



Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Revision date: 12/21/2022 Supersedes version of: 8/10/2018 Version: 4.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Porcelain Etchant (4%HF)

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : For Rx Only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

BISCO, Inc.
1100 W. Irving Park Rd.
Schaumburg, IL 60193
U.S.A.
T 1-800-247-3368 or 1-847-534-6000
www.bisco.com

EC REP

BISICO France
208, allée de la Coudoulette
13680 Lançon de Provence
France
T 33-4-90-42-92-92

1.4. Emergency telephone number

Emergency number : CHEMTREC - 24-Hour Hazmat Emergency Communications Center
Domestic: 1-800-424-9300 Outside the U.S.: 1-703-527-3887, collect calls accepted

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 3	H301
Acute toxicity (dermal), Category 2	H310
Acute toxicity (inhalation:vapour) Category 3	H331
Skin corrosion/irritation, Category 1, Sub-Category 1A	H314
Full text of H- and EUH-statements: see section 16	

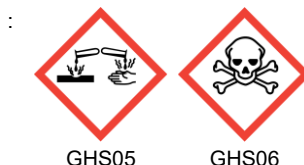
Adverse physicochemical, human health and environmental effects

Fatal in contact with skin. Toxic if inhaled. Toxic if swallowed. Causes severe skin burns and eye damage.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Contains

: Hydrofluoric Acid, Sodium Fluoride

Hazard statements (CLP)

: H301+H331 - Toxic if swallowed or if inhaled.
H310 - Fatal in contact with skin.
H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP)
: P260 - Do not breathe vapours.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection.

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

P301+P310 - IF SWALLOWED: Immediately call a doctor, a POISON CENTER.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a doctor, a POISON CENTER.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P501 - Dispose of contents and container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste, a hazardous or special waste collection point, hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component

Hydrofluoric Acid (7664-39-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Sodium Fluoride (7681-49-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hydrofluoric Acid substance with a Community workplace exposure limit	CAS-No.: 7664-39-3 EC-No.: 231-634-8 EC Index-No.: 009-003-00-1	5 - 10	Skin Corr. 1, H314
Sodium Fluoride substance with a Community workplace exposure limit	CAS-No.: 7681-49-4 EC-No.: 231-667-8 EC Index-No.: 009-004-00-7	< 1	Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT RE 1, H372

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Hydrofluoric Acid	CAS-No.: 7664-39-3 EC-No.: 231-634-8 EC Index-No.: 009-003-00-1	(0.1 $\leq$ C < 1) Eye Irrit. 2, H319 (1 $\leq$ C < 7) Skin Corr. 1B, H314 (7 $\leq$ C < 100) Skin Corr. 1A, H314

Full text of H- and EUH-statements: see section 16

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a doctor.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Call a physician immediately. Rinse skin with water/shower.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Call a physician immediately. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	: Burns.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
------------------------------	--

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
--	--------------------------------

5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
--------------------------------	--

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe fume/mist/vapours.
----------------------	---

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
----------------------	---

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Do not breathe fume/mist/vapours.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep container tightly closed. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: orange.
Appearance	: Gel.
Odour	: Odourless.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not applicable
Explosive limits	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: ≈ 1
Viscosity, kinematic	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Toxic if swallowed.
Acute toxicity (dermal) : Fatal in contact with skin.
Acute toxicity (inhalation) : Toxic if inhaled.

Porcelain Etchant (4%HF)

ATE CLP (oral)	61.218 mg/kg bodyweight
ATE CLP (dermal)	61.275 mg/kg bodyweight
ATE CLP (vapours)	6.127 mg/l/4h

Hydrofluoric Acid (7664-39-3)

LD50 dermal rabbit	≤ 50 mg/kg Source: ECHA
--------------------	-------------------------

Sodium Fluoride (7681-49-4)

LD50 oral rat	223 mg/kg bodyweight (EPA OPPTS 870.1100: Acute Oral Toxicity, Rat, Male, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg Source: ECHA

Skin corrosion/irritation : Causes severe skin burns.
pH: ≈ 1

Hydrofluoric Acid (7664-39-3)

pH	< 1
----	-----

Sodium Fluoride (7681-49-4)

pH	7.4
----	-----

Serious eye damage/irritation : Assumed to cause serious eye damage
pH: ≈ 1

Hydrofluoric Acid (7664-39-3)

pH	< 1
----	-----

Sodium Fluoride (7681-49-4)

pH	7.4
----	-----

Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Sodium Fluoride (7681-49-4)

IARC group	3 - Not classifiable
------------	----------------------

Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified

Sodium Fluoride (7681-49-4)

LOAEL (oral, rat, 90 days)	≈ 4 mg/kg bodyweight Animal: rat, Guideline: other:
----------------------------	---

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Sodium Fluoride (7681-49-4)

NOAEL (oral, rat, 90 days)	≈ 25 mg/kg bodyweight Animal: rat, Guideline: other:
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Sodium Fluoride (7681-49-4)

Viscosity, kinematic	0.38 mm ² /s
----------------------	-------------------------

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

Hydrofluoric Acid (7664-39-3)

LC50 - Fish [1]	51 mg/l Test organisms (species): other:
LC50 - Fish [2]	165 mg/l Test organisms (species): other:
EC50 72h - Algae [1]	43 - 122 mg/l Source: ECHA
NOEC (chronic)	14.1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	4 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '21 d'

Sodium Fluoride (7681-49-4)

LC50 - Fish [1]	38 - 68 mg/l Source: NCIS; Toxic Substances Information Report
LC50 - Fish [2]	165 mg/l Test organisms (species): other:
EC50 - Crustacea [1]	97 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value, Fluorine ion)
EC50 72h - Algae [1]	850 mg/l Source: NCIS; Toxic Substances Information Report
EC50 96h - Algae [1]	43 mg/l (Scenedesmus sp., Static system, Experimental value, Fluorine ion)
NOEC (chronic)	14.1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	4 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '21 d'

12.2. Persistence and degradability

Hydrofluoric Acid (7664-39-3)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Sodium Fluoride (7681-49-4)

Persistence and degradability	Biodegradability: not applicable.
-------------------------------	-----------------------------------

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Sodium Fluoride (7681-49-4)

Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

Hydrofluoric Acid (7664-39-3)

Partition coefficient n-octanol/water (Log Pow)	-0.9 (Calculated)
Bioaccumulative potential	Not bioaccumulative.

Sodium Fluoride (7681-49-4)

BCF - Fish [1]	53 - 58 (Pisces, Fresh water, Literature study, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	-0.77 Source: EPISUITE
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Hydrofluoric Acid (7664-39-3)

Ecology - soil	No (test)data on mobility of the component(s) available.
----------------	--

Sodium Fluoride (7681-49-4)

Ecology - soil	Adsorbs into the soil. Toxic to flora.
----------------	--

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR)	: UN 1790
UN-No. (IMDG)	: UN 1790
UN-No. (IATA)	: UN 1790
UN-No. (ADN)	: Not applicable
UN-No. (RID)	: UN 1790

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: HYDROFLUORIC ACID
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

Porcelain Etchant (4%HF)

Safety Data Sheet

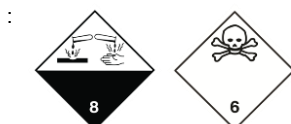
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Proper Shipping Name (ADN)	: Not applicable
Proper Shipping Name (RID)	: Not applicable
Transport document description (ADR)	: UN 1790 HYDROFLUORIC ACID, 8 (6.1), II, (E)
Transport document description (IMDG)	: UN 1790 , 8
Transport document description (IATA)	: UN 1790 , 8
Transport document description (RID)	: UN 1790 , 8 (6.1)

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 8 (6.1)
Danger labels (ADR)	: 8, 6.1



IMDG

Transport hazard class(es) (IMDG)	: 8
-----------------------------------	-----

IATA

Transport hazard class(es) (IATA)	: 8
-----------------------------------	-----

ADN

Transport hazard class(es) (ADN)	: Not applicable
----------------------------------	------------------

RID

Transport hazard class(es) (RID)	: 8 (6.1)
Danger labels (RID)	: 8, 6.1



14.4. Packing group

Packing group (ADR)	: II
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable
Packing group (ADN)	: Not applicable
Packing group (RID)	: Not applicable

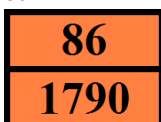
14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: CT1
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Vehicle for tank carriage	: AT
Transport category (ADR)	: 2
Hazard identification number (Kemler No.)	: 86
Orange plates	:



Tunnel restriction code (ADR)	: E
-------------------------------	-----

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Transport by sea

No data available

Air transport

No data available

Inland waterway transport

No data available

Rail transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Supersedes version of	Added	
	Issue date	Removed	

Porcelain Etchant (4%HF)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Indication of changes			
Section	Changed item	Change	Comments
	Revision date	Added	
2.2	Precautionary statements (CLP)	Modified	
7.1	Precautions for safe handling	Modified	
7.2	Storage conditions	Modified	
11.1	ATE CLP (vapours)	Modified	
11.1	ATE CLP (dermal)	Modified	
11.1	ATE CLP (oral)	Modified	

Full text of H- and EUH-statements:	
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity - Repeated exposure, Category 1

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.