SAFETY DATA SHEET
Hydrofluoric acid 7-60%

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product name: HYDROFLUORIC ACID 7-60%
REACH registration number: 01-2119458860-33-0007
CAS-No.: 7664-39-3
EU index No.: 009-003-00-1
EC (EINECS) No.: 231-634-8
Application PC14: Metal surface treatment products, including galvanic and electroplating products.
Company name: Nexchem Ltd
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Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

Classification (EC 1272/2008)

Physical and Chemical Hazards: Not classified.
Human health: Acute Tox. 2 - H300;Acute Tox. 1 - H310;Acute Tox. 2 - H330;Skin Corr. 1A - H314
Environment: Not classified.
Label in accordance with (EC) No. 1272/2008

Signal word: Danger

Hazard statements: H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H330 Fatal if inhaled.

Precautionary statements: P501 Dispose of contents/container in accordance with national regulations.

[cont...]
Supplementary precautionary statements: P262 Do not get in eyes, on skin, or on clothing. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 Wear respiratory protection. P260 Do not breathe vapour/spray. P264 Wash contaminated skin thoroughly after handling. P320 Specific treatment is urgent (see medical advice on this label). P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+361+353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+351+338 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/physician. P330 Rinse mouth. P361 Remove all contaminated clothing. P403+233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| EU index No.: | 009-003-00-1 |
| EC (EINECS) No.: | 231-634-8 |
| CAS-No.: | 7664-39-3 |

**Composition comments:** The data shown are in accordance with the latest EC Directives.

The Full Text for all R-Phrases is Displayed in Section 16

4. FIRST AID MEASURES (SYMPTOMS)

**General information:**

**Other considerations:**

**Delayed burns:**

(i) At lower concentrations, hydrofluoric acid can result in delayed symptoms causing late onset of effects, casualties should be managed as stated. It is recommended that where hydrofluoric acid is used calcium gluconate (HF antidote gel) should be readily available. Hydrofluoric acid workers should be made aware of the potential for delayed effects and the need to seek appropriate medical support.

(ii) All persons working with hydrofluoric acid shall receive a tube of calcium gluconate gel to take home and receive training in recognising delayed burns.

**Disposal of contaminated material**

(i) All potentially contaminated equipment and clothing should be disposed of.

[cont...]
Notes to the physician:

Emergency first aid for HF burns and injury:

Primary Response: It is essential for the safety of the rescuers to prevent inhalation and to avoid contact with HF during the rescue operation. Appropriate personal protective equipment for use with HF must be worn. The immediate priority after rescue is initial decontamination; this takes precedence over first aid or transfer to medical facilities. First aiders involved in rescue or decontamination must use appropriate PPE.

Inhalation:

(i) Remove to fresh air.

After completion of primary response (decontamination) if inhalation is suspected apply 100% oxygen. If breathing has stopped resuscitate casualty by basic and/or advanced life support techniques - a bag valve mask must be used with 100% oxygen in place of ‘mouth-to-mouth’.

(ii) Obtain medical attention; immediately arrange hospital admission.

(iii) Keep casualty at rest in comfortable position and continue with the above measures until medical attention at the site or in a hospital, has been obtained.

Ingestion:

(i) After completion of primary response (decontamination) seek urgent hospital admission. Do not induce vomiting. Mouth and lips may be rinsed with water, only if casualty is conscious.

Skin contact:

(i) Do not delay.

Flush any remaining acid from the skin with copious amounts of cold water for at least five minutes and then apply calcium gluconate gel (HF Antidote Gel) and massage into the burnt area wearing gloves appropriate to the level of decontamination. Continue to massage while repeatedly applying gel until 15 minutes after the pain in the burnt area is relieved. If skin contamination is more extensive and clothing affected, be aware of the possibility of inhalation injury.

(ii) If calcium gluconate gel is not available CONTINUE TO FLUSH with water until it is.

(iii) Obtain medical attention, but do not delay the above management until medical attention is available.

Eye contact:

(i) Do not delay.

Flush the eyes with copious amounts of water or eye wash solution (sterile isotonic saline solution) until the ambulance arrives. Do not attempt to remove contact lenses. Irrigation should be continued while en route to hospital.

(ii) Obtain medical attention immediately, but do not delay the above management until medical attention is available.

[cont...]

5. FIRE-FIGHTING MEASURES

Extinguishing Media: The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

Special fire fighters procedures: Keep run-off water out of sewers and water sources. Dike for water control. Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Use water spray to reduce vapours. If risk of water pollution occurs, notify appropriate authorities.

Unusual fire & explosion hazards: May develop highly toxic or corrosive fumes if heated.


Protective measures in fire: Wear self-contained breathing apparatus and protective clothing (including fire-fighting helmet, coat, trousers, boots and gloves).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: In case of a major spillage, full protective equipment including a respirator or self-contained breathing apparatus must be worn.

Environmental precautions: Do not allow to enter drains, sewers or water courses. If spillage does enter drains, sewers or water courses, immediately inform appropriate authorities.

Spill clean-up methods: Clean-up personnel should use respiratory and/or liquid contact protection. Stop leak if possible without risk. DO NOT touch spilled material. Inform Authorities if large amounts are involved. Neutralise spilled material with crushed limestone, soda ash or lime. Absorb using an inert absorbent, transfer to labelled containers. Wash thoroughly after dealing with a spillage. Flush with plenty of water to clean spillage area.

7. HANDLING AND STORAGE

Usage precautions: Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Wear full protective clothing for prolonged exposure and/or high concentrations.

Storage precautions: Isolate from other materials. May attack some plastics, rubber and coatings. Will attack glass and most ceramics. Store in tightly closed original container in a dry, cool and well-ventilated place.

Storage class: Toxic storage. Corrosive storage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Name</th>
<th>STD</th>
<th>TWA - 8 Hrs</th>
<th>STEL - 15 Min</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROFLUORIC ACID 7-60%</td>
<td>WEL</td>
<td>1.8 ppm</td>
<td>1.5 mg/m3</td>
<td>3 ppm 2.5 mg/m3</td>
</tr>
</tbody>
</table>

WEL = Workplace Exposure Limit.

Ingredient comments: WEL = Workplace Exposure Limits

Engineering measures: Provide corrosion-resistant local exhaust ventilation. Well-ventilated area.

Respiratory equipment: No specific recommendation made, but respiratory protection must be used if the general level exceeds the recommended occupational exposure limit.

[cont...]
SAFETY DATA SHEET
Hydrofluoric acid 7-60%

Issued: 22/05/2012

Hand protection: Seek advice from local supervisor. For exposure of 4 to 8 hours use gloves made of: Rubber (natural, latex), Neoprene, Polyethylene/Ethylene Vinyl Alcohol (PE/EVAL).

Eye protection: Use approved safety goggles or face shield.

Other protection: Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station and safety shower. Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures: DO NOT SMOKE IN WORK AREA! When using do not eat, drink or smoke. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Contaminated clothing to be placed in closed container until disposal or decontamination. Warn cleaning personnel of chemical's hazardous properties.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear liquid.
Boiling point (°C): 90-112 760 mm Hg
Melting point (°C): -37 to -61°C
Relative density: 1.02 - 1.25 @16°C
pH-value, conc. solution: <1

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperature conditions.
Conditions to avoid: Avoid contact with: Strong alkalis. In contact with metals generates hydrogen gas, which together with air can form explosive mixtures.
Materials to avoid: Bases, alkalis (inorganic), Bases, alkalis (organic). Massive, solid metal, Powdered metal.
Hazardous decomposition products: When heated, toxic and corrosive vapours/gases may be formed.

11. TOXICOLOGICAL INFORMATION

Inhalation: Toxic by inhalation. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
Ingestion: Causes burns. Toxic if swallowed. May cause internal injury. May cause burns in mucous membranes, throat, oesophagus and stomach.
Skin contact: Causes burns. Toxic in contact with skin. Contact with concentrated chemical may cause severe skin damage. May be absorbed through the skin.
Eye contact: Causes burns. Contact with concentrated chemical may very rapidly cause severe eye damage, possibly loss of sight.
Health warnings: Exposure: This chemical has good warning properties. This chemical may cause skin/eye irritation and burns (corrosive). Toxic through skin absorption (percutaneous). May cause temporary blindness and severe eye damage. Serious damage to the lining of nose, throat and lungs. Acute eczematous dermatitis, contact type erythema, oedema, papules, vesicles, bullae, crusts, desquamation. Contact with concentrated chemical may cause severe skin damage. Swallowing concentrated chemical may cause severe internal injury.

[cont...]
SAFETY DATA SHEET
Hydrofluoric acid 7-60%

Issued: 22/05/2012

Route of entry: Inhalation. Ingestion. Skin and/or eye contact.
Target organs: Eyes Gastro-intestinal tract Respiratory system, lungs Skin Bone structure
Medical symptoms: Extreme irritation of eyes and mucous membranes, including burning and tearing. Severe pulmonary irritation. Severe skin irritation. Ingestion may cause: Severe abdominal pain. Nausea, vomiting. Diarrhoea.
Medical considerations: Skin disorders and allergies.

12. ECOLOGICAL INFORMATION

EC 50, 48 Hrs, DAPHNIA, mg/l 10.6

13. DISPOSAL CONSIDERATIONS

Disposal methods: Do not allow runoff to sewer, waterway or ground. Contact specialist disposal companies. Dispose of waste and residues in accordance with local authority requirements.

14. TRANSPORT INFORMATION

Proper shipping name: Hydrofluoric acid with not more than 60% hydrogen fluoride
Environmentally: No.
Hazardous substance/marine pollutant UN No. road: 1790
ADR class No.: 8
ADR class: Class 8: Corrosive substances.
ADR pack group: II
Tunnel restriction code: (E)
Hazard No. (ADR): 86 Corrosive or slightly corrosive substance, toxic.
Hazard No. (ADR): 86
ADR label No.: 8 & 6.1
UN No. Sea: 1790
IMDG class: 8
IMDG pack GR.: II
EMS: F-A, S-B
AIR class: 8
AIR SUB class: 6.1

[cont...]
15. REGULATORY INFORMATION

**UK Regulatory references:** The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments.


**Note:** The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

**General Information:** Only trained personnel should use this material.

**Information sources:** The first adaption to Technical and Scientific Progress of the CLP Regulation , including the 30th and 31st Adaption to Technical Progress to Directive 67/548/EEC was published in September 2009.

**Revision comments:** Amend Classification of H330 to Acute Tox 2 as stated in EC 1272/2008

**Legal disclaimer:** The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.