

Safety Data Sheet per OSHA HazCom 2012

|  | Reviewed on 04/17/2012          |
|--|---------------------------------|
| 1 Identification   |                                 |
| Product identifier<br>Product name: <b>3-(Cyclopentylcarbamoyl)benzeneboronic acid</b>   |                                 |
| Stock number: H53125   |                                 |
| CAS Number:<br>850567-24-7   |                                 |
| 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:   |                                 |
| Alfa Aesar<br>Thermo Fisher Scientific Chemicals, Inc.<br>30 Bond Street   |                                 |
| Ward Hill, MA 01835-8099   |                                 |
| Tel: 800-343-0660<br>Fax: 800-322-4757<br>Email: tech@alfa.com   |                                 |
| Email. lech wana.com<br>www.alfa.com<br>Information Department: Health, Safety and Environmental Department  |                                 |
| Emergency telephone number:<br>During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call C   | Correction 21 at (PEE) 028-0780 |
|  | ,arecnem 24 at (000) 920-0709.  |
| 2 Hazard(s) identification<br>Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)   |                                 |
|  |                                 |
| $\sim$   |                                 |
| Skin Irrit. 2 H315 Causes skin irritation.<br>Eye Irrit. 2A H319 Causes serious eye irritation.  |                                 |
| STOT SE 3 H335 May cause respiratory irritation.<br>Hazards not otherwise classified No information known.   |                                 |
| Label elements<br>GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)   |                                 |
| Hazard pictograms  |                                 |
| GHS07  |                                 |
| Signal word Warning         Hazard statements         H315 Causes skin irritation.         H319 Causes serious eye irritation.         H335 May cause respiratory irritation.         H335 May cause respiratory irritation.         Precautionary statements         P261       Avoid breathing dust/fume/gas/mist/vapours/spray.         P280       Wear protective gloves/protective clothing/eye protection/face protection.         P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and e         P304+P340       IF INHALED: Remove person to fresh air and keep comfortable for breathing.         P405       Store locked up.         P501       Dispose of contents/container in accordance with local/regional/national/international regulations.         WHMIS classification       D2B - Toxic material causing other toxic effects | asy to do. Continue rinsing.    |
| $(\mathbf{J})$   |                                 |
| Classification system<br>HMIS ratings (scale 0-4)<br>(Hazardous Materials Identification System)   |                                 |
| HEALTH I Health (acute effects) = 1<br>FIRE I Flammability = 1   |                                 |
| REACTIVITY D Physical Házard = 1<br>Other hazards  |                                 |
| Results of PBT and vPvB assessment<br>PBT: Not applicable.<br>vPvB: Not applicable.  |                                 |
| 3 Composition/information on ingredients   |                                 |
| Chemical characterization: Substances  |                                 |
| <b>CAS# Description:</b><br>850567-24-7 3-(Cyclopentylcarbamoyl)benzeneboronic 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.   |                                 |
| Seek immediate medical advice.<br>After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.   |                                 |
| After swallowing Seek medical treatment.   | (Contd. on page 2)              |
|  | USA -                           |
|  |                                 |

## Product name: 3-(Cyclopentylcarbamoyl)benzeneboronic acid

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|---|---|--------------------|
| Information for doctor<br>Most important symptoms and effects, both a<br>Indication of any immediate medical attention  | acute and delayed No further relevant information available.<br>n and special treatment needed No further relevant information available.                             |                    |
| 5 Fire-fighting measures  |   |                    |
| Extinguishing media   | , extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.<br>or mixture<br>can be released:                               |                    |
| Protective equipment:<br>Wear self-contained respirator.<br>Wear fully protective impervious suit.  |   |                    |
| 6 Accidental release measures   |   |                    |
| Personal precautions, protective equipment of<br>Wear protective equipment. Keep unprotected p<br>Ensure adequate ventilation<br>Environmental precautions: Do not allow mate<br>Methods and material for containment and cl<br>Prevention of secondary hazards: No special<br>Reference to other sections<br>See Section 7 for information on safe handling<br>See Section 8 for information on personal protect<br>See Section 13 for disposal information. | ersons away.<br>erial to be released to the environment without proper governmental permits.<br><b>leaning up:</b> Ensure adequate ventilation.<br>measures required. |                    |
| 7 Handling and storage<br>Handling<br>Precautions for safe handling<br>Keep container tightly sealed.<br>Store in cool, dry place in tightly closed contained<br>Ensure good ventilation at the workplace.  |   |                    |
| Information about protection against explosi<br>Conditions for safe storage, including any in   |   |                    |
| Storage<br>Requirements to be met by storerooms and I   | receptacles: No special requirements.<br>torage facility: Store away from oxidizing agents.<br>s:   |                    |
|   | <b>lical systems:</b><br>In d for hazardous chemicals and having an average face velocity of at least 100 feet per minute.  |                    |
| Control parameters<br>Components with limit values that require me<br>The product does not contain any relevant quan<br>Additional information: No data   | onitoring at the workplace:<br>tities of materials with critical values that have to be monitored at the workplace.   |                    |
| Exposure controls<br>Personal protective equipment<br>General protective and hygienic measures  |   |                    |
| The usual precautionary measures for handling<br>Keep away from foodstuffs, beverages and feed<br>Remove all soiled and contaminated clothing im<br>Wash hands before breaks and at the end of wc   | l.<br>Imediately.<br>rk   |                    |
| Avoid contact with the eyes and skin.<br>Maintain an ergonomically appropriate working e<br>Breathing equipment: Use suitable respirator v<br>Protection of hands:  | environment.<br>when high concentrations are present.   |                    |
| Impervious aloves   | eir proper condition.<br>Is on the material, but also on quality. Quality will vary from manufacturer to manufacturer.<br><b>s)</b> Not determined                    |                    |
| 9 Physical and chemical properties  |   |                    |
| Information on basic physical and chemical  <br>General Information<br>Appearance:  | properties  |                    |
| Form: Solid<br>Color: White<br>Odor: Not de   | termined  |                    |
| Odor threshold: Not de  | termined.   |                    |
| pH-value: Not ap Change in condition  | plicable.   |                    |
| Melting point/Melting range: Not de<br>Boiling point/Boiling range: Not de<br>Sublimation temperature / start: Not de<br>Flammability (solid, gaseous) Not de<br>Junition temperature: Not de   | termined<br>termined<br>termined.<br>termined.<br>termined.   |                    |
| Decomposition temperature: Not de   | termined  | (Contd. on page 3) |

## Product name: 3-(Cyclopentylcarbamoyl)benzeneboronic acid

Page 3/4 Printing date 11/24/2015 Reviewed on 04/17/2012

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|--|---|
|  | lot determined.   |
| Danger of explosion: A<br>Explosion limits:  | lot determined.   |
|  | lot determined  |
|  | lot determined  |
| Vapor pressure: A<br>Density: A  | lot applicable.<br>lot determined   |
| Relative density   | lot determined.   |
| Vapor density A  | lot applicable.   |
| Evaporation rate<br>Solubility in / Miscibility with   | lot applicable.   |
| Water: A   | lot determined  |
| Partition coefficient (n-octanol/water): N   | ot determined.  |
| Viscosity:<br>dynamic: A   | lot applicable.   |
| kinematic: ۸   | lot applicable.   |
|  | lo further relevant information available.  |
| 0 Stability and reactivity   |   |
| Reactivity No information known.   |   |
| Chemical stability Stable under recomme  | nded storage conditions.<br><b>be avoided:</b> Decomposition will not occur if used and stored according to specifications. |
| Possibility of hazardous reactions Reac  | ts with strong oxidizing agents   |
| Conditions to avoid No further relevant in   | formation available.  |
| Incompatible materials: Oxidizing agents<br>Hazardous decomposition products:  |   |
| Carbon monoxide and carbon dioxide   |   |
| Nitrogen oxides<br>Boron oxide   |   |
| Boron oxide  |   |
| 1 Toxicological information  |   |
| Information on toxicological effects<br>Acute toxicity: No effects known.  |   |
| LD/LC50 values that are relevant for class   | ssification: No data  |
| Skin irritation or corrosion: Causes skin  |   |
| Eve irritation or corrosion: Causes serior   | us eve irritation   |
| Sensitization: No sensitizing effects know<br>Germ cell mutagenicity: No effects know  | n.<br>n   |
| Carcinogenicity: EPA-I: Data are inadegu   | nate for an assessment of human carcinogenic potential.   |
| <b>Reproductive toxicity:</b> No effects known.  |   |
| Specific target organ system toxicity - n  | epeated exposure: No effects known.<br>ingle exposure: May cause respiratory irritation.                                    |
| Aspiration hazard. No effects known  |   |
| Subacute to chronic toxicity: No effects   | known.  |
| Additional toxicological information: To   | the best of our knowledge the acute and chronic toxicity of this substance is not fully known.                              |
| 2 Ecological information   |   |
| Toxicity   |   |
| Aquatic toxicity: No further relevant inform   | nation available.   |
| Persistence and degradability No further   | relevant information available.<br>Nyant information available  |
| Bioaccumulative potential No further rele<br>Mobility in soil No further relevant information  |   |
| Additional ecological information:   |   |
| General notes:   | environment without proper governmental permits   |
| Do not allow undiluted product or large que  | environment without proper governmental permits.<br>antities to reach ground water, water course or sewage system.          |
| Avoid transfer into the environment.   |   |
| <b>Results of PBT and vPvB assessment</b><br><b>PBT:</b> Not applicable.   |   |
| vPvB: Not applicable.  |   |
| Other adverse effects No further relevant  | information available.  |
| 3 Disposal considerations  |   |
| Waste treatment methods  |   |
| Recommendation Consult state, local or r   | national regulations to ensure proper disposal.   |
| Uncleaned packagings:<br>Recommendation: Disposal must be mad  | e according to official regulations.  |
|  |   |
| 4 Transport information  |   |
| 4 Transport information<br>UN-Number   |   |
| UN-Number<br>DOT, ADN, IMDG, IATA  | Not applicable  |
| UN-Number<br>DOT, ADN, IMDG, IATA  |   |
| UN-Number<br>DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA   | Not applicable<br>Not applicable  |
| DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA<br>Transport hazard class(es)  |   |
| UN-Number<br>DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA   |   |
| UN-Number<br>DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA<br>Transport hazard class(es)<br>DOT, ADR, ADN, IMDG, IATA<br>Class   | Not applicable<br>Not applicable  |
| UN-Number<br>DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA<br>Transport hazard class(es)<br>DOT, ADR, ADN, IMDG, IATA<br>Class<br>Packing group<br>DOT, IMDG, IATA   | Not applicable<br>Not applicable<br>Not applicable  |
| UN-Number<br>DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA<br>Transport hazard class(es)<br>DOT, ADR, ADN, IMDG, IATA<br>Class<br>Packing group<br>DOT, IMDG, IATA<br>Environmental hazards:                                 | Not applicable<br>Not applicable<br>Not applicable<br>Not applicable.   |
| UN-Number<br>DOT, ADN, IMDG, IATA<br>UN proper shipping name<br>DOT, ADN, IMDG, IATA<br>Transport hazard class(es)<br>DOT, ADR, ADN, IMDG, IATA<br>Class<br>Packing group<br>DOT, IMDG, IATA<br>Environmental hazards:<br>Special precautions for user | Not applicable<br>Not applicable<br>Not applicable  |

(Contd. on page 4)

| Product name: 3-(Cyclopentylcarbamoyl)ber  | nzeneboronic acid  |
|--|--|
|  | (Contd. of page 3)   |
| Transport/Additional information:  |  |
| DOT<br>Marine Pollutant (DOT):   | No   |
| UN "Model Regulation":   | -  |
| 1. Demulatory information  |  |
| 15 Regulatory information<br>Safety, health and environmental regulations/leg<br>GHS label elements The product is classified and<br>Hazard pictograms   | egislation specific for the substance or mixture<br>labeled in accordance with 29 CFR 1910 (OSHA HCS)  |
| GHS07  |  |
| <ul> <li>P405 Store locked up.</li> <li>P501 Dispose of contents/container in</li> <li>National regulations</li> <li>This product is not listed in the U.S. Environmental to research and development only. This product mup not be used for commercial purposes</li> <li>This product is not listed on the Canadian Domestic</li> <li>SARA Section 313 (specific toxic chemical listin California Proposition 65</li> <li>Prop 65 - Chemicals known to cause cancer Sub Prop 65 - Developmental toxicity, female Substance is not limitation of use: For use only Other regulations, limitations and prohibitive regulations, limitations and prohibitive regulations of restrictions according to Artic market and use must be observed.</li> <li>Substance is not listed.</li> <li>Annex XIV of the REACH Regulations (requiring Chemical safety assessment: A Chemical Safety</li> </ul> | ve clothing/eyé protection/face protection.<br>vith water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>o fresh air and keep comfortable for breathing.<br>n accordance with local/regional/national/international regulations.<br>I Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricte<br>ust be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This<br>s or in formulations for commercial purposes.<br>ic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).<br><b>ngs</b> ) Substance is not listed.<br>ot listed.<br>ance is not listed.<br>ot listed.<br>y by technically qualified individuals.<br>Substance and listed.<br>of the REACH Regulations (EC) No. 1907/2006. Substance is not listed.<br><b>ice 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the<br/>g Authorisation for use)</b> Substance is not listed. |
| information to ensure proper use and protect the he<br>conformance with this Material Safety Data Sheet, of<br>Department issuing SDS: Global Marketing Depar<br>Date of preparation / last revision 11/24/2015 / -  |  |
| ADK: Accora europeen sur le transport des marchanolses dangereu<br>DOT: US Department of Transportation<br>CAS: Chemical Abstracts Service (division of the American Chemica<br>HMIS: Hazardous Materials Identification System (USA)<br>WHMIS: Workplace Hazardous Materials Information System (Cana<br>LC50: Lethal concentration, 50 percent<br>LD50: Lethal dose, 50 percent<br>vPvB: very Persistent and very Bioaccumulative<br>vPCB: very Persistent and very Bioaccumulative<br>ACGIH: American Conference of Governmental Industrial Hygienists<br>OSHA: Occupational Safety and Health Administration (USA)<br>MTP: National, Toxicology Program (USA)  | uses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)<br>cal Society)<br>ada)<br>ts (USA)   |

INP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)