



SAFETY DATA SHEET (SDS)

Product Name: TAMAPURE-AA-10/100 Hydrofluoric Acid (HF)

Section 1 PRODUCT INFORMATION

Product Name	TAMAPURE-AA-10/100 Hydrofluoric Acid (HF)38%
Company Name	Tama Chemicals Co., Ltd.
Company Address	6-1 Higashidacho, Kawasaki-ku, Kawasaki City,Kanagawa 210-0005, Japan
Telephone No.	81(44)200-1702
FAX No.	81(44)200-1707
Emergency phone No.	81(44)200-1702
Reference number	TAMA-UAR003-01-4 (E)

Section 2 HAZARDS IDENTIFICATION

Emergency Overview

Danger! Very toxic by inhalation ,in contact with skin , and if swallowed Corossive. Causes severs burns . May be harmful or fatal if inhaled or swallowed.

Category	Hazard category	Hazard statement
ACUTE TOXICITY	3	Fatal if inhaled
SKIN COROSSION/IRRITATION	1A	Causes severe skin burns and eye damage
EYE DAMAGE/IRRITATION	1	Causes serious eye damage
SENSITIZATION-RESPIRATORY	1	May cause allergy or asthma symptoms or breathing difficulties if inhaled
GERM CELL MUTAGENICITY	2	Suspected of causing genetic defects reproduction
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOUSURE)	1	Cause damage to organs respiration and pancreas
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE)	1	Cause damage to organs born , teeth , pituitary gland , thyroid gland , kidney , nervous , liver , respiratory and reproduction through prolonged or repeated exposure
HAZARDOUS TO AQUATIC ENVIRONMENT – ACUTE HAZARD	3	Harmful to aquatic life

Symbol



Section 3 COMPOSITION / INFORMATION ON INGREDIENTS

Component	EINECS No.	Wt %	CAS No.	EC No.
Hydrofluoric Acid	231-634-8	38%	7664-39-3	009-002-00-6
Water	-	balance	7732-18-5	
Hazard Symbols:	T+ , C			
Risk Phrases: (see Section 15)	R26/27/28 R35			

N/E = Not Established N/A = Not Applicable
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Section 4 FIRST AID MEASURES

Emergency and First Aid Procedures:

- Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of water or milk. Never give anything by mouth to an unconscious person. Add calcium in the form of calcium gluconate or calcium lactate. Get medical aid immediately. Do not induce vomiting.
- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Prompt action is essential. Seek medical attention.
- Skin Contact:** For acid burns to the body: Remove the exposed individual from the area and immediately place them under a safety shower or wash with a water hose, whichever is available. Care should be taken to prevent first aid responder from contacting acid soaked clothing without proper protective equipment (gloves, safety glasses). Remove contaminated clothing while continuing water wash-down. Continue washing for at least 15 to 30 minutes using large amounts of water. Seek medical attention as soon as possible, preferably while washing is underway. If available, after thorough washing, the burned area should be immersed in a solution of 0.2% iced aqueous Hyamine 1622 or 0.13% iced aqueous Zephiran Chloride. If immersion is not practical, towels soaked with one of the above solutions should be used as compresses for the burn area. Ideally, compresses should be changed every two minutes. An alternate first aid procedure is to wash the affected area with water for one minute, then apply HF antidote gel (contains calcium gluconate) to the affected area and massage into the wound until there is a cessation of pain. It is advisable to have HF antidote gel available to persons working with HF at all times, including away from the workplace, as the effects of dilute HF may not be felt for up to 24 hrs. Seek medical attention as soon as possible for all burns, no matter how minor they appear at first, and irrespective of using antidote gel. Hyamine 1622 is a trade name for Tetracaine Benzethonium Chloride, sold by Rohm & Haas, Philadelphia. Zephiran Chloride is a trade name for Benzalkonium Chloride, sold by Sanofi Winthrop Pharmaceutical, New York, NY.
- Eye Contact:** In case of contact, flush immediately with water for at least 30 minutes. keeping eyelids apart and away from the eyeballs during irrigation. Seek competent medical attention as soon as possible, preferably an eye specialist. If a physician is not immediately available, apply one or two drops of 0.5% Pontocaine Hydrochloride solution.

Section 5 FIRE FIGHTING MEASURES

Fire Hazards: Not combustible.

Suitable Fire Extinguishing Media: Use appropriate media for surrounding fire.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus with full face piece in positive pressure mode and proper protective clothing. Move containers from fire area if it can be done without risk. Do not get water inside containers.

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Unusual Fire and Explosion Hazards: Reacts with organic materials to produce oxygen gas, which can form explosive mixtures with air. Exothermic reaction occurs with water.

Decomposition Products: hydrogen fluoride (HF)

Section 6 ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8. Avoid discharge to the environment

Spills/Leaks: Contain and absorb spilled product wearing appropriate personal protective equipment. Stop leak if able to do so without risk. Using clean shovel (plastic preferred) place in clean, dry container and cover.

Section 7 HANDLING AND STORAGE

Handling: Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Empty containers retain product residue and can be dangerous. Avoid ingestion and inhalation.

Storage: Store in corrosion resistant area. Do not store with incompatible materials. Keep tightly closed. Keep containers away from heat and out of sun.

Section 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits:

Component	CAS No.	EINECS No.	ACGIH/TLV
Hydrofluoric Acid	7664-39-3	231-634-8	3.0ppm(STEL)(as F)

Ventilation System: Use general or local exhaust ventilation to meet TLV requirements.

Personal respirators: Not required with adequate ventilation. If airborne concentration is above TLV, use of self-contained breathing apparatus (SCBA) is recommended.

Skin protection: Avoid skin contact, wear gloves and protective clothing (lab coat, apron, coveralls). Gloves subject to permeation or any sign of degradation must be removed and replaced immediately.

Eye protection: Use chemical safety glasses and/or a full face shield where splashing is possible. Maintain shower/eyewash facilities in work area.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor	Colorless, fuming liquid; acid odor.	Vapor Pressure (kPa)	4.9kPa (37mmHg)(26.7°C, 55%)
pH	<1.0	Vapor Density (air =1)	0.69
Flash Point °C (°F)	Not combustible.	Evaporation Rate	N/E
Auto Ignition Temp °C (°F)	N/A	% Volatiles by volume	N/A
Boiling Point °C	112	Physical State (@STP)	Liquid

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Page 4 of 5

Melting Point °C	N/E	Coeff. Oil/H ₂ O Partition	N/E
Specific Gravity (H ₂ O=1)	1.1-1.2	Solubility (H ₂ O)	miscible

Section 10 STABILITY AND REACTIVITY

Stability: Stable
Conditions to Avoid: Heat, moisture
Materials to Avoid: Most common metals, water, carbonates, strong bases, organic materials, strong reducing agents, strong oxidizing agents, combustible materials, sulfides, cyanides, carbides.
Hazardous Decomposition Products: hydrogen fluoride, hydrogen

Hazardous Polymerization: Will not occur

Section 11 TOXICOLOGICAL INFORMATION

A. Toxicity of Components

Hydrofluoric Acid	ihl-hum LDLo	100 mg/m ³ / 1 min
	skn-mus LCLo	500 mg/kg
	orl-hum LDLo	143 mg/kg

Carcinogenicity: NTP: No IARC: No Z list: No OSHA Reg: No

Reproductive Effects: None found.

B. Effects of Overexposure: application

Inhalation: Irregular pulse, cold limbs, bloody urine, severe irritation or burns to respiratory System, pulmonary edema, lung inflammation.
Skin Contact: Severe burns (MAY BE DELAYED).
Eye Contact: Severe burns (MAY BE DELAYED).
Skin Absorption: Attacks underlying tissue and bone.
Ingestion: Severe burns to mouth, throat and stomach. Kidney dysfunction.
Chronic Effects: Hypocalcaemia, bone and joint damage.
Target Organs: Eyes, skin, respiratory system.

Primary Routes of Entry: Skin contact, eye contact, ingestion, inhalation, and absorption.

Medical Conditions Generally Aggravated by Exposure: Respiratory system disease, kidney disorders.

Section 12 ECOLOGICAL INFORMATION

Ecotoxicity:

shrimp EC₅₀ 10.5mg/L/96h, Daphnia magna NOEC 14.1mg/L/21day

Environmental:

Forms corrosive mixture with water. Harmful effect on aquatic organisms.

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Page 5 of 5

Section 13 DISPOSAL CONSIDERATIONS

Disposal Procedure: Dispose in accordance with state and local regulations. Waste material is corrosive.

Section 14 TRANSPORT INFORMATION

Proper D.O.T Shipping Name: Hydrofluoric acid
UN/No.: UN 1790
Hazard Class: 8,(6.1)
Label: Corrosive/Poison
Packing Group: II

Section 15 REGULATORY INFORMATION

Hazard Symbols:

C Corrosive
T+ Very Toxic

Risk/Safety Phrases:

R26/27/28 : Very toxic by inhalation, in contact with skin, and if swallowed.
R35 : Causes severe burns.
S7/9 : Keep container tightly closed and in a well ventilated place.
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 : Wear suitable protective clothing, gloves, and eye/face protection
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible).

Section 16 OTHER INFORMATION

The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and Tama Chemicals Co.,Ltd. assumes no legal responsibility or liability whatsoever resulting from its use.

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