

Safety Data Sheet per OSHA HazCom 2012

1 Identification Product identifier Product name: 5-Bromo-2-methoxybenzaldehyde Stock number: L02209 CAS Number: 25016-01-7 EC number: 246-564-3 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) = 10 Flammàbility = 0 TIVITY 0 Physical Hazard = 0Other hazards Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable 3 Composition/information on ingredients Chemical characterization: Substances CAS# Description: 25016-01-7 5-Bromo-2-methoxybenzaldehyde Identification number(s): EC number: 246-564-3 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. (Contd. on page 2)

## Product name: 5-Bromo-2-methoxybenzaldehyde (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 Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. Reference to other sections Concentration for 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 Recautions for safe nanoing 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 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 Check protective gloves prior to each use for their proper condition. 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. **Penetration time of glove material (in minutes)** Not determined **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: Crystalline powder Pále yellow Not determined Odor: Odor threshold: Not determined pH-value: Not applicable. Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start: 116-119 °C (241-246 °F) Not determined Not determined Flash point: Flammability (solid, gaseous) Not applicable Not determined.

(Contd. on page 3)

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Ignition temperature:	Not determined	
Decomposition temperature: Auto igniting:	Not determined Not determined.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined	
Upper: Vapor pressure:	Not determined Not applicable.	
Density:	Not determined	
Relative density	Not determined.	
Vapor density Evaporation rate	Not applicable. Not applicable.	
Solubility in / Miscibility with		
Water: Partition coefficient (n-octanol/water).	Not determined	
Viscosity:		
dynamic: kinomotio:	Not applicable.	
kinematic: Other information	Not applicable. No further relevant information available.	
0 Stability and reactivity		
Reactivity No information known.	mandad starage conditions	
Thermal decomposition / conditions t	mended storage conditions. t <b>o be avoided:</b> Decomposition will not occur if used and stored according to specifications.	
Possibility of hazardous reactions No	dangerous reactions known	
Conditions to avoid No further relevant Incompatible materials: Oxidizing ager		
Hazardous decomposition products:	115	
Carbon monoxide and carbon dioxide Hydrogen bromide		
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1 Toxicological information		
Information on toxicological effects Acute toxicity: No effects known.		
LD/LC50 values that are relevant for c	:lassification: No data	
Skin irritation or corrosion: Causes sk	kin irritation.	
Eye irritation or corrosion: Causes sel		
Sensitization: No sensitizing effects kno Germ cell mutagenicity: No effects kno	JWN. nwr	
Carcinogenicity: No classification data	on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.	
<b>Reproductive toxicity:</b> No effects know	In.	
Specific target organ system toxicity Specific target organ system toxicity	<ul> <li>repeated exposure: No effects known.</li> <li>single exposure: May cause respiratory irritation.</li> </ul>	
Aspiration hazard: No effects known		
Subacute to chronic toxicity: No effect Additional toxicological information:	ts known. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
<u> </u>		
2 Ecological information Toxicity		
Aquatic toxicity: No further relevant info	ormation available.	
Persistence and degradability No furth	ier relevant information available.	
Bioaccumulative potential No further n Mobility in soil No further relevant infor	elevant information available.	
Additional ecological information:		
General notes:		
Do not allow material to be released to the Do not allow undiluted product or large (	he environment without proper governmental permits. quantities to reach ground water, water course or sewage system.	
Avoid transfer into the environment.	panines to reach ground water, water course of sewage system.	
Results of PBT and vPvB assessment	t	
PBT: Not applicable. vPvB: Not applicable.		
Other adverse effects No further releva	Int information available.	
3 Disposal considerations		
Waste treatment methods		
Recommendation Consult state, local of	or national regulations to ensure proper disposal.	
Uncleaned packagings: Recommendation: Disposal must be m	ade according to official regulations	
<b>4 Transport information</b> Not a hazardous material for transportati	ion	_
UN-Number		
DOT, IMDG, IATA UN proper shipping name	None	
	None	
DOT, IMDG, IATA		
Transport hazard class(es)		
Transport hazard class(es) DOT, ADR, IMDG, IATA	None	
Transport hazard class(es) DOT, ADR, IMDG, IATA Class	None	
Transport hazard class(es) DOT, ADR, IMDG, IATA	None	
Transport hazard class(es) DOT, ADR, IMDG, IATA Class Packing group DOT, IMDG, IATA Environmental hazards:	None Not applicable.	
Transport hazard class(es) DOT, ADR, IMDG, IATA Class Packing group DOT, IMDG, IATA	None	

oduct name: 5-Bromo-2-methoxybenzaldeh	уае
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Transport in bulk according to Annex II of MARPO	
Transport/Additional information:	Not dangerous according to the above specifications.
DOT Marine Pollutant (DOT):	No
5 Regulatory information Safety, health and environmental regulations/legis GHS label elements The product is classified and lai Hazard pictograms	slation specific for the substance or mixture beled in accordance with 29 CFR 1910 (OSHA HCS)
GHS07	
P305+P351+P338 IF IN EYES: Rinse cautiously with P304+P340 IF INHALED: Remove person to fr	st/vapours/spray. clothing/eye protection/face protection. water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. resh air and keep comfortable for breathing.
<b>National regulations</b> This product is not listed in the U.S. Environmental Pl	
Prop 65 - Chemicals known to cause cancer Subsi Prop 65 - Developmental toxicity Substance is not Prop 65 - Developmental toxicity, female Substance Prop 65 - Developmental toxicity, male Substance Information about limitation of use: For use only b Other regulations, limitations and prohibitive regulations.	listed. se is not listed. is not listed. y technically qualified individuals. ulations
Substance of Very High Concern (SVHC) accordin The conditions of restrictions according to Article market and use must be observed. Substance is not listed. Annex XIV of the REACH Regulations (requiring A	ng to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. e 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety As 6 Other information Employers should use this information only as a supp	ssessment has not been carried out.
conformance with this Material Safety Data Sheet, or	lth and safety of employees." This information is furnished without warranty, and any use of the product not in in combination with any other product or process, is the responsibility of the user.
Department issuing SDS: Global Marketing Departm 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 Transport Association EINECS: European Inventory of Existing Commercial Chemical Substa CAS: Chemical Abstracts Service (division of the American Chemical S HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada, LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent	ances Society) I)
LCSG. Lethal dose, 50 percent LDSC: Lethal dose, 50 percent vPvB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (L OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA)	USA)

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