

Safety Data Sheet

1. Product and company identification

Product name : Ammonium fluoride(40%)
Name of manufacturer : KANTO CHEMICAL CO., INC.
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan
Name of section : Electronic materials division technical department
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SDS No. : GE00160

2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable liquids : Out of category
Pyrophoric liquids : Out of category
Self-heating substances and mixtures : Out of category

Human health hazard

Serious eye damage/eye irritation : Category 2A
Specific target organ systemic toxicity(repeated exposure) : Category 1

Environmental hazard

Hazardous to the aquatic environment-acute hazard : Out of category
Hazardous to the aquatic environment-chronic hazard : Out of category

Pictogram or symbol



Signal word : Danger
Hazard statement : Causes serious eye irritation
Causes damage to organs (bone) through prolonged or repeated exposure

Cautions

Safety measurements : Do not breathe dust, mist, and vapor.
Do not eat, drink or smoke when using this product.
Wear appropriate protective gloves, glasses, clothing, face shield, or mask.
Wash hands thoroughly after handling.

- First-aid measures : If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.
Wash hands thoroughly after handling.
Get medical treatment, if you feel unwell.
- Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

3. Composition/Information on ingredients

- Substance/Mixture : Substance
Chemical name or commercial name : Ammonium fluoride
Ingredients and composition : Water solution contains 40% Ammonium fluoride as F 21%
Chemical formula : NH₄F
CAS No. : 12125-01-8
TSCA Inventory : Registered
EINECS No. : 2351859
Dangerous and hazardous ingredients : Ammonium fluoride

4. First aid measures

- Inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.
- Skin contact : Remove contaminated clothing and shoes immediately. Flush affected areas with plenty of water immediately. If possible, apply calcium gluconate jelly on affected areas. Get medical attention.
- Eye contact : Wash the affected areas under running water.
- Ingestion : Give the victim milk or 5% calcium gluconate water solution. Get medical attention.
- Protection for first aid person : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

- Extinguishing media : This product is noncombustible.
Prohibited extinguishing media : None
Particular fire fighting : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
Protection for firefighters : Firefighters should wear protective equipment.

6. Accidental release measures

- Cautions for personnel : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind.
- Cautions for environment : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.
- Removal measure : Absorb spill with diatomaceous earth or dry sand and place in container. Neutralize residue with calcium hydroxide solution or sodium carbonate solution and then flush with copious amounts of water.

7. Cautions of handling and storage

Handling

- Engineering measures : If necessary, wear appropriate protective equipment to avoid contact with skin or inhalation of vapor.
Prevent leakage of liquid and vapor.

Cautions for safety handling

- : Use with an enclosed system or a local exhaust ventilation.

- Cautions : The substance is acidic. Avoid contact with alkaline substances.

Storage

Incompatible substances

- : This chemical corrodes many kinds of metal, glass and concretes.

Adequate storage condition

- : Store in a dark, cool place and tightly closed.
Avoid contact with alkaline materials.

Safety adequate container materials

- : Polyethylene, fluorine resin

8. Exposure control/Personal protection

- Engineering measures : Use with an enclosed system or a local exhaust ventilation.

Control parameters

- ACGIH(2015) : 2.5mg/m³(as Fluoride)(TLV-TWA)

Protective equipment

Respiration protective equipment

- : Chemical cartridge respirator with acids vapor cartage or airline respirator

Hands protective equipment

- : Impervious protective gloves

Eyes protective equipment

- : Safety goggles

Skin and body protective equipment

- : Protective clothing, protective boots

9. Physical and chemical properties

Appearance : Liquid

Color : Colorless

Odor : Ammonia like odor

pH : Not available
Boiling point : Not available
Melting point : Not available
Flash point : Noncombustible
Auto-ignition point : Noncombustible
Density : Not available
Solubility
Solubility in solvents : Water : Miscible
Organic solvents : Slightly soluble in ethanol.

10. Stability and reactivity

Stability : Stable under normal conditions.
Reactivity : When dissolved in water, hydrofluoric acid is formed. Hydrofluoric acid erodes many kind of metals and liberate explosive hydrogen gas.
Corrodes glass, concretes.
Reacts with chlorine trifluoride and brings about the danger of explosion.
Incompatible conditions : Light, heat
Incompatible materials : Many kind of metals, glasses.
Hazardous decomposition products
: When thermally decomposed, hydrogen fluoride, fluorine ion, nitrogen oxide and fumes of ammonia are produced.

11. Toxicological information

Acute toxicity : Oral : Not possible to classify because of insufficient data.
Dermal : Not possible to classify because of insufficient data.
Inhalation(vapor) : Not possible to classify because of insufficient data.
Inhalation(dust, mist) : Not possible to classify because of insufficient data.
Skin corrosion/irritation : Not possible to classify because of insufficient data.
Serious eye damage/eye irritation
: Causes serious eye irritation(category 2A)
Respiratory sensitization or Skin sensitization
: Respiratory sensitization : Not possible to classify because of insufficient data.
Skin sensitization : Not possible to classify because of insufficient data.
Mutagenicity : Not possible to classify because of insufficient data.
Carcinogenic effects : Not possible to classify because of insufficient data
Effects on the reproductive system
: Not possible to classify because of insufficient data.
Specific target organ systemic toxicity single exposure
: Not possible to classify because of insufficient data.
Specific target organ systemic toxicity repeated exposure
: Cause damage to organs (bone) through prolonged or repeated exposure(category 1)

Aspiration hazard : Not possible to classify because of insufficient data.

12. Ecological information

Ecotoxicity

Fish toxicity : Acute aquatic toxicity : Out of category
Chronic aquatic toxicity : Out of category
(as ammonium fluoride)
Crustacea(grass shrimp) LC50=69.6mg/L/96H

Persistence and degradability

: Not available

Bioaccumulative potential : Not available

Mobility in soil : Not available

13. Disposal consideration

Residual disposal

Precipitation method : Add the chemical in a large amount of calcium hydroxide solution gradually to precipitate. Filter the precipitation and bury in a landfill site approved for hazardous waste disposal. Drain the filtrate after pH control.

Or entrust approved waste disposal companies with the disposal.

<Note> : The pH of the neutralization should be above 8.5. The precipitation does not form completely below pH 8.5.
Comply with applicable laws and regulations when draining wastewater.
As unreacted toxic gas may be emitted at the disposal work, wear appropriate protective equipment. Even a small amount of the gas has the toxicity.

Containers : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

UN class : Class 6.1(Toxic substances) P. G. III

UN number : 2505

Marine regulation information

UN No. : 2505
Proper shipping name : AMMONIUM FLUORIDE
Class : 6.1
Sub risk : -
Packing group : III
Marine pollutant : Not applicable

Aviation regulation information

UN No. : 2505
Proper shipping name : Ammonium fluoride
Class : 6.1
Sub risk : -
Packing group : III

15. Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

References

Encyclopaedia Chemica, Kyoritsu Shuppan Co., Ltd. (1963)

Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984)

Handbook of 16817 Chemical Products, The Chemical Daily Co. (2017)

ICSC Card (2009)

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253, and it has the same required elements on the Material Safety Data Sheet (MSDS) which is prepared based on JIS Z7250:2010.

