

### SECTION 1: Identification

#### 1.1. Product identifier

Trade name	: HYDROFLUORIC ACID 48%
EC-No.	: 231-634-8
EC Index-No.	: 009-003-00-1
CAS-No.	: 7664-39-3
UN-No. (ADR)	: 1790
Product code	: 108100xxx
Formula	: HF

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

Recommended uses and restrictions	: For laboratory use only
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#### 1.3. Supplier's details

Labchem (Pty)Ltd  
 6 Wakefield Road  
 Founders Hill  
 1609 Johannesburg - South Africa  
 T +27 11 452 1116 - F +27 86 588 0293  
[techlab@labchem.co.za](mailto:techlab@labchem.co.za) - [www.labchem.co.za](http://www.labchem.co.za)

#### 1.4. Emergency telephone number

Emergency number	: +27 11 452 1116
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### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to the United Nations GHS

Acute toxicity (oral), Category 2	H300
Acute toxicity (dermal), Category 1	H310
Acute toxicity (inhal.), Category 2	H330
Skin corrosion/irritation, Category 1A	H314
Full text of H statements : see section 16	

#### 2.2. Label elements

##### Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :



Signal word (GHS-ZA)	: Danger
Hazard statements (GHS-ZA)	: H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled H314 - Causes severe skin burns and eye damage.
Precautionary statements (GHS-ZA)	: P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P262 - Do not get in eyes, on skin, or on clothing. P264 - Wash hands, forearms and face thoroughly after handling. 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 - [In case of inadequate ventilation] wear respiratory protection. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P302+P352 - IF ON SKIN: Wash with plenty of water. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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 POISON CENTER or doctor. P320 - Specific treatment is urgent (see supplemental first aid instruction on this label). 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. P363 - Wash contaminated clothing before reuse.

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According to SANS 10234:2008 and SANS 11014:2010

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
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

Adverse physicochemical, human health and environmental effects : Fatal in contact with skin, Fatal if inhaled, Fatal if swallowed, Causes severe skin burns and eye damage.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance identification codes: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
hydrofluoric acid (Main constituent)	(CAS-No.) 7664-39-3	≥ 48	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation), H330 Skin Corr. 1A, H314

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## 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 physician immediately. 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 inhalation : Dry/sore throat. Coughing. Corrosion of the upper respiratory tract. FOLLOWING SYMPTOMS MAY APPEAR LATER: Respiratory difficulties. Possible oedema of the upper respiratory tract. Possible inflammation of the respiratory tract. Possible laryngeal spasm/oedema. Risk of pneumonia. Risk of lung oedema. Body temperature rise. Tremor. Blue/grey discolouration of the skin.  
Symptoms/effects after skin contact : Burns.  
Symptoms/effects after eye contact : Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.  
Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Feeling of weakness. Loss of weight. Change in the haemogramme/blood composition. Slowing ossification. Pain in the joints. Affection/discolouration of the teeth. Lung tissue affection/degeneration.  
Potential adverse human health effects and symptoms : Fatal if swallowed. Fatal in contact with skin. Causes severe skin burns. Fatal if inhaled. Causes serious eye damage. Caution! Substance is absorbed through the skin.

### 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

Fire hazard : DIRECT FIRE HAZARD: Non combustible. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".  
Explosion hazard : INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".  
Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.  
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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According to SANS 10234:2008 and SANS 11014:2010

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

##### 6.1.1. For non-emergency personnel

Protective equipment : Gas-tight suit. Corrosion-proof suit.  
Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapours/spray.

##### 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

For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Dilute toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.  
Methods for cleaning up : Take up liquid spill into absorbent material.  
Other information : Dispose of materials or solid residues at an authorized site.

### 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. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapours/spray.  
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 locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.  
Storage area : Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Unauthorized persons are not admitted. Provide for a tub to collect spills. Meet the legal requirements.  
Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.  
Information on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases. metals.  
Special rules on packaging : SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.  
Packaging materials : SUITABLE MATERIAL: carbon steel. lead. polyethylene. MATERIAL TO AVOID: copper. steel. aluminium. glass.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

HYDROFLUORIC ACID 48% (7664-39-3)	
South Africa - Occupational Exposure Limits (Recommended Limits)	
Local name	Hydrogen flouride - as F
OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
OEL STEL (ppm)	3 ppm
Regulatory reference	Government Notice. R: 1179

#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures, such as personal protective equipment (PPE)

Materials for protective clothing : GIVE GOOD RESISTANCE: tetrafluoroethylene. butyl rubber. GIVE LESS RESISTANCE: natural rubber. neoprene. polyethylene. GIVE POOR RESISTANCE: nitrile rubber. PVA. PVC  
Hand protection : Gloves  
Eye protection : Chemical goggles or safety glasses  
Skin and body protection : Head/neck protection. Corrosion-proof clothing  
Respiratory protection : Full face mask with filter type B. High vapour/gas concentration: self-contained respirator

**Personal protective equipment symbol(s):**

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According to SANS 10234:2008 and SANS 11014:2010



### 8.4. Exposure limit values for the other components

No additional information available

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 20.01 g/mol
Colour	: Colourless.
Odour	: Irritating/pungent odour.
Odour threshold	: No data available
pH	: No data available
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: Not applicable
Freezing point	: -110 – -40 °C
Boiling point	: 30 – 90 °C
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.2
Relative density of saturated gas/air mixture	: No data available
Density	: 1180 – 1230 kg/m <sup>3</sup>
Relative gas density	: No data available
Solubility	: Exothermically soluble in water. Water: complete
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available

### 9.2. Other information

VOC content	: Not applicable (inorganic)
Other properties	: Physical properties depending on the concentration. Volatile. Acid reaction.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with (some) bases.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

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According to SANS 10234:2008 and SANS 11014:2010

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen). On heating: release of toxic and corrosive gases/vapours (hydrofluoric acid).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Fatal if swallowed.
Acute toxicity (dermal)	: Fatal in contact with skin.
Acute toxicity (inhalation)	: Fatal if inhaled.
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Assumed to cause 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
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Fatal if swallowed. Fatal in contact with skin. Causes severe skin burns. Fatal if inhaled. Causes serious eye damage. Caution! Substance is absorbed through the skin.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Before neutralisation, the product may represent a danger to aquatic organisms.
Ecology - air	: None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Harmful to fishes. Contains ground water contaminating component(s). No inhibition of activated sludge. Harmful to algae. Harmful to crustacea. pH shift.
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

#### HYDROFLUORIC ACID 48% (7664-39-3)

Persistence and degradability	Biodegradability: not applicable.
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### 12.3. Bioaccumulative potential

#### HYDROFLUORIC ACID 48% (7664-39-3)

Bioaccumulative potential	Not bioaccumulative.
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### 12.4. Mobility in soil

#### HYDROFLUORIC ACID 48% (7664-39-3)

Mobility in soil	No additional information available
Ecology - soil	No (test)data on mobility of the components available.

### 12.5. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
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According to SANS 10234:2008 and SANS 11014:2010

Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Remove for physico-chemical/biological treatment.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

### SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
<b>14.1. UN number</b>		
1790	1790	1790
<b>14.2. Proper Shipping Name</b>		
HYDROFLUORIC ACID	HYDROFLUORIC ACID	Hydrofluoric acid
<b>14.3. Transport hazard class(es)</b>		
8 (6.1)	8 (6.1)	8 (6.1)
		 Not applicable
<b>14.4. Packing group</b>		
II	II	II
<b>14.5. Environmental hazards</b>		
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available		

### 14.6. Special precautions for user

#### - SANS

Transport regulations (UN) : Subject to the provisions  
Limited quantities (SANS) : 1 L  
Limited quantities (SANS) : 1 L  
Packagings, large packagings and IBCs : P001, IBC02  
Packing instructions (SANS)  
Portable tank and bulk containers instructions (SANS) : T8  
Portable tank and bulk container special provisions (SANS) : TP2

#### - IMDG

Transport regulations (IMDG) : Subject to the provisions  
Limited quantities (IMDG) : 1 L  
Excepted quantities (IMDG) : E2  
Packing instructions (IMDG) : P001  
Special packing provisions (IMDG) : PP81  
IBC packing instructions (IMDG) : IBC02  
IBC special provisions (IMDG) : B20  
Tank instructions (IMDG) : T8  
Tank special provisions (IMDG) : TP2  
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE  
EmS-No. (Spillage) : S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES  
Stowage category (IMDG) : D  
Properties and observations (IMDG) : Colourless liquid with an irritating odour. Highly corrosive to glass, other siliceous materials and most metals. Toxic if swallowed, by skin contact or by inhalation. Both the liquid and its fumes cause severe burns to skin, eyes and mucous membranes.  
MFAG-No : 16

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## Safety Data Sheet

According to SANS 10234:2008 and SANS 11014:2010

### - IATA

Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
ERG code (IATA)	: 8P

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health, and environmental national regulations specific for the product

Regulatory reference	: SANS 10234:2008; SANS 11014:2010; SANS 10228:2012;SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996.
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## SECTION 16: Other information

Issue date	: 21/02/2020
Revision date	: 21/02/2025

Full text of H-statements:

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

SDS South Africa

*The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.*