contributing impurities | No additional hazard-contributing impurities identified in the information reviewed. |

## Section 4 - First-Aid Measures

Inhalation: Move to fresh air. Obtain medical attention if symptoms occur or persist. Skin contact: Remove contaminated clothing and wash thoroughly with soap and water. Eye contact: Rinse cautiously with water for several minutes; remove contact lenses if present and easy to do. Continue rinsing and obtain medical advice if irritation persists. Ingestion: Rinse mouth. Do not induce vomiting unless directed by medical personnel. Obtain medical advice if unwell. Treat symptomatically and supportively.

## Section 5 - Fire-Fighting Measures

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide as appropriate for the surrounding fire. Specific hazards: Carbon oxides and product-dependent nitrogen, sulfur, fluorine or iodine-containing decomposition products may form during combustion or thermal decomposition. Firefighter protection: Wear self-contained breathing apparatus and appropriate protective equipment when conditions warrant.

## Section 6 - Accidental Release Measures

Avoid dust formation and inhalation. Provide ventilation and use appropriate personal protective equipment. Collect dry material carefully without generating dust and place in a suitable closed container for disposal. Prevent unnecessary release to drains or the environment.

## Section 7 - Handling and Storage

Handle using good laboratory practice. Avoid inhalation of dust and unnecessary contact with skin and eyes. Keep container tightly closed and protect from contamination and moisture. Store under the conditions specified on the product label and lot-specific COA/MSDS. Keep away from incompatible materials such as strong oxidizing agents unless supplier data indicate otherwise.

## Section 8 - Exposure Controls / Personal Protection

|                                     |                                                                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Occupational exposure limits</b> | No substance-specific OSHA PEL or ACGIH TLV identified in the information reviewed.                                                                              |
| <b>Engineering controls</b>         | Use general laboratory ventilation; local exhaust is appropriate where dust is generated.                                                                        |
| <b>Eye / face protection</b>        | Safety glasses or suitable chemical splash protection.                                                                                                           |
| <b>Skin / body protection</b>       | Suitable chemical-resistant gloves and laboratory clothing.                                                                                                      |
| <b>Respiratory protection</b>       | Normally not required under controlled handling; if dust is generated and ventilation is insufficient, use an appropriate NIOSH-approved particulate respirator. |
| <b>Hygiene measures</b>             | Wash hands after handling. Do not eat, drink or smoke in chemical handling areas.                                                                                |

## Section 9 - Physical and Chemical Properties

|                                   |                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Physical state</b>             | Solid                                                                                               |
| <b>Appearance</b>                 | White to off-white solid/powder where consistent with supplier information; lot appearance may vary |
| <b>Odor</b>                       | No data available                                                                                   |
| <b>pH</b>                         | No data available                                                                                   |
| <b>Melting point</b>              | No validated Alan Scientific lot-specific value assigned in this MSDS                               |
| <b>Boiling point / range</b>      | No data available                                                                                   |
| <b>Flammability</b>               | No data available                                                                                   |
| <b>Flash point</b>                | No data available                                                                                   |
| <b>Vapor pressure</b>             | No data available                                                                                   |
| <b>Density / relative density</b> | No data available                                                                                   |
| <b>Solubility</b>                 | Product-specific; consult technical data/COA if available                                           |
| <b>Partition coefficient</b>      | No data available                                                                                   |
| <b>Molecular weight</b>           | 327.37 g/mol                                                                                        |

## Section 10 - Stability and Reactivity

Reactivity: No comprehensive reactivity data available. Chemical stability: Expected to be stable under recommended storage conditions. Hazardous reactions: No hazardous polymerization is known. Conditions to avoid: Excessive heat, moisture where relevant, and conditions inconsistent with recommended storage. Incompatible materials: Strong oxidizing agents unless product-specific data indicate otherwise. Hazardous decomposition products: Carbon oxides and product-dependent nitrogen, sulfur, fluorine or iodine-containing decomposition products may form during combustion or thermal decomposition.

## Section 11 - Toxicological Information

|                                         |                                                                                                                                                |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Likely exposure routes</b>           | Inhalation of dust, eye contact, skin contact and ingestion.                                                                                   |
| <b>Acute toxicity</b>                   | See Section 2 classification; numerical LD50/LC50 data are not assigned in this Alan Scientific MSDS unless supported by reviewed source data. |
| <b>Skin corrosion / irritation</b>      | See Section 2.                                                                                                                                 |
| <b>Eye damage / irritation</b>          | See Section 2.                                                                                                                                 |
| <b>Respiratory / skin sensitization</b> | No data available.                                                                                                                             |
| <b>Germ cell mutagenicity</b>           | No data available.                                                                                                                             |
| <b>Carcinogenicity</b>                  | Not identified here as a listed carcinogen by IARC, NTP or OSHA based on currently reviewed information.                                       |
| <b>Reproductive toxicity</b>            | No data available.                                                                                                                             |
| <b>STOT - single exposure</b>           | See Section 2.                                                                                                                                 |
| <b>STOT - repeated exposure</b>         | No data available.                                                                                                                             |
| <b>Aspiration hazard</b>                | Not applicable to the supplied solid based on available information.                                                                           |
| <b>Additional information</b>           | Chemical and toxicological properties may not be fully characterized. Handle using good laboratory safety practice.                            |

## Section 12 - Ecological Information

Ecotoxicity: No complete product-specific data available. Persistence / degradability: No data available. Bioaccumulation: No data available. Mobility in soil: No data available. Avoid unnecessary environmental release.

## Section 13 - Disposal Considerations

Dispose of product, residues and contaminated packaging in accordance with applicable federal, state and local requirements. Do not mix with incompatible waste streams. Handle uncleaned containers as product residue.

**Section 14 - Transport Information**

|                              |                                                                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Transport status</b>      | Not regulated as dangerous goods based on reviewed supplier information unless shipment-specific documentation indicates otherwise. |
| <b>UN number</b>             | Not assigned in this document unless a regulated classification is confirmed.                                                       |
| <b>Proper shipping name</b>  | Not assigned.                                                                                                                       |
| <b>Hazard class</b>          | Not assigned.                                                                                                                       |
| <b>Packing group</b>         | Not assigned.                                                                                                                       |
| <b>Environmental hazards</b> | No transport-specific environmental classification assigned in this document.                                                       |
| <b>Special precautions</b>   | Use secure, closed packaging appropriate for laboratory chemicals and verify carrier requirements before shipment.                  |

**Section 15 - Regulatory Information**

|                                        |                                                                                                                                                                                        |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OSHA HCS</b>                        | Prepared with consideration of the OSHA Hazard Communication Standard (29 CFR 1910.1200); hazard classification is stated in Section 2 based on currently reviewed source information. |
| <b>Other regulatory considerations</b> | Users and importers are responsible for confirming TSCA, state, local and jurisdiction-specific requirements for the specific transaction and use.                                     |

**Section 16 - Other Information**

|                                       |                                                                                                                                                                                                                                                        |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Revision</b>                       | 1.0                                                                                                                                                                                                                                                    |
| <b>Date of preparation / revision</b> | 2026-09-07                                                                                                                                                                                                                                             |
| <b>Revision summary</b>               | Alan Scientific MSDS prepared for Specialty Peptide Building Blocks Page 9 using no-logo 16-section format.                                                                                                                                            |
| <b>Data / assessment basis</b>        | Alan Scientific product information; currently available supplier safety documentation and public chemical records reviewed for identity and hazard context. Final release should remain aligned with the lot-specific upstream supplier MSDS and COA. |

**Safety information notice:** Information is provided in good faith for safe handling of the supplied research material and is based on information reasonably available as of the revision date. It is not a product specification or warranty. Users are responsible for determining suitability, controls and regulatory obligations for their specific use.