

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

1.1. Product identifier

Product form : Mixture
Product name : Keller's etchant
UFI : 77YC-CMRH-DK22-UQ3A
Type of product : Acids
Product group : Trade product

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

Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.3. Details of the supplier of the safety data sheet

Distributor

LAM PLAN SAS
7, rue des Jardins
P.O. Box BP 15
Fr 74240 Gaillard
France
T +33(0)450439630
fds@lamplan.fr, www.lamplan.com

1.4. Emergency telephone number

Emergency number : INRS/ORFILA (France) : 33 1 45 42 59 59

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| | |
|---|------|
| Corrosive to metals, Category 1 | H290 |
| Acute toxicity (oral), Category 4 | H302 |
| Acute toxicity (dermal), Category 3 | H311 |
| Skin corrosion/irritation, Category 2 | H315 |
| Serious eye damage/eye irritation, Category 1 | H318 |

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

Adverse physicochemical, human health and environmental effects

May be corrosive to metals. Toxic in contact with skin. Harmful if swallowed. Causes skin irritation. Causes serious eye damage.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

GHS06

Signal word (CLP) :

Danger

Contains :

hydrofluoric acid ... %

Hazard statements (CLP) :

H290 - May be corrosive to metals.
H302 - Harmful if swallowed.
H311 - Toxic in contact with skin.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.

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Precautionary statements (CLP) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
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 POISON CENTER or doctor.
P390 - Absorb spillage to prevent material damage.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

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
Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH 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 substance(s) are 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

3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|------------------------------|---|---------|--|
| nitric acid ... % [C > 70 %] | CAS-No.: 7697-37-2 EC-No.: 231-714-2 EC Index-No.: 007-004-00-1 | 1 – 3 | Ox. Liq. 2, H272 Acute Tox. 1 (Inhalation), H330 Skin Corr. 1A, H314 |
| hydrofluoric acid ... % | CAS-No.: 7664-39-3 EC-No.: 231-634-8 EC Index-No.: 009-003-00-1 | 0.5 – 1 | Acute Tox. 2 (Inhalation), H330 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Oral), H300 Skin Corr. 1A, H314 |

Specific concentration limits:

| Name | Product identifier | Specific concentration limits (%) |
|------------------------------|---|--|
| nitric acid ... % [C > 70 %] | CAS-No.: 7697-37-2 EC-No.: 231-714-2 EC Index-No.: 007-004-00-1 | (70 \leq C < 99) Ox. Liq. 3; H272 (99 \leq C \leq 100) Ox. Liq. 2; H272 |
| 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 \leq 100) Skin Corr. 1A; H314 |

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
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 poison center or a doctor if you feel unwell.

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

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

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.
Unsuitable extinguishing media : high volume water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Thermal decomposition generates : Nitrogen oxides (NO_x) (as NO₂). Hydrogen chloride and chlorine inorganic compounds (as HCl). Hydrogen fluoride / Hydrofluoric acid.

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

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. Avoid contact with skin, eyes and clothing.

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".
Emergency procedures : Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Prevent aerosol formation or splashes.
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

Technical measures : Protect from freezing. Keep in a cool, well-ventilated place away from heat.

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| | |
|------------------------|---|
| Storage conditions | : Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a well-ventilated place. Keep cool. |
| Incompatible products | : Oxidizing agent. Organic peroxides. AMMONIUM NITRATE. |
| Incompatible materials | : Metals. |
| Storage temperature | : 20 °C |

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

| Keller's etchant | |
|---|---|
| EU - Indicative Occupational Exposure Limit (IOEL) | |
| Local name | Hydrogen fluoride |
| IOEL TWA | 1.5 mg/m ³ |
| | 1.8 ppm |
| IOEL STEL | 2.5 mg/m ³ |
| | 3 ppm |
| Regulatory reference | COMMISSION DIRECTIVE 2000/39/EC |
| EU - Biological Limit Value (BLV) | |
| Local name | Hydrogen fluoride |
| BLV | 8 mg/l Parameter: F - Medium: urine - Sampling time: end of shift |
| Regulatory reference | SCOEL List of recommended health-based BLVs and BGVs |

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Safety glasses

| Eye protection | | | |
|----------------|----------------------|-------------------|----------|
| Type | Field of application | Characteristics | Standard |
| Face shield | | With side shields | EN 166 |

Skin protection

Skin and body protection:

Wear suitable protective clothing

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| Skin and body protection | |
|--------------------------|----------|
| Type | Standard |
| Lab coat | |

Hand protection:

Protective gloves

| Hand protection | | | | | |
|---------------------------------------|-------------------------|-------------------|----------------|-------------|------------|
| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
| Disposable gloves, Reusable gloves | Fluoroelastomer (FKM) | 6 (> 480 minutes) | 0.4 | | EN ISO 374 |
| Disposable gloves, Reusable gloves | Butyl rubber | 6 (> 480 minutes) | 0.5 | | EN ISO 374 |
| Reusable gloves, Disposable gloves | Chloroprene rubber (CR) | 6 (> 480 minutes) | 0.5 | | EN ISO 374 |
| Disposable gloves, Reusable gloves | Nitrile rubber (NBR) | 6 (> 480 minutes) | 0.35 | | EN ISO 374 |
| Reusable gloves, Disposable gloves | Polyvinylchloride (PVC) | 6 (> 480 minutes) | 0.5 | | EN ISO 374 |

Other skin protection

Materials for protective clothing:

Wear protective clothing

Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. In case of vapour formation use adequate respirator. Mist formation. Aerosols

| Respiratory protection | | | |
|---|--|-----------|----------|
| Device | Filter type | Condition | Standard |
| Combined gas/dust mask with filter type | Type E - Sulfur dioxide and hydrogen chloride (acidic gases), Type P3 | | EN 14387 |

Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Keep the container hermetically sealed. Take off immediately all contaminated clothing and wash it before reuse.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------------|------------------|
| Physical state | : Liquid |
| Colour | : Not available |
| Odour | : Not available |
| Odour threshold | : Not available |
| Melting point | : Not applicable |
| Freezing point | : Not available |
| Boiling point | : Not available |
| Flammability | : Not applicable |
| Lower explosion limit | : Not available |
| Upper explosion limit | : Not available |

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| | |
|---|------------------|
| Flash point | : Not available |
| Auto-ignition temperature | : Not available |
| Decomposition temperature | : Not available |
| pH | : Not available |
| 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

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).

10.5. Incompatible materials

metals.

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) | : Harmful if swallowed. |
| Acute toxicity (dermal) | : Toxic in contact with skin. |
| Acute toxicity (inhalation) | : Not classified |

| Keller's etchant | |
|------------------|-------------|
| ATE CLP (oral) | 980.4 mg/kg |
| ATE CLP (dermal) | 980.4 mg/kg |

| | |
|-----------------------------------|------------------------------|
| Skin corrosion/irritation | : Causes skin irritation. |
| Serious eye damage/irritation | : Causes serious eye damage. |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |
| STOT-repeated exposure | : Not classified |

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Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

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| | |
|-------------------------------|------------------------|
| Persistence and degradability | Not rapidly degradable |
|-------------------------------|------------------------|

nitric acid ... % [C > 70 %] (7697-37-2)

| | |
|-------------------------------|------------------------|
| Persistence and degradability | Not rapidly degradable |
|-------------------------------|------------------------|

hydrofluoric acid ... % (7664-39-3)

| | |
|-------------------------------|------------------------|
| Persistence and degradability | Not rapidly degradable |
|-------------------------------|------------------------|

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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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

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.

European List of Waste (LoW, EC 2000/532) : 16 03 03* - inorganic wastes containing dangerous substances
15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

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

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14.1. UN number or ID number

| | |
|---------------|-----------|
| UN-No. (ADR) | : UN 3289 |
| UN-No. (IMDG) | : UN 3289 |
| UN-No. (IATA) | : UN 3289 |
| UN-No. (ADN) | : UN 3289 |
| UN-No. (RID) | : UN 3289 |

14.2. UN proper shipping name

| | |
|--|---|
| Proper Shipping Name (ADR) | : TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%) |
| Proper Shipping Name (IMDG) | : TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%) |
| Proper Shipping Name (IATA) | : Toxic liquid, corrosive, inorganic, n.o.s. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%) |
| Proper Shipping Name (ADN) | : TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%) |
| Proper Shipping Name (RID) | : TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%) |
| Transport document description (ADR) (ADR) | : UN 3289 TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%), 6.1 (8), II, (D/E) |
| Transport document description (IMDG) | : UN 3289 TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%), 6.1 (8), II |
| Transport document description (IATA) | : UN 3289 Toxic liquid, corrosive, inorganic, n.o.s. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%), 6.1 (8), II |
| Transport document description (ADN) | : UN 3289 TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%), 6.1 (8), II |
| Transport document description (RID) | : UN 3289 TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S. (Nitric acid ...%, Fluorhydric acid ...%, Chlorhydric acid ...%), 6.1 (8), II |

14.3. Transport hazard class(es)

ADR

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



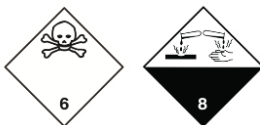
IMDG

| | |
|-----------------------------------|-----------|
| Transport hazard class(es) (IMDG) | : 6.1 (8) |
| Danger labels (IMDG) | : 6.1, 8 |



IATA

| | |
|-----------------------------------|-----------|
| Transport hazard class(es) (IATA) | : 6.1 (8) |
| Danger labels (IATA) | : 6.1, 8 |



ADN

| | |
|----------------------------------|-----------|
| Transport hazard class(es) (ADN) | : 6.1 (8) |
| Danger labels (ADN) | : 6.1, 8 |

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RID

Transport hazard class(es) (RID) : 6.1 (8)

Danger labels (RID) : 6.1, 8



14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-B

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : TC3

Special provisions (ADR) : 274

Limited quantities (ADR) : 100ml

Excepted quantities (ADR) : E4

Packing instructions (ADR) : P001, IBC02

Mixed packing provisions (ADR) : MP15

Portable tank and bulk container instructions (ADR) : T11

Portable tank and bulk container special provisions (ADR) : TP2, TP27

Tank code (ADR) : L4BH

Tank special provisions (ADR) : TU15, TE19

Vehicle for tank carriage : AT

Transport category (ADR) : 2

Special provisions for carriage - Loading, unloading and handling (ADR) : CV13, CV28

Special provisions for carriage - Operation (ADR) : S9, S19

Hazard identification number (Kemler No.) : 68

Orange plates :

Tunnel restriction code (ADR) : D/E

Transport by sea

Special provisions (IMDG) : 274

Limited quantities (IMDG) : 100 ml

Excepted quantities (IMDG) : E4

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T11

Tank special provisions (IMDG) : TP2, TP27

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Stowage category (IMDG) : B
Stowage and handling (IMDG) : SW2
Properties and observations (IMDG) : Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.

Air transport

PCA Excepted quantities (IATA) : E4
PCA Limited quantities (IATA) : Y640
PCA limited quantity max net quantity (IATA) : 0.5L
PCA packing instructions (IATA) : 653
PCA max net quantity (IATA) : 1L
CAO packing instructions (IATA) : 660
CAO max net quantity (IATA) : 30L
Special provisions (IATA) : A4, A137
ERG code (IATA) : 6C

Inland waterway transport

Classification code (ADN) : TC3
Special provisions (ADN) : 274, 802
Limited quantities (ADN) : 100 ml
Excepted quantities (ADN) : E4
Equipment required (ADN) : PP, EP, TOX, A
Ventilation (ADN) : VE02
Number of blue cones/lights (ADN) : 2

Rail transport

Classification code (RID) : TC3
Special provisions (RID) : 274
Limited quantities (RID) : 100ml
Excepted quantities (RID) : E4
Packing instructions (RID) : P001, IBC02
Mixed packing provisions (RID) : MP15
Portable tank and bulk container instructions (RID) : T11
Portable tank and bulk container special provisions (RID) : TP2, TP27
Tank codes for RID tanks (RID) : L4BH
Special provisions for RID tanks (RID) : TU15
Transport category (RID) : 2
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW28, CW31
Colis express (express parcels) (RID) : CE5
Hazard identification number (RID) : 68

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

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

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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 (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items: Hydrogen fluoride (7664-39-3).

Explosives Precursors Regulation (2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

ANNEX I RESTRICTED EXPLOSIVES PRECURSORS

List of substances which are not to be made available to, or introduced, possessed or used by, members of the general public, whether on their own or in mixtures or substances that include those substances, unless the concentration is equal to or lower than the limit values set out in column 2, and for which suspicious transactions and significant disappearances and thefts are to be reported within 24 hours.

| Name | CAS-No. | Limit value | Upper limit value for licensing under Article 5(3) | Combined Nomenclature (CN) code for a separate chemically defined compound meeting the requirements of Note 1 to Chapter 28 or 29 of the CN, respectively | Combined Nomenclature code for mixture without constituents which would determine classification under another CN code |
|-------------|-----------|-------------|--|---|--|
| Nitric acid | 7697-37-2 | 3 % w/w | 10% w/w | ex 2808 00 00 | ex 3824 99 96 |

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)

National regulations

France

| Occupational diseases | |
|-----------------------|--|
| Code | Description |
| RG 32 | Occupational disorders caused by fluoride, hydrofluoric acid and its mineral salts |

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

| | |
|---------|---|
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute Toxicity Estimate |
| BLV | Biological limit value |
| CAS-No. | Chemical Abstract Service number |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |

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| Abbreviations and acronyms: | |
|-----------------------------|---|
| DMEL | Derived Minimal Effect level |
| DNEL | Derived-No Effect Level |
| EC50 | Median effective concentration |
| EC-No. | European Community number |
| EN | European Standard |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| NOAEL | No-Observed Adverse Effect Level |
| NOEC | No-Observed Effect Concentration |
| OEL | Occupational Exposure Limit |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| vPvB | Very Persistent and Very Bioaccumulative |
| WGK | Water Hazard Class |

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

| Full text of H- and EUH-statements: | |
|-------------------------------------|--|
| Acute Tox. 1 (Dermal) | Acute toxicity (dermal), Category 1 |
| Acute Tox. 1 (Inhalation) | Acute toxicity (inhal.), Category 1 |
| Acute Tox. 2 (Inhalation) | Acute toxicity (inhal.), Category 2 |
| Acute Tox. 2 (Oral) | Acute toxicity (oral), Category 2 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Ox. Liq. 2 | Oxidising Liquids, Category 2 |
| Ox. Liq. 3 | Oxidising Liquids, Category 3 |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1, Sub-Category 1A |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1, Sub-Category 1B |
| H272 | May intensify fire; oxidiser. |
| H290 | May be corrosive to metals. |
| H300 | Fatal if swallowed. |
| H302 | Harmful if swallowed. |

Keller's etchant

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| Full text of H- and EUH-statements: | |
|-------------------------------------|--|
| H310 | Fatal in contact with skin. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |

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.