

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/26/2009

Reviewed on 06/25/2009

1 Identification of substance:**Product details:****Product name:** 2-Bromo-4-fluorophenyl isothiocyanate**Stock number:** A19464**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

2-Bromo-4-fluorophenyl isothiocyanate (CAS# 175205-35-3):
 100%

3 Hazards identification**Hazard description:**

C Corrosive

Information pertaining to particular dangers for man and environment

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	1
REACTIVITY	1

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

GHS label elements

Danger

3.1/3 - Toxic if inhaled.

3.1/4 - Harmful if swallowed.

3.1/4 - Harmful in contact with skin.



Danger

3.2/1B - Causes severe skin burns and eye damage.

Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/26/2009

Reviewed on 06/25/2009

Product name: 2-Bromo-4-fluorophenyl isothiocyanate

(Contd. of page 1)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a POISON CENTER or doctor/physician.
 Call a POISON CENTER or doctor/physician.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Specific treatment (see label).
 Specific measures (see label).
 Rinse mouth.
 Wash contaminated clothing before reuse.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

General information

Immediately remove any clothing soiled by the product.
 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

Do not induce vomiting; immediately call for medical help.
 Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents CO₂, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Sulfur oxides (SO_x)

Nitrogen oxides (NO_x)

Hydrogen cyanide (HCN)

Hydrogen bromide (HBr)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

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

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

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**Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

(Contd. on page 3)

-USA-

Material Safety Data Sheet

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Printing date 06/26/2009

Reviewed on 06/25/2009

Product name: 2-Bromo-4-fluorophenyl isothiocyanate

(Contd. of page 2)

Information about protection against explosions and fires: Keep ignition sources away.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from water/moisture.

Store away from oxidizing agents.

Further information about storage conditions:

Store under dry inert gas.

This product is moisture sensitive.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

8 Exposure controls and 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.

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

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.

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.

Material of gloves

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:**General Information**

Form:	Crystalline
Color:	Off-white
Odor:	Pungent

Change in condition

Melting point/Melting range:	36-38°C (97-100°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: Not applicable

Ignition temperature: Not determined

Decomposition temperature: 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: Not determined

Solubility in / Miscibility with

Water:	Hydrolyzes
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10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

(Contd. on page 4)

- USA -

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/26/2009

Reviewed on 06/25/2009

Product name: 2-Bromo-4-fluorophenyl isothiocyanate

(Contd. of page 3)

Materials to be avoided:

Water/moisture
Alcohols
Amines
Oxidizing agents

Dangerous reactions No dangerous reactions known**Dangerous products of decomposition:**

Carbon monoxide and carbon dioxide
Sulfur oxides (SOx)
Nitrogen oxides
Hydrogen bromide
Hydrogen cyanide (prussic acid)

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:** Corrosive effect on skin and mucous membranes.**on the eye:**

Strong corrosive effect.

Lachrymatory effect.

Sensitization: No sensitizing effects known.**Subacute to chronic toxicity:**

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Danger through skin absorption.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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

13 Disposal considerations**Product:****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****DOT regulations:****Hazard class:**

8

Identification number:

UN2923

Packing group:

III

Proper shipping name (technical name): CORROSIVE SOLID, TOXIC, N.O.S. (2-Bromo-4-fluorophenyl isothiocyanate)

(Contd. on page 5)

- USA -

Material Safety Data Sheet

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Product name: 2-Bromo-4-fluorophenyl isothiocyanate

(Contd. of page 4)

Label 8+6.1

Land transport ADR/RID (cross-border)



ADR/RID class: 8 (CT2) Corrosive substances
 Danger code (Kemler): 86
 UN-Number: 2923
 Packaging group: III
 Description of goods: 2923 CORROSIVE SOLID, TOXIC, N.O.S. (2-Bromo-4-fluorophenyl isothiocyanate)

Maritime transport IMDG:



IMDG Class: 8
 UN Number: 2923
 Label 8+6.1
 Packaging group: III
 EMS Number: F-A,S-B
 Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (2-Bromo-4-fluorophenyl isothiocyanate)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
 UN/ID Number: 2923
 Label 8+6.1
 Packaging group: III
 Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (2-Bromo-4-fluorophenyl isothiocyanate)

UN "Model Regulation": UN2923, CORROSIVE SOLID, TOXIC, N.O.S., 8 (6.1), III

15 Regulations

Product related hazard informations:

Hazard symbols:

C Corrosive

Risk phrases:

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

34 Causes burns.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

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.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use: For use only by technically qualified individuals.

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

(Contd. on page 6)

-USA-

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(Contd. of page 5)

Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

USA