

Safety Data Sheet per OSHA HazCom 2012

	12/2010
1 Identification	
Product identifier Product name: 4-Bromo-2-fluoropyridine	
Stock number: H27657	
CAS Number:	
128071-98-7 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.	
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)	
GHS06 Skull and crossbones	
Acute Tox. 3 H311 Toxic in contact with skin.	
GHS07	
Acute Tox. 4 H302 Harmful if swallowed.	
Acute Tox. 4 H332 Harmful if inhaled. Skin Irrit. 2 H315 Causes skin irritation.	
Eye Irrit. 2A H319 Causes serious eye irritation.	
STOT SE 3 H335 May cause respiratory irritation.	
H227 Combustible liquid. 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	
GHS06	
Signal word Danger Hazard statements	
H227 Combustible liquid. H302+H332 Harmful if swallowed or if inhaled.	
H311 Toxic in contact with skin. H315 Causes skin irritation.	
H319 Causes serious eye irritation.	
H335 May cause respiratory irritation. Precautionary statements	
P280 Wear protective gloves / protective clothing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P309 IF exposed or if you feel unwell: P310 Immediately call a POISON CENTER/doctor/	
WHMIS classification B3 - Combustible liquid	
D1B - Toxic material causing immediate and serious toxic effects D2B - Toxic material causing other toxic effects	
Classification system HMIS ratings (scale 0-4)	
(Hazardouš Materials Identification System) HEALTH Pailth (acute effects) = 2	
FIRE 2 FIRE 2 FRACTIVITY 1 Physical Hazard = 1	
Other hazards	
Results of PBT and vPvB assessment PBT: Not applicable.	
vPvB: Not applicable.	USA -

USA (Contd. on page 2)

(Contd. of page 1)

3 Composition/information on ingredients

Product name: 4-Bromo-2-fluoropyridine

Chemical characterization: Substances CAS# Description: 128071-98-7 4-Bromo-2-fluoropyridine

4 First-aid measures

Description of first aid measures

After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Şeek immediate medical advice.

After skin contact Immediately wash with water and soap and rinse thoroughly. 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 treatment 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 fluoride (HF) Nitrogen oxides (NOx) Hydrogen bromide (HBr)

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: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. Prevention of secondary hazards: Keep away from ignition sources. 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: Keep ignition sources away. Conditions for safe storage, including any incompatibilities Condutors for sale storage, including a storage storage, storage 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 lightly sealed. Store in cool, dry conditions in well sealed containers. Store in cool, dry conditions in well sealed containers.

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 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 eves and skin 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: Protection of manus. Impervious gloves Check protective 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

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Body protection: Protective work clothing

9 Ph

Body protection. Protective work clothing.				
9 Physical and chemical properties				
Information on basic physical and chemical properties General Information Appearance:				
'Form:	Liquid			
Color:	Colorless			
Odor:	Characteristic			
Odor threshold:	Not determined.			
pH-value:	Not determined.			
Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start:	Not determined Not determined Not determined			
Flash point: Flammability (solid, gaseous) Ignition temperature: Decomposition temperature: Auto igniting:	< 90 °C (< 194 °F) Not determined. Not determined Not determined Not determined.			
Danger of explosion: Explosion limits:	Product does not present an explosion hazard.			
Lower:	Not determined			
Upper:	Not determined			
Vapor pressure:	Not determined			
Density:	Not determined			
Relative density Vapor density	Not determined. Not determined.			
Evaporation rate	Not determined.			
Solubility in / Miscibility with	not actominiou.			
Water:	Not miscible or difficult to mix			
Dertition coefficient (n estanel/water				

Water:	Not miscible or difficult to mix
Partition coefficient (n-octanol/wat	
Viscosity:	
	Not data main a d
dynamic:	Not determined.
kinematic:	Not determined

determined. Not determined. No further relevant information available.

10 Stability and reactivity

Other information

Reactivity No information known. Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions to be avoided: Decomposition Possibility of hazardous reactions No dangerous reactions known Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Hazardous decomposition products:

Carbon monoxide and carbon dioxide Hydrogen fluoride Nitrogen oxides Hydrogen bromide

11 Toxicological information

Information on toxicological effects Acute toxicity: Harmful if inhaled. Harmful if swallowed. Harmful if swallowed. Toxic in contact with skin. Danger through skin absorption. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Causes skin irritation. Eye irritation or corrosion: Causes serious eye irritation. Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: No effects known. Carcinogenicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - single exposure: May cause respiratory irritation. Abjiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Subacute to chronic toxicity: No effects known. 12 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Additional ecological information: Ceneral notes: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

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USA (Contd. on page 4)

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15 Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms With the product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms With the product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard statements Hazard statements Hazard statements Hazard statements Hazard statements Hazard pictograms H31 Toxic in contact with skin. H315 Causes skin irritation. H316 Precautionary statements P280 P305 H320 H331 Causes skin irritation. H323 May cause respiratory irritation. P280 P305 P305 P303 IF exposed or if you feel unwell: P310 Immediately call a POISON CENTER/doctor/ Mational regulations This product is not listed		(Contd. of page			
UN-Number DOT, IMOS, LATA UN2810 UN proper shipping name proper shipping name proper shipping name provide (LGUID, ORGANIC, N.O.S., (4-Eromo-2-Ausropyridine)) Transport hazard class(es) Toxic LIQUID, ORGANIC, N.O.S., (4-Eromo-2-Ausropyridine)) DOT Class 6.1 Toxic substances. Class 6.1 (T) Toxic substances 6.1 (T) Toxic substances Class 6.1 (T) Toxic substances. 6.1 (T) Toxic substances Class 6.1 (T) Toxic substances. 6.1 (T) Toxic substances Class 6.1 (T) Toxic substances. 6.1 (T) (Toxic substances. Class 6.1 (T) (Toxic substances. 6.1 (T)	nt methods on Consult state, local or national regulations to ensure proper dispo kagings:	osal.			
DOT, IMOG, IATA UN2810	ormation				
UM proper shipping name DOC MDG, LATA Toxic. liquids. organic. n.o.s. (4-Bromo-2-fluoropyridine) TOXIC LIQUID: DRGANIC. N.O.S. (4-Bromo-2-fluoropyridine) TOXIC LIQUID: DRGANIC. N.O.S. (4-Bromo-2-fluoropyridine) Transport hazard class(es) DOT Off (1) Toxic substances. Labol (1) Toxic substances. Class (1) Toxic substances. Labol (1) Toxic substances. Class (1) Toxic substances. Labol (1) Toxic substances Evel Stances (1) Toxic substances Farsport in bulk according to Annex II of MARPOL7378 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOL7378 and the IBC Code Not applicable. Transport in bulk according to Annex II of MARPOL7378 and the IBC Code Not applicable. DOT Not Marine Follutant (DOT): No UW Table Regulation? UN2810, Toxic, liquids, organic, n.o.s. (4-Bromo-2-fluoropyridine), 1 VW Table Regulation? UN2810, Toxic, liquids, organic, n.o.s. (4-Bromo-2-fluoropyridine), 1	ra 1/0.	12810			
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EMS Number: F-A,S-Å Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable. Transport/Additional information: DOT Marine Pollutant (DOT): No UN "Model Regulation": UN2810, Toxic, liquids, organic, n.o.s. (4-Bromo-2-fluoropyridine), to Seety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard statements H320 - H332 Harmful if swallowed or if inhaled. H311 Toxic in contact with skin. H315 Causes skin irritation. H316 Causes serious eye irritation. H317 Causes serious eye irritation. H323 Mary Legislation be unvelix. Precautionary statements Product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this protor to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by or protective clothing. Prod 51 - Developmental toxicity,					
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Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.	ents mbustible liquid. mbustible liquid. mful if swallowed or if inhaled. tic in contact with skin. uses serious eye irritation. y cause respiratory irritation. statements Wear protective gloves / protective clothing. 38 IF IN EYES: Rinse cautiously with water for several minutes. Rer. If exposed or if you feel unwell: Immediately call a POISON CENTER/doctor/ tions not listed in the U.S. Environmental Protection Agency Toxic Substan development only. This product must be used by or directly under the t be used for commercial purposes or in formulations for commercia. 313 (specific toxic chemical listings) Substance is not listed. osition 65 inclas known to cause cancer Substance is not listed. lopmental toxicity, female Substance is not listed. lopmental toxicity, male Substance is not listed. out limitation of use: For use only by technically qualified individua. ns, limitations and prohibitive regulations of restrictions according to Article 67 and Annex XVII of the Re must be observed. t listed.	nces Control Act Chemical Substance Inventory. Use of this product is restricte ne supervision of a technically qualified individual as defined by TSCA. This I purposes. Is. (EC) No. 1907/2006. Substance is not listed. gulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the			
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	ne REACH Regulations (requiring Authorisation for use) Substar	uce is not listed. d out. (Contd. on page			

Product name: 4-Bromo-2-fluoropyridine

Page 5/5 Printing date 11/24/2015 Reviewed on 01/12/2010

(Contd. of page 4)

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 combination with any other product or process, is the responsibility of the user.
Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / Abbreviations and acronyms:
RiD: Rejelement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritume Code for Dangerous Goods
DOT: US Department of Transport Association
(ICAO)
IADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritume Code for Dangerous Goods
DOT: US Department of Transport Association
(ICAO)
IADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Air Transport Association
(ICAO)
IMDG: International Air Transport Association
(ICAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
USDA
VPHWIS: Way Persistent and very Bioaccumulative
ACGIH: American Abstractional Audininistration (USA)
NF: National Toxicology Program (USA)
IAF: Accurational Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

USA