1 Identification
Product identifier

Product name: Ammonium fluoride

Stock number: A16279
CAS Number:
12125-01-8
EC number:
235-195-9
Index number:
009-008-00-8

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 H301 Toxic if swallowed.
Acute Tox. 3 H311 Toxic in contact with skin.
Acute Tox. 3 H331 Toxic if inhaled.

Hazard pictograms

GHS06

Signal word Danger
Hazard statements
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P263 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor...
P361 Take off immediately all contaminated clothing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311 Call a POISON CENTER/doctor...
P312 Call a POISON CENTER/doctor.../if you feel unwell.
P332 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D1A - Very toxic material causing immediate and serious toxic effects

Classification system

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

HEALTH 1 Health (acute effects) = 2
FLAMMABILITY 0 Flammability = 0
REACTIVITY 1 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:
12125-01-8 Ammonium fluoride
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**
Do not induce vomiting; immediately call for medical help.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed**

**Toxic in contact with skin.**

**Toxic if inhaled.**

**Toxic if swallowed.**

**Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents**
Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Hydrogen fluoride (HF)
Nitrogen oxides (NOx)
Ammonia

**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:**
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.

**Prevention of secondary hazards:**
No special measures required.

**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**
Handle under dry protective gas.
Keep container tightly sealed.

**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 hygroscopic.

**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.
Product name: Ammonium fluoride

Control parameters

Components with limit values that require monitoring at the workplace:
12125-01-8 Ammonium fluoride (100.0%)

PEL (USA) Long-term value: 2.5 mg/m³
REL (USA) Long-term value: 2.5 mg/m³
TLV (USA) Long-term value: 2.5 mg/m³
EL (Canada) Long-term value: 2.5 mg/m³

Ingredients with biological limit values:
12125-01-8 Ammonium fluoride (100.0%)

BEI (USA) 2 mg/L
Medium: urine
Time: prior to shift
Parameter: Fluoride (background, nonspecific)

3 mg/L
Medium: urine
Time: end of shift
Parameter: Fluoride (background, nonspecific)

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.
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.

Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

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.

Penetration time of glove material (in minutes) 480

Material of gloves Nitrile rubber, NBR
Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
Form: Crystalline
Color: White
Odor: Odorless
Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition
Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined
Flammability (solid, gaseous) Not determined
Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto Igniting: Not determined

Danger of explosion:
Explosion limits:
Lower: Not determined
Upper: Not determined
Vapor pressure: Not applicable.

Density at 20 °C (68 °F):

Bulk density at 20 °C (68 °F): 250 kg/m³
Relative density: Not determined.
Vapor density: Not applicable.
Evaporation rate: Not applicable.
Solubility in / Miscibility with
Water at 20 °C (68 °F): Soluble

Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.
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 Reacts with strong oxidizing agents
Conditions to avoid: No further relevant information available.
Incompatible materials:
Water/moisture
Oxidizing agents
Hazardous decomposition products:
Hydrogen fluoride
Nitrogen oxides
Ammonia

11 Toxicological information
Information on toxicological effects
Acute toxicity:
Toxic in contact with skin.
Toxic if inhaled.
Toxic if swallowed.
Danger through skin absorption.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: 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.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
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.
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.

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.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information
UN-Number
DOT, IMDG, IATA UN2505
UN proper shipping name Ammonium fluoride
DOT, IMDG, IATA AMMONIUM FLUORIDE
Transport hazard class(es)
DOT 6.1, Toxic substances.
Label
Class 6.1
Class 6.1 (T5) Toxic substances

(Contd. on page 5)
Product name: Ammonium fluoride

Label
IMDG, IATA

Class
Label
6.1 Toxic substances.
6.1

Packing group
DOT, IMDG, IATA
III

Environmental hazards:
Not applicable.

Special precautions for user
EMS Number:
F-A, S-A
Segregation groups
Ammonium compounds

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

Transport/Additional information:
DOT
No
UN "Model Regulation":
UN2505, Ammonium fluoride, 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

GHS06

Signal word Danger

Hazard statements
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P308 Wear protective gloves/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor...
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P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)
12125-01-8 Ammonium fluoride

California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity 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 11/30/2016 -
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)
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 (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LD50: Lethal dose, 50 percent
LC50: Lethal concentration, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)

(Contd. of page 4)
Product name: Ammonium fluoride

NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

(Contd. of page 5)