# 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

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| Product identifier used on the label | Fmoc-OSu (product number 32001) |
| Other means of identification | Product number: 32001<br>Abbreviation: Fmoc-OSu |
| Recommended use of the chemical and restrictions on use | Recommended use: laboratory reagent for introducing the Fmoc (9-fluorenylmethoxycarbonyl) amino-protecting group, e.g. in peptide synthesis. For research and development use only.<br>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<br>270 Haven Hill Rd, Shelbyville, KY 40065<br>Telephone: +1 888-737-5598<br>Email: info@p3bio.com |
| Emergency phone number | +1 888-737-5598 (P3 BioSystems office line, business hours) |

## Section 2. Hazard identification

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| Classification of the chemical in accordance with paragraph (d)(1) of § 1910.1200, except for classification under paragraph (d)(1)(ii) | • Acute toxicity - oral, category 4<br>• Sensitization - skin, category 1 (including both sub-categories 1A and 1B) |

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| Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200 | **Signal word: Warning**<br>Hazard pictograms: Exclamation Mark<br>Hazard statements:<br>• H302 Harmful if swallowed.<br>• H317 May cause an allergic skin reaction.<br>Precautionary statements:<br>• P261 Avoid breathing dust.<br>• P264 Wash hands thoroughly after handling.<br>• P270 Do not eat, drink or smoke when using this product.<br>• P272 Contaminated work clothing must not be allowed out of the workplace.<br>• P280 Wear protective gloves.<br>• P301+P312 If swallowed: Call a poison center or doctor if you feel unwell.<br>• P330 Rinse mouth.<br>• P302+P352 If on skin: Wash with plenty of soap and water.<br>• P333+P313 If skin irritation or rash occurs: Get medical advice/attention.<br>• P321 Specific treatment (see first-aid measures on this label).<br>• P362+P364 Take off contaminated clothing and wash it before reuse.<br>• P501 Dispose of contents/container in accordance with local, state and federal regulations. |
| 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

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| Chemical name | (2,5-dioxopyrrolidin-1-yl) 9H-fluoren-9-ylmethyl carbonate |
| Common name and synonyms | N-(9-Fluorenylmethoxycarbonyloxy)succinimide; 9-Fluorenylmethyl N-succinimidyl carbonate; 1-[[(9H-Fluoren-9-ylmethoxy)carbonyl]oxy]-2,5-pyrrolidinedione; Fmoc N-hydroxysuccinimide ester; Fmoc-ONSu. |
| CAS number and other unique identifiers | • CAS number: 82911-69-1<br>• InChIKey: WMSUFWLPZLCIHP-UHFFFAOYSA-N<br>• PubChem CID: 134122 |

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| 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 ≥ 99.0% by HPLC, per specification). No classified impurities or stabilizing additives are present. |

## Section 4. First-aid measures

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| Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion | Inhalation: Move the person to fresh air. If breathing is difficult, give oxygen; if not breathing, give artificial respiration. Get medical attention.<br>Skin: Take off contaminated clothing. Wash with plenty of soap and water. If skin irritation or rash occurs, get medical advice/attention. Wash contaminated clothing before reuse.<br>Eyes: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention.<br>Ingestion: Rinse mouth with water. Never give anything by mouth to an unconscious person. Call a poison center or doctor if you feel unwell. |
| Most important symptoms/effects, acute and delayed | Harmful if swallowed.<br>May cause an allergic skin reaction. Symptoms may include rash, itching and swelling. Allergic reactions can be delayed and can occur on later contact in persons already sensitized; repeated or prolonged skin contact may cause allergic reactions in susceptible persons. |
| Indication of immediate medical attention and special treatment needed, if necessary | Treat symptomatically. Show this safety data sheet to the attending physician. |

## Section 5. Fire-fighting measures

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| Suitable (and unsuitable) extinguishing media | Suitable: water spray, carbon dioxide, dry chemical, alcohol-resistant foam.<br>Unsuitable: none known; a solid water stream may be inefficient. |
| 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. 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. Thermal decomposition can release irritating gases and vapors. |

## Section 6. Accidental release measures

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| Personal precautions, protective equipment, and emergency procedures | Use personal protective equipment (see Section 8), including gloves and eye protection; avoid skin contact. Avoid dust formation and avoid breathing 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). Prevent entry into drains, sewers and surface water; this material is toxic to aquatic life. |

## Section 7. Handling and storage

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| Precautions for safe handling | Avoid contact with skin and eyes. Avoid formation of dust and aerosols and do not breathe dust. Provide appropriate exhaust ventilation where dust is formed. Keep away from sources of ignition. Further processing of the solid may form combustible dust; consider this before additional processing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. |
| 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. Moisture sensitive; storage under inert gas is recommended.<br>Incompatible materials: strong oxidizing agents, strong acids. |

## Section 8. Exposure controls/personal protection

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| 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 | Ensure adequate ventilation; use local exhaust ventilation (e.g. a fume hood) where dust is formed. Eyewash stations and safety showers should be close to the workstation. |
| Individual protection measures, such as personal protective equipment | Eyes/face: Safety glasses with side shields or chemical safety goggles (29 CFR 1910.133).<br>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. Contaminated work clothing must not be allowed out of the workplace.<br>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.<br>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

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| Physical state | Solid (powder), per specification. |
| Color | White (per specification). Suppliers also report off-white to light yellow. |
| Odor (includes odor threshold) | Odorless (one supplier); not determined by others. Odor threshold: no applicable information available. |

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| Melting point/freezing point | Melting point: 147–153 °C (per 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 | No applicable information available. |
| Kinematic viscosity | Not applicable (solid). |
| Solubility | Water: 0.0007 g/L at 20 °C (practically insoluble).<br>DMF: 1 mmol dissolves in 2 mL to a clear solution (per specification). |
| Partition coefficient n-octanol/water (log value) | log Pow: 2.8 at 20 °C. |
| 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

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| Reactivity | None known, based on information available. |
| Chemical stability | Stable under recommended storage conditions (refrigerated, dry, tightly closed). Moisture sensitive. |
| Possibility of hazardous reactions, including those associated with foreseeable emergencies | No hazardous reactions known under normal processing. |
| Conditions to avoid (e.g., static discharge, shock, or vibration) | Heat, flames, sparks and other ignition sources; extremes of temperature and direct sunlight; moisture; dust formation; contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents, strong acids. |
| Hazardous decomposition products | Carbon monoxide, carbon dioxide, nitrogen oxides. |

## Section 11. Toxicological information

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| Information on the likely routes of exposure (inhalation, ingestion, skin, and eye contact) | Ingestion, skin contact, eye contact and inhalation of dust. |

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| Symptoms related to the physical, chemical, and toxicological characteristics | Ingestion: harmful if swallowed.<br>Skin: may cause an allergic skin reaction (rash, itching, swelling).<br>Eyes and respiratory tract: no data are available on irritation. |
| Delayed and immediate effects and also chronic effects from short- and long-term exposure | Immediate: harmful if swallowed.<br>Delayed: skin sensitization; after sensitization, later contact with small amounts may cause an allergic skin reaction.<br>Chronic: no data available. The toxicological properties have not been fully investigated. |
| Numerical measures of toxicity (such as acute toxicity estimates) | Oral LD50 (rat): > 200 mg/kg.<br>Dermal LD50 (rat): > 2,000 mg/kg (OECD Test Guideline 402).<br>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 acute oral toxicity and skin sensitization classifications follow the consensus of US and Canadian suppliers' safety data sheets; no sensitization test data (e.g. local lymph node assay) for this substance was found. |

## Section 12. Ecological information

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| Ecotoxicity (aquatic and terrestrial, where available) | Fish: LC50 (Danio rerio, zebra fish) 2.4 mg/L, 96 h; LC100 3.7 mg/L, 96 h.<br>Invertebrates: EC50 (Daphnia magna) > 4.6 mg/L, 48 h.<br>Algae: EC50 (Desmodesmus subspicatus) > 6 mg/L, 72 h.<br>Toxic to aquatic life with long lasting effects. |
| Persistence and degradability | Not readily biodegradable (15% biodegradation, OECD Test Guideline 301). |
| Bioaccumulative potential | No data available. |
| Mobility in soil | Not likely to be mobile in the environment because of its low water solubility. |
| Other adverse effects (such as hazardous to the ozone layer) | Toxic to aquatic life with long lasting effects. Avoid release to the environment; do not let the product enter drains or surface water. |

## Section 13. Disposal considerations

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| 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. 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: regulated; see 14.a–14.e.

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| UN number | • IATA: UN3077 |
| UN proper shipping name | • IATA: Environmentally hazardous substance, solid, n.o.s. (N-(9-fluorenylmethoxycarbonyloxy)succinimide) |
| Transport hazard class(es) | • IATA: 9 |
| Packing group, if applicable | • IATA: III |
| Environmental hazards (e.g., Marine pollutant (Yes/No)) | • IATA: not a marine pollutant |
| 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 | Avoid release to the environment if a package is damaged. For international transport, packages containing more than 5 kg require the environmentally hazardous substance mark. |

## Section 15. Regulatory information

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| Safety, health and environmental regulations specific for the product in question | TSCA: The chemicals shipped by P3 BioSystems are not subject to TSCA.<br>SARA 302: no extremely hazardous substances.<br>SARA 313: no components subject to reporting.<br>SARA 311/312: see the classification in Section 2.<br>CERCLA: contains no substances regulated as hazardous substances (40 CFR 302).<br>California Proposition 65: contains no Proposition 65 chemicals. |

## Section 16. Other information, including date of preparation or last revision

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| 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.