UN1790 Hydrofluoric acid 48% AGR, ACS, ISO

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Date of issue: 19/05/2016 Revision date: 22/07/2022 Supersedes version of: 18/10/2021 Version: 1.4

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

1.1. Product identifier

Product form	:	Substance
Trade name	:	UN1790 Hydrofluoric acid 48% AGR, ACS, ISO
Chemical name	:	hydrogen fluoride
IUPAC name	:	hydrogen fluoride
EC Index-No.	:	009-002-00-6
EC-No.	:	231-634-8
CAS-No.	:	7664-39-3
Product code	:	FLAC-80A
Formula	:	HF

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

1.2.1. Relevant identified uses

Main use category : Laboratory use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

labbox labware s.l.
Migjorn, 1
P.O. Box Barcelona (SPAIN)
08338 Premia de Dalt – SPAIN
ES
T +34 937 07 79 70 - F +34 937 909 532
info@labbox.com - www.labbox.com

1.4. Emergency telephone number

Emergency number : +34 937 077 970 (For technical information_Office Hours) In case of medical emergency phone 112 or to your local emergency number.

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA	0344 892 0111	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute toxicity (inhal.), Category 2	H330
Acute toxicity (dermal), Category 1	H310
Acute toxicity (oral), Category 2	H300
Skin corrosion/irritation, Category 1A	H314

Full text of H and EUH statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS06 GHS05

Signal word (CLP) : Danger

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

Precautionary statements (CLP) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P309+P311 - IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%
Hydrofluoric acid	CAS-No.: 7664-39-3 EC-No.: 231-634-8 EC Index-No.: 009-002-00-6	> 48

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. Call a physician immediately.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Call a physician immediately.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Consult an eye specialist.

First-aid measures after ingestion : Drink plenty of water. Do not induce vomiting. Call a physician immediately.

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

No additional information available

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

Never give anything by mouth to an unconscious person.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Non combustible.

Hazardous decomposition products in case of fire : Corrosive vapours.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers.

Protection during firefighting : Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage. Do not inhale vapour.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. On land, sweep or shovel into suitable containers.

6.4. Reference to other sections

For further information refer to section 13. See Heading 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin, eyes and clothing.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Store in a well-ventilated place. Keep container tightly closed.

7.3. Specific end use(s)

Laboratory chemicals.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO (7664-39-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Hydrogen fluoride
IOEL TWA	1,5 mg/m³
IOEL TWA [ppm]	1,8 ppm
IOEL STEL	2,5 mg/m³
IOEL STEL [ppm]	3 ppm
France - Occupational Exposure Limits	
Local name	Fluorure d'hydrogène (Acide fluorhydrique)
VME (OEL TWA)	1,5 mg/m³
VME (OEL TWA) [ppm]	1,8 ppm
VLE (OEL Ceiling/STEL)	2,5 mg/m³
VLE (OEL Ceiling/STEL) [ppm]	3 ppm
Remark	Valeurs règlementaires contraignantes
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Fluorwasserstoff
AGW (OEL TWA) [1]	0,83 mg/m³
AGW (OEL TWA) [2]	1 ppm
Remark	DFG,EU,Y,H
Italy - Occupational Exposure Limits	
Local name	Acido fluoridrico
OEL TWA	1,5 mg/m³
OEL TWA [ppm]	1,8 ppm
OEL STEL	2,5 mg/m³
OEL STEL [ppm]	3 ppm
Portugal - Occupational Exposure Limits	
Local name	Ácido fluorídrico , expresso em F
OEL TWA [ppm]	0,5 ppm
OEL Ceiling [ppm]	2 ppm
Spain - Occupational Exposure Limits	
Local name	Fluoruro de hidrógeno
VLA-ED (OEL TWA) [1]	1,5 mg/m³
VLA-ED (OEL TWA) [2]	1,8 ppm
VLA-EC (OEL STEL)	2,5 mg/m³
VLA-EC (OEL STEL) [ppm]	3 ppm
Remark	VLB® (Agente químico que tiene Valor Límite Biológico específico en este documento), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran al menos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembros disponen de un tiempo fijado en dichas directivas para su transposición a los valores límites de cada país miembro. Una vez adoptados, estos valores tienen la misma validez que el resto de los valores adoptados por el país).

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO (7664-39-3)	
United Kingdom - Occupational Exposure Limits	
Local name	Hydrogen fluoride
WEL TWA [1]	1,5 mg/m³ (as F)
WEL TWA [2]	1,8 ppm (as F)
WEL STEL	2,5 mg/m³ (as F)
WEL STEL (ppm)	3 ppm (as F)

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

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO (7664-39-3)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	2,5 mg/m³
Acute - local effects, inhalation	2,5 mg/m³
Long-term - systemic effects, inhalation	1,5 mg/m³
Long-term - local effects, inhalation	1,5 µg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	0,03 mg/m³
Acute - systemic effects, oral	0,01 mg/kg bodyweight/day
Acute - local effects, inhalation	1,25 mg/m³
Long-term - systemic effects,oral	0,01 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0,03 mg/m³
Long-term - local effects, inhalation	0,2 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0,9 mg/l
PNEC aqua (marine water)	0,9 mg/l
PNEC (Soil)	
PNEC soil	11 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	51 mg/l

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. Do not inhale vapour.

8.2.2. Personal protection equipment

Personal protective equipment:
EN 374.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Chemical goggles or 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:
Wear appropriate mask

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Not available
Molecular mass	:	20,01 g/mol
Odour	:	Not available
Odour threshold	:	Not available
Melting point	:	-35 °C
Freezing point	:	Not available
Boiling point	:	106 °C
Flammability	:	Not available
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	:	Soluble.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50 °C	:	Not available
Density	:	1,16 g/ml
Relative density	:	1 Type: 'relative density'
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

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Acids. Metals. Combustible materials.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

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

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

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO (7664-39-3)	
LC50 inhalation rat (mg/l)	1059 mg/m³

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

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

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

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

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

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

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO (7664-39-3)	
LC50 - Fish [1]	51 mg/l Test organisms (species): other:summary of finidngs in various species
LC50 - Fish [2]	165 mg/l Test organisms (species): other:summary of finidngs in various species
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

No additional information available

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

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

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Must follow special treatment according to local regulation.

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) : UN 1790

UN-No. (RID) : UN 1790

14.2. UN proper shipping name

Proper Shipping Name (ADR) : HYDROFLUORIC ACID

Proper Shipping Name (IMDG) : HYDROFLUORIC ACID

Proper Shipping Name (IATA) : Hydrofluoric acid

Proper Shipping Name (ADN) : HYDROFLUORIC ACID

Proper Shipping Name (RID) : HYDROFLUORIC ACID

Transport document description (ADR) : UN 1790 HYDROFLUORIC ACID, 8 (6.1), II, (E)

Transport document description (IMDG) : UN 1790 HYDROFLUORIC ACID, 8 (6.1), II

Transport document description (IATA) : UN 1790 Hydrofluoric acid, 8 (6.1), II

Transport document description (ADN) : UN 1790 HYDROFLUORIC ACID, 8 (6.1), II

Transport document description (RID) : UN 1790 HYDROFLUORIC ACID, 8 (6.1), II

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 (6.1)

Danger labels (IMDG) : 8, 6.1

:

IATA

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

Danger labels (IATA) : 8, 6.1

:

ADN

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

Danger labels (ADN) : 8, 6.1

:

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) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

14.5. Environmental hazards

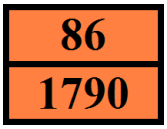
Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR)	:	CT1
Limited quantities (ADR)	:	1l
Excepted quantities (ADR)	:	E2
Packing instructions (ADR)	:	P001, IBC02
Mixed packing provisions (ADR)	:	MP15
Portable tank and bulk container instructions (ADR)	:	T8
Portable tank and bulk container special provisions (ADR)	:	TP2
Tank code (ADR)	:	L4DH
Tank special provisions (ADR)	:	TU14, TE21
Vehicle for tank carriage	:	AT
Transport category (ADR)	:	2
Special provisions for carriage - Loading, unloading and handling (ADR)	:	CV13, CV28
Hazard identification number (Kemler No.)	:	86
Orange plates	:	
Tunnel restriction code (ADR)	:	E
EAC code	:	2W
APP code	:	B

Transport by sea

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
EmS-No. (Spillage)	:	S-B
Stowage category (IMDG)	:	D
Stowage and handling (IMDG)	:	SW1, SW2, H2
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.

Air transport

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

Inland waterway transport

Classification code (ADN)	:	CT1
Special provisions (ADN)	:	802
Limited quantities (ADN)	:	1 L
Excepted quantities (ADN)	:	E2
Equipment required (ADN)	:	PP, EP, TOX, A
Ventilation (ADN)	:	VE02
Number of blue cones/lights (ADN)	:	2

Rail transport

Classification code (RID)	:	CT1
Limited quantities (RID)	:	1L
Excepted quantities (RID)	:	E2
Packing instructions (RID)	:	P001, IBC02
Mixed packing provisions (RID)	:	MP15
Portable tank and bulk container instructions (RID)	:	T8
Portable tank and bulk container special provisions (RID)	:	TP2
Tank codes for RID tanks (RID)	:	L4DH
Special provisions for RID tanks (RID)	:	TU14, TE17, TE21, TT4
Transport category (RID)	:	2
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW13, CW28
Colis express (express parcels) (RID)	:	CE6
Hazard identification number (RID)	:	86

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)

EU restriction list (REACH Annex XVII)	
Reference code	**Applicable on**
3.	UN1790 Hydrofluoric acid 48% AGR, ACS, ISO

REACH Annex XIV (Authorisation List)

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO is not on the REACH Annex XIV List

REACH Candidate List (SVHC)

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO is not on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 july 2012 concerning the export and import of hazardous chemicals.

POP Regulation (Persistent Organic Pollutants)

UN1790 Hydrofluoric acid 48% AGR, ACS, ISO is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

Hydrofluoric acid is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Drug Precursors Regulation (273/2004)

Contains no substance subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 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

France

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

Germany

Water hazard class (WGK) : WGK 2, Significantly hazardous to water (Classification according to VwVwS, Annex 3; ID No. 254).

Chemicals Prohibition Ordinance (ChemVerbotsV) : This product is subject to ChemVerbotsV Annex 2 Entry 1. The following requirements must be observed: authorization requirement (according to § 6 paragraph 1 sentence 1), basic requirements for carrying out the delivery (according to § 8 paragraph 1, 3 and 4), identification and documentation (according to § 9 paragraph 1 to 3) and exclusion of the shipping route (according to § 10).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 1 (Dermal)	Acute toxicity (dermal), Category 1
Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
Skin Corr. 1A	Skin corrosion/irritation, Category 1A

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.