1 Identification

Product identifier

Product name: 1-Bromopinacolone

Stock number: A10655, L03150

CAS Number: 5469-26-1

EC number: 226-794-0

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 H331 Toxic if inhaled.

GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335 May cause respiratory irritation.

H227 Combustible liquid.

Hazards not otherwise classified Lachrymator

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

GHS05 GHS06

Signal word Danger

Hazard statements

H227 Combustible liquid.

H331 Toxic if inhaled.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Precautionary statements

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.

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER/doctor/…

WHMIS classification

B3 - Combustible liquid

D1A - Very toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

Health (acute effects) = 2

Flammability = 2

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:
   5469-26-1 1-Bromopinacolone
   Identification number(s):
   EC number: 226-794-0

(Contd. of page 1)

4 First-aid measures
   Description of first aid measures
   General information
   Immediately remove any clothing soiled by the product.
   Remove breathing apparatus only after contaminated clothing has been completely removed.
   In case of irregular breathing or respiratory arrest provide artificial respiration.
   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.
   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.
   For safety reasons unsuitable extinguishing agents Water with full jet.
   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 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:
   Keep away from ignition sources.
   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.
   Ensure good ventilation at the workplace.
   Open and handle container with care.
   Information about protection against explosions and fires: Keep ignition sources away.
   Conditions for safe storage, including any incompatibilities
   Storage
   Requirements to be met by storerooms and receptacles: Refrigerate
   Information about storage in one common storage facility:
   Keep container tightly sealed.
   Information about storage conditions:
   Keep container tightly sealed.
   Protect from exposure to light.
   Refrigerate
   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.

(Contd. on page 3)
38.0.2 Store protective clothing separately. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. Breathing equipment: Use self-contained respiratory protective device in emergency situations. Protection of hands: 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. Eye protection: Tightly sealed goggles. Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance:
Form: Liquid
Color: Pale yellow
Odor: Pungent
Odor threshold: Not determined.

pH-value: Not determined.

Change in condition
Melting point/Melting range: Not determined
Boiling point/Boiling range: 189-192 °C (372-378 °F)
Sublimation temperature / start: Not determined

Flash point: 75 °C (167 °F)
Flammability (solid, gaseous) Not determined.
Ignition temperature: Not determined.
Decomposition temperature: Not determined.
Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure: Not determined
Density at 20 °C (68 °F): 1.333 g/cm³ (11.124 lbs/gal)
Relative density: Not determined.
Vapor density: Not determined.
Evaporation rate: Not determined.
Solubility in / Miscibility with Water: Not miscible or difficult to mix
Partition coefficient (n-octanol/water): Not determined.

Viscosity:
dynamic: Not determined.
kinematic: Not determined.

Other information No further relevant information available.

10 Stability and reactivity

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: No dangerous reactions known

Conditions to avoid: No further relevant information available.

Incompatible materials:
Oxidizing agents
Bases
Heat
Light

Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Hydrogen bromide

11 Toxicological information

Information on toxicological effects

Acute toxicity: Toxic if inhaled.
LD/LC50 values that are relevant for classification: No data
Eye irritation or corrosion: Causes skin irritation.
Skin irritation or corrosion: This product is a lachrymator.
Causes serious eye damage.

Sensitization: No sensitizing effects known.

Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: May cause respiratory irritation.

Aspiration hazard: No effects known.

Subacute to chronic toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
Peripheral Nerve and Sensation - flaccid paralysis without anesthesia.
Lungs, Thorax, or Respiration - dyspnea.

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
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:

General notes:
Do not allow material to be released to the environment without proper governmental permits. 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.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, IMDG, IATA UN2810

UN proper shipping name
DOT Toxic, liquids, organic, n.o.s. (1-Bromopinacolone)
IMDG, IATA TOXIC LIQUID, ORGANIC, N.O.S. (1-Bromopinacolone)

Transport hazard class(es)

DOT

Class 6.1 Toxic substances.
Label 6.1

IMDG, IATA

Class 6.1 Toxic substances.
Label 6.1

Packing group
DOT, IMDG, IATA III

Environmental hazards:
Not applicable.

Special precautions for user
EMS Number: Warning: Toxic substances F-A,S-A

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. (1-Bromopinacolone), 6.1, III

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

GHS05 GHS06

Signal word Danger

Hazard statements
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H331 Toxic if inhaled.
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Precautionary statements
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.
P309 IF exposed or if you feel unwell:
P310 Immediately call a POISON CENTER/doctor/…

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 qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.

Prop 55 - Developmental toxicity, female Substance is not listed.
Prop 55 - Developmental toxicity, male Substance is not listed.

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 REACH Regulations (EC) No. 1907/2006. Substance is not listed.

(Contd. on page 5)
Product name: 1-Bromopinacolone

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.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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.

Department issuing SDS: Global Marketing Department

Date of preparation / last revision 11/23/2015 / -

Abbreviations and acronyms:
RID: Règlement 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: International Civil Aviation Organization
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 Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: 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)