

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

Revision: 19.10.2010

Printing date 19.10.2010

1 Identification of substance**Product details****Trade name****Tin plating solution****Stock number:**

44074

Manufacturer/Supplier:Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-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 environmentR 22 Harmful if swallowed.
R 34 Causes burns.**GHS label elements****Danger**

H314 - Causes severe skin burns and eye damage.

**Warning**

H302 - Harmful if swallowed.

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.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Prevention:**Response:****Storage:****Disposal:****3 Composition/information on ingredients****Chemical characterization:****Designation: (CAS#)**Fluoboric acid (CAS# 16872-11-0): 5-10%
Tin fluoborate (CAS# 13814-97-6): 10-15%
Boric acid (CAS# 10043-35-3): 1-5%
Gelatin (9000-70-8): <1%
Distilled water (CAS# 7732-18-5): Balance**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.
Rinse opened eye for several minutes under running water. Then consult doctor.**After swallowing**

Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**
Special hazards caused by the material, its products of combustion or flue gases:CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Can be released in case of fire:

Metal oxide

Hydrogen fluoride (HF)

Boron oxide

Wear self-contained breathing apparatus.

Wear full protective suit.

Protective equipment:**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:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

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.

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

Unsuitable material for container: ceramic, glass

Information about storage in one common storage facility:

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store in a locked cabinet or with access restricted to technical experts or their assistants.

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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:

Fluorides (as F)	
	mg/m ³
ACGIH TLV	2.5
Austria MAK	2.5
Belgium TWA	2.5
Finland TWA	2.5
France TWA	2.5
Germany MAK	2.5
Hungary TWA	1; 2-STEL
Netherlands MAC-K	3.5
Norway TWA	0.6
Poland TWA	1; 3-STEL
Sweden NGV	2
Switzerland MAK-W	1.5; 3-KZG-W
United Kingdom TWA	2.5
Russia TWA	2
Denmark TWA	2.5
USA PEL	2.5

Tin metal, tin oxide and inorganic tin compounds, except tin hydride, as Sn

	mg/m ³
ACGIH TLV	2
Austria MAK	2
Belgium TWA	2
Denmark TWA	2
Finland TWA	2
Germany MAK	2
Hungary TWA	1; 2-STEL (skin)
Netherlands MAC-TGG	2
Norway TWA	1
Poland TWA	2
Switzerland MAK-W	2; 4-KZG-W
United Kingdom TWA	2; 4-STEL
USA PEL	2

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.
Avoid contact with the eyes and skin.
Use breathing protection with high concentrations.
Check protective gloves prior to each use for their proper condition.
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.

Breathing equipment:**Protection of hands:****Material of gloves****Eye protection:**

Safety glasses
Tightly sealed safety glasses.
Full face protection
Face protection
Protective work clothing.

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

Form:	Liquid
Colour:	Colourless
Smell:	Odourless

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 at 20°C 1.75 g/cm³

Solubility in / Miscibility with Water: Fully miscible

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

No decomposition if used and stored according to specifications.

Materials to be avoided:

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

Dangerous reactions:

Reacts with alkaline metals
Reacts with alkaline earth metals

Dangerous products of decomposition:

Metal oxide
Hydrogen fluoride
Boron oxide

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11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: Corrosive effect on skin and mucous membranes.
Irritant for skin and mucous membranes.
Strong corrosive effect.
on the eye: Irritant effect.

Sensitization: No sensitizing effect known.
Additional toxicological information: Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
IARC-3: Not classifiable as to carcinogenicity to humans.
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information:

Additional ecological information:
General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies 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 for proper disposal.
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleaning agent: Water, if necessary with cleaning agent.

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

ADR/RID-GGVS/E Class: 8 (C9) Corrosive substances.
Kemler Number: 80
UN-Number: 1760
Packaging group: III
Label: 8
Designation of goods: 1760 CORROSIVE LIQUID, N.O.S. (Fluoboric acid/Tin fluoborate)
Limited quantities (LQ) LQ7
Transport category 3
Tunnel restriction code E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 8
UN Number: 1760
Label: 8
Packaging group: III
Marine pollutant: No
Correct technical name: CORROSIVE LIQUID, N.O.S. (Fluoboric acid/Tin fluoborate)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 1760
Label: 8
Packaging group: III
Correct technical name: CORROSIVE LIQUID, N.O.S. (Fluoboric acid/Tin fluoborate)

UN "Model Regulation":

UN1760, CORROSIVE LIQUID, N.O.S., 8, III

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.**Safety phrases:**20 When using do not eat or drink.
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).**National regulations**

This product contains a product listed by the European Chemicals Agency (ECHA) as a Substance of Very High Concern (SVHC). Information concerning SVHC can be found in Annex XIV of the REACH regulation.

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

Water hazard class 1 (Self-assessment): slightly hazardous for water.

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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: Ryan P. Wilson

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

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