



1 Identification Product identifier Product name: 10-Bromo-1-decanol Stock number: B21483 CAS Number: 53463-68-6 EC number: Relevant identified uses of the substance or mixture and uses advised against. Identified use: SU24 Scientific research and development Details of the supplier of the safety data sheet Manufacturer/Supplier: Alfa Aesar Thermo Fisher Scientific Chemicals, Inc. Inerrito Fisher Scheman C. 30 Bond Street Ward Hill, MA 01835-8099 Tel: 800-343-0660 Fax: 800-322-4757 Email: tech @alfa.com www.alfa.com Information Department: Health, Safety and Environmental Department Emergency telephone number: During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789. 2 Hazard(s) identification Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS) ! GHS07 Skin Irrit. 2 H315 Causes skin irritation. Eye Irrit. 2A H319 Causes serious eye irritation. STOT SE 3 H335 May cause respiratory irritation. Hazards not otherwise classified No information known. Label elements 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. 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 easy to do. Continue rinsing. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. P405 WHMIS classification D2B - Toxic material causing other toxic effects Ţ Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 1Flammàbility = 1 TIVITY 1 Physical Hazard = 1 Other hazards Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable 3 Composition/information on ingredients Chemical characterization: Substances CAS# Description: 53463-68-6 10-Bromo-1-decanol Identification number(s): EC number: 258-572-4 4 First-aid measures Description of first aid measures After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. After skin contact Immediately wash with water and soap and rinse thoroughly.

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(Contd. of page 1) Seek immediate medical advice After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special freatment needed No further relevant information available. 5 Fire-fighting measures Extinguishing media Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide Hydrogen bromide (HBr) Advice for firefireture Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit. 6 Accidental release measures Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Ensite adequate ventulation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation. **Prevention of secondary hazards:** No special measures required. **Reference to other sections** See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information. 7 Handling and storage Handling Precautions for safe handling Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Information about protection against explosions and fires: No information known. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Store away from oxidizing agents. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Specific end use(s) No further relevant information available. 8 Exposure controls/personal protection Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Control parameters Components with limit values that require monitoring at the workplace: Not required. Additional information: No data Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Protection of hands: Impervious gloves The selection of suitable gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Eye protection: Safety glasses Body protection: Protective work clothing. 9 Physical and chemical properties Information on basic physical and chemical properties **General Information** Appearance: Form: Color: Liauid Pale vellow Odor: Not determined Odor threshold: Not determined pH-value: Not determined. Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start: Not determined 165-169 °C (329-336 °F) (10mm Hg) Not determined Flash point: > 110 °C (> 230 °F)

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| Product name: 10-Bromo-1-decanol   |  |                       |
|  |  | (Contd. of page 2)    |
| Flammability (solid, gaseous)  | Not determined.  | (Ooma. or page _/     |
| Ignition temperature:  | Not determined   |                       |
| Decomposition temperature:<br>Auto igniting:   | Not determined<br>Not determined.  |                       |
|  | Product does not present an explosion hazard.  |                       |
| Danger of explosion:<br>Explosion limits:  |  |                       |
| Lower:   | Not determined   |                       |
| Upper:<br>Vapor pressure:  | Not determined<br>Not determined   | <b>I</b>              |
| Density at 20 °C (68 °F):  | 1.19 g/cm³ (9.931 lbs/gal)   |                       |
| Relative density `<br>Vapor density  | Not determined.<br>Not determined.   |                       |
| Evaporation rate   | Not determined.  |                       |
| Solubility in / Miscibility with<br>Water:   | Not determined   |                       |
| Partition coefficient (n-octanol/water):   |  | <b>I</b>              |
| Viscosity:   |  |                       |
| dynamic:<br>kinematic:   | Not determined.<br>Not determined.   |                       |
| Other information  | No further relevant information available.   |                       |
|  |  |                       |
| 10 Stability and reactivity  |  |                       |
| Reactivity No information known.   | the terms of terms | 1                     |
| Chemical stability Stable under recomm<br>Thermal decomposition / conditions to        | mended storage conditions.<br>to be avoided: Decomposition will not occur if used and stored according to specifications.  | 1                     |
| Possibility of hazardous reactions No  | o dangerous reactions known  | 1                     |
| Conditions to avoid No further relevant  | nt information available.  | 1                     |
| Incompatible materials: Oxidizing agen<br>Hazardous decomposition products:            | its  | 1                     |
| Carbon monoxide and carbon dioxide   |  |                       |
| Hydrogen bromide   |  |                       |
| 11 Toxicological information   |  |                       |
| Information on toxicological effects   |  | 1                     |
| Acute toxicity: No effects known.  | · ··· · · · · ·  | 1                     |
| LD/LC50 values that are relevant for c<br>Skin irritation or corrosion: Causes sk      |  | 1                     |
| Eye irritation or corrosion: Causes ser  | erious eye irritation.   | 1                     |
| Sensitization: No sensitizing effects kno  | nown   | 1                     |
| Germ cell mutagenicity: No effects kno<br>Carcinogenicity: No classification data      | own.<br>a on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.   | 1                     |
| <b>Reproductive toxicity:</b> No effects know  | NN.  | 1                     |
| Specific target organ system toxicity -  | r - repeated exposure: No effects known.   | 1                     |
| Specific target organ system toxicity -<br>Aspiration hazard: No effects known.        | r - single exposure: May cause respiratory irritation.   | 1                     |
| Subacute to chronic toxicity: No effect  | cts known.   | 1                     |
| Additional toxicological information:  | To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  |                       |
| 12 Ecological information  |  |                       |
| Toxicity   |  | 1                     |
| Aquatić toxicity: No further relevant info   |  |                       |
| Persistence and degradability No furth   | ther relevant information available.   |                       |
| Bioaccumulative potential No further re<br>Mobility in soil No further relevant inform | elevant information available.   |                       |
| Additional ecological information:   |  |                       |
| General notes:   | the environment without proper governmental permits  |                       |
| Do not allow material to be released to a<br>Do not allow undiluted product or large ( | the environment without proper governmental permits.<br>quantities to reach ground water, water course or sewage system.   |                       |
| Avoid transfer into the environment.   |  |                       |
| Results of PBT and vPvB assessment<br>PBT: Not applicable.                             |  |                       |
| vPvB: Not applicable.<br>Other adverse effects No further releva                       | · · · · · · · · · · · · · · · · · · ·  |                       |
| Other adverse effects No turther releva  | ant information available.   |                       |
| 13 Disposal considerations   |  |                       |
| Waste treatment methods  |  |                       |
| Recommendation Consult state, local o  | or national regulations to ensure proper disposal.   |                       |
| Uncleaned packagings:<br>Recommendation: Disposal must be ma                           |  |                       |
| Recommendation. Disposal mast so m   |  |                       |
| 14 Transport information   |  |                       |
| Not a hazardous material for transportati  | ion.   |                       |
| UN-Number<br>DOT, IMDG, IATA   | None   |                       |
|  |  |                       |
| UN proper shipping name<br>DOT, IMDG, IATA   | None   |                       |
| Transport hazard class(es)   |  |                       |
| DOT, ADR, IMDG, IATA   |  |                       |
| Class  | None   |                       |
| Packing group<br>DOT, IMDG, IATA   |  |                       |
|  | None<br>Not applicable   |                       |
| Environmental hazards:   | Not applicable.  |                       |
| Special precautions for user   | Not applicable.  | (Original and page 4) |
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| Product name: 10-Bromo-1-decanol  |   |
|---|---|
|   | (Contd. of page 3)  |
| Transport in bulk according to Annex II of MARPOL73/7   |   |
| Transport/Additional information:   | Not dangerous according to the above specifications.  |
| DOT<br>Marine Pollutant (DOT):  | No  |
|   |   |
| 15 Regulatory information   |   |
| Safety, health and environmental regulations/legislation<br>GHS label elements The product is classified and labeled<br>Hazard pictograms   | n specific for the substance or mixture<br>in accordance with 29 CFR 1910 (OSHA HCS)  |
|   |   |
| GHS07   |   |
| <b>Signal word</b> Warning<br><b>Hazard statements</b><br>H315 Causes skin irritation.<br>H319 Causes serious eye irritation.   |   |
| H335 May cause respiratory irritation.<br>Precautionary statements<br>P261 Avoid breathing dust/fume/gas/mist/vap   | ours/spray.   |
| P380 Wear protective gloves/protective clothil<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water<br>P304+P340 IF INHALED: Remove person to fresh a<br>P405 Store locked up.   | g/eye protection/face protection.<br>for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>ir and keep comfortable for breathing.   |
| P501 Dispose of contents/container in accord  | ance with local/regional/national/international regulations.  |
| All components of this product are listed on the Canadian N<br>SARA Section 313 (specific toxic chemical listings) Sub  | nmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.<br>Ion-Domestic Substances List (NDSL).<br>ostance is not listed.  |
| California Proposition 65<br>Prop 65 - Chemicals known to cause cancer Substance<br>Prop 65 - Developmental toxicity Substance is not listed  | is not listed.  |
| Prop 65 - Developmental toxicity, female Substance is no<br>Prop 65 - Developmental toxicity, male Substance is not   | ot listed.<br>listed.   |
| Information about limitation of use: For use only by tech   | nically qualified individuals.  |
| The conditions of restrictions according to Article 67 ai<br>market and use must be observed.   | ns<br>The REACH Regulations (EC) No. 1907/2006. Substance is not listed.<br>Ind Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the  |
| Substance is not listed.<br>Annex XIV of the REACH Regulations (requiring Author<br>Chemical safety assessment: A Chemical Safety Assess  | r <b>isation for use)</b> Substance is not listed.<br>ment has not been carried out.  |
| <b>16 Other information</b><br>Employers should use this information only as a supplemer<br>information to ensure proper use and protect the health and<br>conformance with this Material Safety Data Sheet, or in con-   | nt to other information gathered by them, and should make independent judgement of suitability of this<br>I safety of employees. This information is furnished without warranty, and any use of the product not in<br>nbination with any other product or process, is the responsibility of the user. |
| Department issuing SDS: Global Marketing Department<br>Date of preparation / last revision 11/24/2015 / -<br>Abbreviations and acronyms:<br>IMDE: International Maritime Code for Dangerous Goods   |   |
| Abbreviations and acronyms:<br>IMDG: International Maritime Code for Dangerous Goods<br>DOT: US Department of Transportation<br>IATA: International Ar Transport Association<br>EINECS: European Inventory of Existing Commercial Chemical Substances<br>CAS: Chemical Abstracts Service (division of the Amercian Chemical Society)<br>HMIS: Hazardous Materials Identification System (USA)<br>WHMIS: Workplace Hazardous Materials Information System (Canada)<br>LCG0: Lethal concentration, 50 percent<br>US0: Lethal dose, 50 percent<br>VPUB: very Persistent and very Bioaccumulative<br>ACGIH: American Conference of Governmental Industrial Hygienists (USA)<br>OSHA: Occupational Safety and Health Administration (USA)<br>NTP: National Toxicology Program (USA)<br>IARC: Intermational Agency for Research on Cancer<br>EPA: Environmental Protection Agency (USA) |   |
| wriwis: Workplace Hazardous Materials Information System (Canada)<br>LC50: Lethal concentration, 50 percent<br>LD50: Lethal dose, 50 percent<br>vPVB: very Persistent and very Bioaccumulative<br>ACGIL+ American Conference of Governmental Industrial Lucianiste (USA)  |   |
| OSHA: Occupational Safety and Health Administration (USA)<br>NTP: National Toxicology Program (USA)   |   |
| IARC: International Agency for Research on Cancer<br>EPA: Environmental Protection Agency (USA)   |   |
|   | USA   |