

1 Identification of substance**Product details**

Trade name **4-Fluorobenzotrichloride**
Stock number: L04560

Manufacturer/Supplier: Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / Germany

E-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department: Product safety department.
Emergency information: Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240

2 Hazards identification**Hazard designation:**

C Corrosive

Information pertaining to particular dangers for man and environment

R 22 Harmful if swallowed.
 R 34 Causes burns.
 R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

GHS label elements**Danger**

H314 - Causes severe skin burns and eye damage.

**Warning**

H302 - Harmful if swallowed.

H412 - Harmful to aquatic life with long lasting effects.

Prevention:**Response:**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:**Disposal:**

P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients**Chemical characterization:****Designation: (CAS#)**

4-Fluorobenzotrichloride (CAS# 402-42-6)

Identification number(s):**EINECS Number:**

206-942-0

4 First aid measures**General information****After inhalation**

Instantly remove any clothing soiled by the product.
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.
 Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

After swallowing

Rinse opened eye for several minutes under running water. Then consult doctor.
 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 flue gases:

Can be released in case of fire:
 Carbon monoxide and carbon dioxide
 Hydrogen chloride (HCl)
 Hydrogen fluoride (HF)

Protective equipment:

Wear self-contained breathing apparatus.
 Wear full protective suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Measures for cleaning/collecting:

Do not allow material to be released to the environment without proper governmental permits.
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Use neutralizing agent.

Additional information:

Dispose of contaminated material as waste according to item 13.
 Ensure adequate ventilation.
 See Section 7 for information on safe handling
 See section 8 for information on personal protection equipment.
 See Section 13 for information on disposal.

7 Handling and storage**Handling****Information for safe handling:**

Handle under dry protective gas.
 Keep containers tightly sealed.
 Store in cool, dry place in tightly closed containers.
 Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Storage**Requirements to be met by storerooms and containers:**

No special requirements.

Information about storage in one common storage facility:

Store away from water.
 Store away from oxidizing agents.
 Store away from strong bases.

Safety Data Sheet
according to 1907/2006/EC, Article 31

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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 keep away from water.
Store in a locked cabinet or with access restricted to technical experts or their assistants.

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 critical 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 should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.

Breathing equipment:

Use breathing protection with high concentrations.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

Impervious gloves

Eye protection:

Not determined
Safety glasses
Tightly sealed safety glasses.

Face protection

Full face protection

Body protection:

Protective work clothing.

9 Physical and chemical properties:**General Information**

Form: Liquid
Colour: Colourless
Pale yellow
Smell: Not determined

Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not determined

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product is not explosive.

Critical values for explosion:

Lower: Not determined
Upper: Not determined

Steam pressure: Not determined

Density: Not determined

Solubility in / Miscibility with

Water: Not miscible or difficult to mix

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

Materials to be avoided:

Water/moisture
Oxidizing agents
Bases

Dangerous reactions:

No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide
Hydrogen chloride (HCl)
Hydrogen fluoride

11 Toxicological information**Acute toxicity:**

Corrosive effect on skin and mucous membranes.

Primary irritant effect:

Strong corrosive effect.

on the skin:

No sensitizing effect known.

on the eye:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Sensitization:

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

Additional toxicological information:**12 Ecological information:****Ecotoxicological effects:**

Harmful to aquatic organisms

Remark:**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water bodies or sewage system.
Water hazard class 2 (Self-assessment): hazardous for water.
Danger to drinking water if even small quantities leak into soil.
Do not allow material to be released to the environment without proper governmental permits.

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Trade name **4-Fluorobenzotrìchloride**

Harmful to aquatic organisms

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13 Disposal considerations

Product:
Recommendation:

Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.

Uncleaned packagings:
Recommendation:

Disposal must be made according to official regulations.

14 Transport information**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class: 8 (C3) Corrosive substances.
Kemler Number: 80
UN-Number: 3265
Packaging group: II
Label: 8
Designation of goods: 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (4-Fluorobenzotrìchloride)
Limited quantities (LQ): LQ22
Transport category: 2
Tunnel restriction code: E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 8
UN Number: 3265
Label: 8
Packaging group: II
EMS Number: F-A, S-B
Marine pollutant: No
Segregation groups: Acids
Correct technical name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (4-Fluorobenzotrìchloride)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 3265
Label: 8
Packaging group: II
Correct technical name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (4-Fluorobenzotrìchloride)

UN "Model Regulation":
UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., 8, II

15 Regulatory information**Designation according to EC guidelines:**

Code letter and hazard designation of product:



C Corrosive

Risk phrases:

22 Harmful if swallowed.
34 Causes burns.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

23 Do not breathe fumes.
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 (show the label where possible).
61 Avoid release to the environment. Refer to special instructions/safety data sheets.

National regulations

Information about limitation of use:
For use only by technically qualified individuals.
Employment restrictions concerning young persons must be observed.

Water hazard class:
Water hazard class 2 (Self-assessment): hazardous for water.

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 data specification sheet: 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

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

EINECS: European Inventory of Existing Commercial Chemical Substances

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