

Safety Data Sheet per OSHA HazCom 2012

| 1 | 1 Identification<br>Product identifier  |                           |
|---|---|---------------------------|
|   | Product name: <u>3-(Boc-amino)-3-phenylpropionic acid</u>   |                           |
|   | Stock number: L19802<br>CAS Number:<br>14676-01-8   |                           |
|   | Relevant identified uses of the substance or mixture and uses advised against.<br>Identified use: SU24 Scientific research and development  |                           |
|   | Details of the supplier of the safety data sheet<br>Manufacturer/Supplier:<br>Alfa Aesar  |                           |
|   | Thermo Fisher Scientific Chemicals, Inc.<br>30 Bond Street  |                           |
|   | Ward Hill, MA 01835-8099<br>Tel: 800-343-0660<br>Fax: 800-322-4757  |                           |
|   | Fax: 800-322-4757<br>Email: tech@alfa.com<br>www.alfa.com   |                           |
|   | Information Department: Health, Safety and Environmental Department<br>Emergency telephone number:  | 0790                      |
| - | During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-(  | JI 69.                    |
| 2 | 2 Hazard(s) identification<br>Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)<br>The substance is not classified according to the Globally Harmonized System (GHS).<br>Hazards not otherwise classified No information known.                  |                           |
|   | Label elements<br>GHS label elements Not applicable<br>Hazard pictograms Not applicable   |                           |
|   | Signal word Not applicable<br>Hazard statements Not applicable  |                           |
|   | WHMIS classification Not controlled<br>Classification system  |                           |
|   | HMIS ratings (scale 0-4)<br>(Hazardous Materials Identification System)   |                           |
|   | HEALTH       I         FIRE       I         FRACTIVITY       Physical Hazard = 1  |                           |
|   | Other hazards<br>Results of PBT and vPvB assessment   |                           |
| _ | PBT: Not applicable.  |                           |
| 3 | 3 Composition/information on ingredients  |                           |
|   | Chemical characterization: Substances<br>CAS# Description:<br>14676-01-8 3-(Boc-amino)-3-phenylpropionic acid   |                           |
| 4 | First-aid measures  |                           |
|   | Description of first aid measures<br>After inhalation   |                           |
|   | Supply fresh air. If required, provide artificial respiration. Keep patient warm.<br>Seek immediate medical advice.   |                           |
|   | After skin contact<br>Immediately wash with water and soap and rinse thoroughly.<br>Seek immediate medical advice.  |                           |
|   | After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.<br>After swallowing Seek medical treatment.  |                           |
|   | Information for doctor<br>Most important symptoms and effects, both acute and delayed No further relevant information available.<br>Indication of any immediate medical attention and special treatment needed No further relevant information available.                           |                           |
| 5 | 5 Fire-fighting measures  |                           |
| J | Extinguishing media   |                           |
|   | Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.<br>Special hazards arising from the substance or mixture<br>If this product is involved in a fire, the following can be released: |                           |
|   | Carbon monoxide and carbon dioxide<br>Nitrogen oxides (NOx)<br>Advice for firefighters  |                           |
|   | Advice for interighters Protective equipment: Wear self-contained respirator.   |                           |
|   | Wear fully protective impervious suit.  |                           |
| 6 | 6 Accidental release measures<br>Personal precautions, protective equipment and emergency procedures  |                           |
|   | Wear protective equipment. Keep unprotected persons away.   |                           |
|   | Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.<br>Methods and material for containment and cleaning up: Pick up mechanically.<br>Prevention of secondary hazards: No special measures required.            |                           |
|   | Prevention of secondary hazards: No special measures required.<br>Reference to other sections<br>See Section 7 for information on safe handling   |                           |
|   | See Section 8 for information on personal protection equipment.   | (Contd. on page 2)<br>USA |
|   |   |                           |

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| See Section 13 for disposal information | on. |
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| See Section 13 for disposal information.   |  | (Conta. of page 1) |  |  |
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| 7 Handling and storage   |  |                    |  |  |
| Handling<br>Precautions for safe handling<br>Keep container tightly sealed.<br>Store in cool, dry place in tightly closed containers.<br>Information about protection against explosions and fires: No information known.  |  |                    |  |  |
| Conditions for safe storage, including<br>Storage  |  |                    |  |  |
| Requirements to be met by storerooms and receptacles: No special requirements.<br>Information about storage in one common storage facility: Store away from oxidizing agents.<br>Further information about storage conditions:<br>Keep container tightly sealed.<br>Store in cool, dry conditions in well sealed containers.<br>Specific end use(s) No further relevant information available.   |  |                    |  |  |
| 8 Exposure controls/personal protection<br>Additional information about design of technical systems:<br>Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.  |  |                    |  |  |
| Control parameters<br>Components with limit values that req<br>Additional information: No data   | Control parameters<br>Components with limit values that require monitoring at the workplace: Not required. |                    |  |  |
| Exposure controls<br>Personal protective equipment<br>General protective and hygienic measures<br>The usual precautionary measures for handling chemicals should be followed.<br>Keep away from foodstuffs, beverages and feed.<br>Remove all soiled and contaminated clothing immediately.<br>Wash hands before breaks and at the end of work.<br>Maintain an ergonomically appropriate working environment.  |  |                    |  |  |
| Breathing equipment: Use suitable respirator when high concentrations are present.<br>Protection of hands:<br>Impervious gloves<br>Check protective gloves prior to each use for their proper condition.<br>The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.<br>Penetration time of glove material (in minutes) Not determined<br>Eye protection: Safety glasses<br>Body protection: Protective work clothing. |  |                    |  |  |
| 9 Physical and chemical properties   |  |                    |  |  |
| Information on basic physical and chemical properties<br>General Information   |  |                    |  |  |
| Appearance:<br>Form:   | Powder   |                    |  |  |
| Color:<br>Odor:  | White<br>Not determined  |                    |  |  |
| Odor threshold:<br>pH-value:   | Not determined.<br>Not applicable.   |                    |  |  |
| Change in condition<br>Melting point/Melting range:<br>Boiling point/Boiling range:<br>Sublimation temperature / start:  | 142-144 °C (288-291 °F) (dec)<br>Not determined<br>Not determined  |                    |  |  |
| Flash point:<br>Flammability (solid, gaseous)<br>Ignition temperature:<br>Decomposition temperature:<br>Auto igniting:   | Not applicable<br>Not determined.<br>Not determined<br>Not determined<br>Not determined.                   |                    |  |  |
| Danger of explosion:<br>Explosion limits:<br>Lower:  | Product does not present an explosion hazard.<br>Not determined  |                    |  |  |
| Upper:<br>Vapor pressure:<br>Density:<br>Relative density<br>Vapor density   | Not determined<br>Not applicable.<br>Not determined<br>Not determined.<br>Not applicable.                  |                    |  |  |
| Evaporation rate<br>Solubility in / Miscibility with<br>Water:   | Not applicable.<br>Insoluble   |                    |  |  |
| Partition coefficient (n-octanol/water):<br>Viscosity:<br>dynamic:<br>kinematic:   | Not determined.<br>Not applicable.<br>Not applicable.<br>No further relevant information available.        |                    |  |  |
| Other information  | No further relevant information available.   |                    |  |  |
| 10 Stability and reactivity<br>Reactivity No information known.<br>Chemical stability Stable under recommended storage conditions.<br>Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.<br>Possibility of hazardous reactions No dangerous reactions known<br>Conditions to avoid No further relevant information available.<br>Incompatible materials: Oxidizing agents  |  |                    |  |  |

Conditions to avoid No further relevant ini Incompatible materials: Oxidizing agents Hazardous decomposition products: Carbon monoxide and carbon dioxide Nitrogen oxides

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| 11 Toxicological information  |  |  |  |  |
| Information on toxicological effects  |  |  |  |  |
| Acute toxicity: No effects known.<br>LD/LC50 values that are relevant for classification: No data   |  |  |  |  |
| Skin irritation or corrosion: May cause irritation  |  |  |  |  |
| Eye irritation or corrosion: May cause irritation<br>Sensitization: No sensitizing effects known.   |  |  |  |  |
| Germ cell mutagenicity: No effects known.   |  |  |  |  |
| Carcinogenicity: No classification data on carcinogenic proper<br>Reproductive toxicity: No effects known   | ties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.   |  |  |  |
| Reproductive toxicity: No effects known.<br>Specific target organ system toxicity - repeated exposure: No effects known.  |  |  |  |  |
| Specific target organ system toxicity - single exposure: No Aspiration hazard: No effects known.  | effects known.   |  |  |  |
| Subacute to chronic toxicity: No effects known  | de las the earth and alwayin to visit, of this as he taken is not fully longing  |  |  |  |
| Additional toxicological information. To the best of our know   | ledge the acute and chronic toxicity of this substance is not fully known.   |  |  |  |
| 12 Ecological information   |  |  |  |  |
| Toxicity<br>Aquatic toxicity: No further relevant information available.  |  |  |  |  |
| Persistence and degradability No further relevant information   | available.   |  |  |  |
| Bioaccumulative potential No further relevant information ava<br>Mobility in soil No further relevant information available.  | ilable.  |  |  |  |
| Additional ecological information:  |  |  |  |  |
| General notes:<br>Do not allow material to be released to the environment without   | proper governmental permits  |  |  |  |
| Avoid transfer into the environment.  | proper gerenning porting.  |  |  |  |
| Results of PBT and vPvB assessment<br>PBT: Not applicable.  |  |  |  |  |
| vPvB: Not applicable.<br>Other adverse effects No further relevant information available  |  |  |  |  |
|   | ź.   |  |  |  |
| 13 Disposal considerations  |  |  |  |  |
| Waste treatment methods   |  |  |  |  |
| Recommendation Consult state, local or national regulations to<br>Uncleaned packagings:   |  |  |  |  |
| Recommendation: Disposal must be made according to officia  | l regulations.   |  |  |  |
| 14 Transport information  |  |  |  |  |
| Not a hazardous material for transportation.  |  |  |  |  |
| UN-Number<br>DOT, IMDG, IATA  | None   |  |  |  |
| UN proper shipping name   | None   |  |  |  |
| DOT, IMDG, IATA   | None   |  |  |  |
| Transport hazard class(es)  |  |  |  |  |
| DOT, ADR, IMDG, IATA<br>Class   | None   |  |  |  |
| Packing group<br>DOT, IMDG, IATA  |  |  |  |  |
|   | None   |  |  |  |
| Environmental hazards:  | Not applicable.  |  |  |  |
| Special precautions for user<br>Transport in bulk according to Annex II of MARPOL73/78 a  | Not applicable.  |  |  |  |
| Transport in bulk according to Annex II of MARPOL 13/18 al  | Not dangerous according to the above specifications.   |  |  |  |
| DOT   | not dangerous according to the above specifications.   |  |  |  |
| Marine Pollutant (DOT):   | No   |  |  |  |
|   |  |  |  |  |
| 15 Regulatory information   |  |  |  |  |
| Safety, health and environmental regulations/legislation specific for the substance or mixture  |  |  |  |  |
| GHS label elements Not applicable<br>Hazard pictograms Not applicable   |  |  |  |  |
| Signal word Not applicable<br>Hazard statements Not applicable  |  |  |  |  |
| National regulations  |  |  |  |  |
| This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically gualified individual as defined by TSCA. This |  |  |  |  |
| product must not be used for commercial purposes or in formulations for commercial purposes.  |  |  |  |  |
| California Proposition 65   | SARA Section 313 (specific toxic chemical listings) Substance is not listed.   |  |  |  |
| Prop 65 - Chemicals known to cause cancer Substance is not listed.  |  |  |  |  |
| Prop 65 - Developmental toxicity Substance is not listed.<br>Prop 65 - Developmental toxicity, female Substance is not listed.  |  |  |  |  |
| Prop 65 - Developmental toxicity, male Substance is not listed.<br>Information about limitation of use: For use only by technically qualified individuals.  |  |  |  |  |
| Other regulations, limitations and prohibitive regulations  |  |  |  |  |
| Substance of Very High Concern (SVHC) according to the P<br>The conditions of restrictions according to Article 67 and A  | Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.<br>The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the |  |  |  |
| market and use must be observed.  |  |  |  |  |
| Substance is not listed.<br>Annex XIV of the REACH Regulations (requiring Authorisat  | ion for use) Substance is not listed.  |  |  |  |
| Chemical safety assessment: A Chemical Safety Assessmen   | t has not been carried out.  |  |  |  |
|   |  |  |  |  |

## Product name: 3-(Boc-amino)-3-phenylpropionic acid

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16 Other information Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

conformance with this Material Safety Data Sheet, or in con Department issuing SDS: Global Marketing Department Date of preparation / last revision 11/24/2015 / -Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Maritime Code for Dangerous Goods DOT: US Department of Transportation CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Information System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal dose, 50 percent LD50: Lethal dose, 50 percent US0: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)

USA