

Safety Data Sheet

1. Chemical product and company identification

Product name : AMMONIUM FLUORIDE(40%)

Company information

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
 Telephone number : +81-3-6214-1080
 Facsimile number : +81-3-3241-1043
 Mail address : el-info@kanto.co.jp
 Reference No : GE00160 1.4
 Recommended uses and restrictions : Electronic chemicals

2. Hazards identification

GHS classification

Health hazards	Serious eye damage/eye irritation	Category 2
	Specific target organ toxicity (repeated exposure)	Category 1 (bone)

Hazard pictograms



Signal word : Danger

Hazard statements : Causes serious eye irritation
 Causes damage to organs (bone) through prolonged or repeated exposure

Precautionary statements

Prevention : Do not breathe mist, vapors.
 Wash hands, forearms and face thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF IN EYES: Rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do. Continue rinsing.
 Get medical advice/attention if you feel unwell.
 If eye irritation persists: Get medical advice/attention.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or : Mixture



mixture

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Ammonium fluoride	40 (as F 21)	NH ₄ F	Listed	235-185-9	12125-01-8
Water	60	H ₂ O	Listed	231-791-2	7732-18-5

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.
- First-aid measures after 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.
- First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.
- First-aid measures after ingestion : Give the victim milk or 5% calcium gluconate water solution. Get medical attention.
- Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

- Suitable extinguishing media : This product is noncombustible.
- Unsuitable extinguishing media : None
- Fire hazard : Thermal decomposition emits harmful ammonium hydrogen fluoride, ammonia.
- Firefighting instructions : 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.
- Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

- Environmental precautions : 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.

Methods and Equipment for Containment and Cleaning up

- For containment : 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. Handling and storage

Handling

- Technical measures : If necessary, wear appropriate protective equipment to avoid contact with skin or inhalation of vapor.
Prevent leakage of liquid and vapor.
- Precautions for safe handling : Use with an enclosed system or a local exhaust ventilation.
The substance is acidic. Avoid contact with alkaline substances.

Storage

- Storage conditions : Store in a dark, cool place and tightly closed.
Avoid contact with alkaline materials.
- Material used in packaging/containers : Polyethylene, fluorine resin.
- Incompatible materials : This chemical corrodes many kinds of metal, glass and concretes.

8. Exposure controls / Personal protection equipment

Ammonium fluoride	
ACGIH	TWA 2.5 mg/m ³ , STEL - (as F)

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

Protective equipment

- Respiratory protection : Chemical cartridge respirator with acids vapor cartage or airline respirator
- Hand protection : Impervious protective gloves
- Eye protection : Safety goggles
- Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

- Physical state : Liquid
- Color : Colorless.
- Odor : Ammonia like
- pH : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : Non flammable
- Auto-ignition temperature : Non flammable
- Decomposition temperature : No data available
- Flammability : Non flammable.
- Vapor pressure : No data available
- Relative density : No data available
- Density : No data available
- Relative gas density : No data available
- Solubility : Water: Miscible. Organic solvents: Slightly soluble in ethanol.
- Partition coefficient n- : No data available

octanol/water (log Pow)
Explosive limits (vol %) : No data available
Viscosity, kinematic: : No data available
Particle characteristics : No data available

10. Stability and reactivity

Reactivity : Contact with an acids produces hydrogen fluoride. Contact with alkaline substances produces ammonia.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : It is known that it reacts explosively with chlorine trifluoride, which is an oxidizing gas.
Conditions to avoid : Light, heat.
Incompatible materials : Many kind of metals, glasses, acids, alkaline substances.
Hazardous decomposition products : Hydrogen fluoride, ammonium hydrogen fluoride, ammonia, nitrogen oxides.

11. Toxicological information

Acute toxicity (oral) : Classification not possible
Acute toxicity (dermal) : Classification not possible
Acute toxicity (inhalation) : No classification (gas)
Classification not possible (vapor)
Classification not possible (dust, mist)
Skin corrosion/irritation : Classification not possible
Serious eye damage/irritation : Causes serious eye irritation
Respiratory sensitization : Classification not possible
Skin sensitization : Classification not possible
Germ cell mutagenicity : Classification not possible
Carcinogenicity : No classification
Reproductive toxicity : Classification not possible
STOT-single exposure : Classification not possible
STOT-repeated exposure : Causes damage to organs (bone) through prolonged or repeated exposure
Aspiration hazard : Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute : No classification
Aquatic chronic : No classification

Persistence and degradability

Persistence and degradability No data available

Bioaccumulative potential

Bioaccumulative potential Low bioconcentration
log Pow : -4.37

Mobility in soil

Mobility in soil No data available



Hazardous to the ozone layer

Ozone : Classification not possible
Other adverse effects : No additional information available

13. Disposal considerations

Ecological waste information : 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.
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.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information**International Regulations****Transport by sea(IMDG)**

UN-No. (IMDG) : 2505
Proper Shipping Name (IMDG) : AMMONIUM FLUORIDE
Packing group (IMDG) : III
Transport hazard class(es) (IMDG) : 6.1

Air transport(IATA)

UN-No. (IATA) : 2505
Proper Shipping Name (IATA) : Ammonium fluoride
Packing group (IATA) : III
Transport hazard class(es) (IATA) : 6.1

Marine pollutant : Not applicable
MFAG-No : 154

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963)
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022)
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation

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.

