

Material Safety Data Sheet (MSDS)

Revision Number: 2.0	Last updated August 24, 2016
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1. Product and Company Identification

Product Name:	Fmoc - Thr(tBu) – OH; <i>N - α - Fmoc - O - t - butyl - L – threonine</i>
Manufacturer/Supplier:	AnaSpec, Inc. www.anaspec.com 34801 Campus Drive Fremont, CA 94555 Tel: 510-791-9560 Fax: 510-791-9572 Email: service@anaspec.com
Catalog Number	AS-20035; AS-20036; AS-20137; AS-20137-5; AS-20137-10; AS-60928-20

2. Hazards Identification

Emergency Overview: We do recommend handling all chemicals with caution. Use proper protective equipment when handling chemicals. To our knowledge, the hazards of this material have not been thoroughly investigated.

GHS Hazard Classification: WARNING

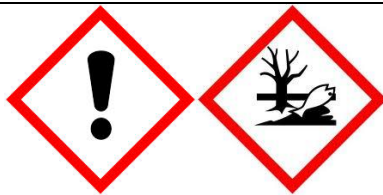
GHS Physical Hazards:

Very toxic to aquatic life (Category 1), H400
Very toxic to aquatic life with long lasting effects (Category 1), H410

GHS Health and Environmental Hazards

GHS Signal Words: WARNING

GHS Hazard Symbol/Pictogram:



GHS Hazard Statements:

H400: Very toxic to aquatic life (Category 1)

H410: Very toxic to aquatic life with long lasting effects (Category 1)

GHS Precautionary Statements:

P261: Avoid breathing dust/fume/gas/mist/vapour/spray

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/ eye protection/ face protection

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position Comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or Doctor/physician.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P332+P313 If skin irritation occurs: Get medical advice/ attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P403+P233 Store in well-ventilated place. Keep containers tightly closed.

P405 Store locked up

P501 Dispose of contents/containers to an approved waste disposal plant.

P305+P351+P338: IF IN EYE, rinse cautiously for several minutes. Remove contact lenses, if present and easy. Continue rinsing. Call a physician

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Potential Health Effects for:

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Skin: In case of contact, immediately wash skin with soap and copious amount of water.

Eyes: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Chronic Exposures: No information available. We recommend limiting prolonged exposure.

Target Organs: No information available

HMIS Classification

Health hazard: 2

Chronic Health Hazard: 0

Flammability: 0

Physical hazards: 0

NFPA Rating

Health hazard: 2

Fire: 0

Reactivity Hazard: 0

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3. Composition*Ingredients/Components:*

Chemical Name: Fmoc - Thr(tBu) – OH; *N* - α - Fmoc - O - t - butyl - L – threonine
 Molecular formula: C₂₃H₂₇NO₅
 Molecular weight: 397.5
 CAS-No 71989-35-0
 EC-No 276-261-1

4. First Aid Measures

<i>Inhalation:</i>	If dust is inhaled, remove from contaminated area. Encourage patient to blow nose to ensure clear passage of breathing. If irritation or discomfort persists seek medical attention.
<i>Ingestion:</i>	If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.
<i>Skin:</i>	If skin or hair contact occurs: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
<i>Eyes:</i>	If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. If pain persists or recurs seek medical attention.

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<u>5. Fire Fighting Measures</u>	
<i>Extinguishing media:</i>	Water spray or fog. Alcohol resistant foam. Dry chemical powder. BCF (where regulations permit). Carbon dioxide
<i>Special firefighting procedures:</i>	Alert Emergency Responders and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course. Use water delivered as a fine spray to control fire and cool adjacent area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
<i>Unusual fire and explosions hazards:</i>	Emits toxic fumes under fire conditions
<u>6. Accidental Release Measures</u>	
<i>Spill response</i>	Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact by using protective equipment. Use dry clean up procedures and avoid generating dust. Place in a suitable, labeled container for waste disposal
<i>Containment</i>	Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. DO NOT enter confined spaces until atmosphere has been checked. DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Use good occupational work practice. Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source. Do NOT cut, drill, grind or weld such containers
<i>PPE</i>	Use personal protective equipment
<u>7. Handling and Storage</u>	
Store at 4 °C desiccated and protected from light. Store away from oxidizing agent.	

8. Exposure Controls / Personal Protection

<i>Engineering controls</i>	Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction. Exhaust ventilation should be designed to prevent accumulation and re-circulation of particulates in the workplace. If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of: (a): particle dust respirators, if necessary, combined with an absorption cartridge; (b): filter respirators with absorption cartridge or canister of the right type; (c): fresh-air hoods or masks Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding. Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.
<i>PPE</i>	Use personal protective equipment

9. Physical and Chemical Properties

<i>Physical State</i>	N/A
<i>Odour</i>	Not available
<i>Solubility in Water</i>	Not available
<i>Specific Gravity</i>	Not available
<i>pH</i>	Not available
<i>Boiling Point</i>	Not available
<i>Melting Point</i>	Not available
<i>Flash Point</i>	N/A
<i>Vapor Pressure:</i>	N/A
<i>Vapor Density:</i>	N/A

10. Stability and Reactivity

<i>Thermal Decomposition</i>	No data available
<i>Dangerous Products of Decomposition</i>	No data available
<i>Dangerous Reactions</i>	CO _x , NO _x when burned

Keep container tightly closed in a dry well-ventilated place. Store in 4°C refrigerator.

11. Toxicological Information

<i>RTECS Number</i>	N/A
<i>Toxicity</i>	No information available.

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<i>Health Hazards</i>	Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
<i>Potential Hazards</i>	Not available
<i>Carcinogenicity:</i>	No significant acute toxicological data identified
<i>OSHA Permissible Exposure Limit(PEL) Data</i>	N/A
<i>ACGIH Threshold Limit Values (TLV)</i>	N/A
<i>Reproductive Toxicity:</i>	No information available
<u>12. Ecological Information</u>	
No information available.	
<u>13. Disposal Considerations</u>	
All waste must be handled in accordance with local, state and federal regulations. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.	
<u>14. Transport Information</u>	
<i>Hazard Class</i>	N/A
<i>Identification Number</i>	N/A
<i>Packing Group</i>	N/A
<i>Proper Shipping Name (DOT)</i>	N/A
<u>15. Regulatory Information</u>	
<i>California Proposition 65:</i> N/A <i>US TSCA (Toxic Substance Control Act):</i> N/A <i>US CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):</i> N/A <i>US SARA Title III (Superfund Amendments and Reauthorization Act):</i> N/A <i>US Other:</i> N/A <i>EC EINECS (European Inventory of Existing Commercial Chemical Substances) Number:</i> N/A <i>EC Risk Statements:</i> N/A <i>Other Country Regulations:</i> N/A	
<u>16. Other Information</u>	
It is not intended for food, drug, household, agricultural or cosmetic use. A technically qualified individual experienced in handling potentially hazardous chemicals must supervise its use. The	

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above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Users should make independent decisions regarding completeness of the information based on all sources available. AnaSpec shall not be held liable for any damage resulting from handling or from contact with the above product.

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