
		LE VERT HF		Approved by: J. BLOMET 	Safety Data Sheet
				Page number: 1/7	
Process: REALIZE	File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Update: 1	

In accordance with European Regulation 1272/2008 (CLP)
SDS read in accordance with European Regulation 2015/830 (REACH)

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING[#]

1.1. Product identifier:

Le Vert HF

Other denomination:

Aqueous solution containing amphoteric and chelating salts.

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

1.2.1. Relevant identified uses of the substance or mixture:

Chemical decontamination of materials and equipment in contact with hydrofluoric acid or its derivatives.

1.2.2. uses advised against:

Le Vert HF decontaminant is not recommended for the washing of ocular and cutaneous splashes of hydrofluoric acid, its derivatives or another type of chemical.

1.3. Details of the supplier of the safety data sheet:

PREVOR

Moulin de Verville

BP1

95760 VALMONDOIS

FRANCE

Telephone: +33(0)1 30 34 76 76

Fax: +33(0)1 30 34 76 70

fds@prevor.com

1.4. Emergency telephone number:

+33(0)1 30 34 76 76 (business hours, GMT+1).

SECTION 2. HAZARDS IDENTIFICATION[#]

2.1. Classification of the mixture:

Non-hazardous mixture in accordance with Regulation 1272/2008/EC.

The mixture being non-hazardous, it does not require legally SDS according to the article 31 of the Directive 1907/2006 and seen the modifications of this article in the Directive 1272/2008 (article 57).

2.2. Label elements:

The mixture being non-hazardous, no danger and warning labelling is necessary.

2.3. Other hazards:

No other danger known to date.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS[#]

3.2. Mixture:

No hazardous ingredients.

Name	CAS N°	wp %
Amphoteric and chelating salts	proprietary	proprietary
Water	7732-18-5	balance

Impurities:

No hazardous impurities.

SECTION 4. FIRST AID MEASURES[#]

4.1. Description of first aid measures:

4.1.1. Inhalation:

This is not the major route of exposure. The product is non-toxic by inhalation. In case of adverse effects, consult a doctor.



4.1.2. Eye contact:

In case of ocular exposure, use a washing solution from PREVOR product range like Afterwash II[®] solution or the Washing Solution, or if not available, physiological serum or any sterile ocular solution.

4.1.3. Skin contact:

No specific hazards. For comfort, the skin can be rinsed with tap water.

[#] Indicates data modified since the last update.

		LE VERT HF		Approved by: J. BLOMET 	Safety Data Sheet
Process: REALIZE	File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Page number: 2/7	
				Update: 1	

4.1.4. Ingestion:

This is not the major route of exposure. Non-toxic product by oral exposure. In case of adverse effects, consult a doctor.

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

No known unwanted effects.

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

No specific care.

SECTION 5. FIREFIGHTING MEASURES[#]

This product is non-inflammable and non-combustible.

5.1. Extinguishing media:

Water spray, carbon dioxide, dry chemical, foam, dry powder or any "ABC" class device.

5.2. Special hazards arising from the substance or mixture :

Thermal decomposition above 100°C in toxic products: carbon monoxide and dioxide, nitrogen oxides and organic vapours.

5.3. Advice for firefighters:

In case of fire, wear self-contained breathing apparatus identical to that usually carried during any fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES[#]

6.1. Personal precautions, protective equipment and emergency procedures:

In case of ocular exposure, use a washing solution from PREVOR product range like Afterwash II[®] solution or the Washing Solution, or if not available, physiological serum or any sterile ocular solution.

6.2. Environmental precautions:

Even if the mixture is not ecotoxic, limit discharges into the environment (sewers, rivers, soils).

6.3 Methods and material for containment and cleaning up:

No specific precautions. This product can be absorbed, for example, with an absorbent from PREVOR product range like Polycaptor[®] polyvalent absorbent or Trivorex[®] polyvalent neutralizing absorbent.

6.4. Reference to other sections:

See sections 8 and 13.

SECTION 7. HANDLING AND STORAGE[#]

7.1. Precautions for safe handling:

No specific precautions.

7.2. Conditions for safe storage, including any incompatibilities:

Keep well closed in the original packaging. This product has a three years shelf-life if kept sealed in its original packaging.

When possible, store containers in a cool, dry location, and protect from frost or any source of intense heat (storage temperature between 2 and 50 °C).

The product is stable in normal storage, handling and use.

Do not store in corrosive environment.

7.3. Specific end use(s):

Chemical decontamination of materials and equipment in contact with hydrofluoric acid or its derivatives.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION[#]

8.1. Control parameters:

No known exposure limit.

8.2. Exposure control:

8.2.1. Appropriate engineering controls:

No specific precautions for Le Vert HF decontaminant.



Use adequate ventilation to prevent exposure to the chemical which contaminates materials or equipment.

8.2.2. individual protection measures, such as personal protective equipment :

Eye/face protection:

Safety goggles.

[#] Indicates data modified since the last update.

		LE VERT HF		Approved by: J. BLOMET 	Safety Data Sheet
				Page number: 3/7	
Process: REALIZE	File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Update: 1	

Skin protection:

Hand protection:

No protection is required.

Other:

No additional necessary protection.

Respiratory protection:

No protection is required.

Thermal risk:

No thermal risk with Le Vert HF decontaminant.

Protection for the users:

Wear safety goggles for Le Vert HF decontaminant. This mixture is a non-sterile solution.

Wear safety equipment appropriate for the type of chemical to be decontaminated.

8.2.3. Environmental exposure controls:

Recover washing residue with, for example, an absorbent from PREVOR range like Polycaptor® polyvalent absorbent, Trivorex® polyvalent neutralizing absorbent or Acicaptal® specific neutralizing absorbent for acids.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES[#]

9.1. Information on basic physical and chemical properties:

a) Appearance (at 20 °C):

Clear and colourless liquid.

b) Odour:

Odourless.

c) Odour detection threshold:

Non applicable because the mixture is odourless.

d) pH:

pH from 7.2 to 7.7 (at 20 °C).

e) Melting point / freezing point:

-1 °C.

f) Initial boiling point and boiling range:

100 °C.

g) Flash point:

Non applicable because the mixture is non-flammable.

h) Evaporation rate:

1 (water = 1).

i) Flammability (solid, gas):

The mixture is non-flammable.

j) Upper / lower flammability or explosive limits:

Non applicable because Le Vert HF decontaminant is not flammable.

k) Vapour pressure:

18 mm Hg (20 °C).

l) Vapour density:

Non determined.

m) Relative density:

1.046 g.cm⁻³.

n) Solubility (ies):

100 % miscible in water.

Slightly miscible in organic solvents.

o) Partition coefficient n-octanol/water:

100 % miscible in water.

p) Auto-ignition temperature:

Non applicable because the mixture is non-flammable.


q) Decomposition temperature:

Thermal decomposition above 100°C.

r) Viscosity:

Similar to the viscosity of water.

[#] Indicates data modified since the last update.

	LE VERT HF		Approved by: J. BLOMET <u>J. BL</u>	Safety Data Sheet
				Page number: 4/7
Process: REALIZE	File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Update: 1

s) Explosive properties:

No explosive property.

t) Oxidizing properties:

No oxidising property.

9.2. Other information:

None known to date.

SECTION 10. STABILITY AND REACTIVITY[#]

10.1. Reactivity:

The mixture is non-reactive.

10.2. Chemical stability:

Stable in the conditions recommended for storage.

10.3. Possibility of hazardous reactions:

None known to date (no hazardous polymerization, no decomposition, no condensation and no self-reactivity expected).

10.4. Conditions to avoid:

Do not store at a temperature lower than 2 °C or at a temperature higher than 50 °C.

10.5. Incompatible materials:

None known to date.

10.6. Hazardous decomposition products:

Thermal decomposition above 100 °C with liberation of carbon monoxide and dioxide, nitrogen oxides and organic vapours.

SECTION 11. TOXICOLOGICAL INFORMATION[#]

11.1. Information on toxicological effects (all tests for this section are performed on similar molecule):

a) Acute toxicity:

LD₅₀ (oral in rat) > 2000 mg.kg⁻¹.

b) Skin corrosion / irritation:

Non-irritant and non-corrosive (*in-vitro* tests Dermal Irritation[®] method).

c) Serious eye damage / irritation:

Non-irritant and non-corrosive (*in-vitro* tests on human fibroblasts).

d) Respiratory or skin sensitisation:

Non-sensitising (Magnusson & Kligman method on guinea pig).

Hypoallergenic (Marzulli-Maibach method on volunteers).

Non-anti-inflammatory (MTT *in-vitro* test and IL-1 α pro-irritation potential).

e) Germ cell mutagenicity:

Non-mutagenic (Ames test negative).

f) Carcinogenicity:

Not determined.

g) Reproductive toxicity:

Not determined.

h) Specific target organ toxicity – single exposure:

Not determined.

i) Specific target organ toxicity – repeated exposure:

Not determined.

j) Aspiration hazard:



No local effects on the respiratory tract during ingestion or aspiration other than those that can occur with water.

k) Other informations:

Local skin tolerance (occlusive test on healthy volunteers): non-irritant.

Local skin tolerance on damaged skin / healthy skin (non-occlusive and semi-occlusive test): no irritant or toxic effect (test on rabbit).

[#] Indicates data modified since the last update.

		LE VERT HF		Approved by: J. BLOMET 	Safety Data Sheet
Process: REALIZE	File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Page number: 5/7	
				Update: 1	

SECTION 12. ECOLOGICAL INFORMATION[#]

Le Vert HF decontaminant is not harmful if released into the environment.

12.1. Toxicity (all tests are performed on similar molecule):

12.1.1. Microtoxicity:

No known adverse effects on *Photobacterium phosphoreum* :

EC₅₀ 15 min at 8.63 % (or at 5136 mg.L⁻¹).

EC₅₀ 30 min at 9.8 % (or at 5832 mg.L⁻¹).

12.1.2. Aquatic toxicity:

No known adverse effects on *Daphnia Magna* :

EC₅₀ 24h at 9.5 % (or at 5664 mg.L⁻¹).

12.2. Persistence and degradability:

Non persistent. Le Vert HF decontaminant is stable, but will decompose into simple salts in the environment.

12.3. Bioaccumulative potential:

Le Vert HF decontaminant is not bioaccumulable (log Ko/w: 100 % miscible in water).

12.4. Mobility in soil:

Not determined.

12.5. Results of PBT and vPvB assessment:

Not applicable because the chemical safety report is not required.

12.6. Other adverse effects:

No known adverse effects known to date.

SECTION 13. DISPOSAL CONSIDERATIONS[#]

13.1. Waste treatment methods:

No specific disposal measures for the non-hazardous aqueous solution (possible waste code 16 10 02).

Containers can be used to produce energy by incineration (waste code 15 01 02). The containers can also be recycled or reused (after cleaning).

The amalgam of absorbent and Le Vert HF decontaminant can be treated by incineration like absorbents waste contaminated with dangerous substances (waste code 15 02 02*).

Do not discharge into the environment.

Refer to national or regional legislation on waste treatment.

SECTION 14. TRANSPORT INFORMATION[#]

14.1. UN number:

Non applicable (see section 2).

14.2. UN proper shipping name:

Non applicable.

14.3. Transport hazard class(es):

There is no regulation to be applied to transport products containing le Vert HF decontaminant.

RID: Non applicable.

ADN: Non applicable.

ADR: Non applicable.

IMDG: Non applicable.

IATA (ICAO): Non applicable.

14.4. Packing group:

Non applicable.

14.5. Environmental hazards:

Le Vert HF decontaminant presents no danger for the environment and is not a marine pollutant.



14.6. Special precautions for user:

No special precautions to be taken by the user.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

As the products are delivered conditioned, this subsection is not applicable.

[#] Indicates data modified since the last update.

		LE VERT HF		Approved by: J. BLOMET 	Safety Data Sheet
Process: REALIZE	File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Page number: 6/7	
				Update: 1	

SECTION 15. REGULATORY INFORMATION[#]

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

Classified as non-hazardous in accordance with the European Regulations concerning labelling of hazardous mixtures: regulations 1272/2008/EC (CLP).

Regulatory reference: Regulation 2015/830/EC (REACH).

Regulation 2015/830/EC modifying regulation n° 453/2010/EC and n° 1907/2006/EC of European Parliament and Council concerning recording, evaluation and authorization of chemical substances, as well as limitations applicable to these substances (REACH).

15.2. Chemical Safety Assessment:

Non applicable.

SECTION 16. OTHER INFORMATION[#]

Recommended use:

This mixture is a solution for chemical decontamination of materials and equipment in contact with hydrofluoric acid or its derivatives. Le Vert HF decontaminant can also be used in addition to Trivorex[®] polyvalent neutralizing absorbent or Acicaptal[®] specific neutralizing absorbent for acids, on corrosive chemical spills, in order to facilitate the neutralization.

Recommendation before use:

- 1- Store Le Vert HF decontaminant near to potential risk.
- 2- Read operating instructions.
- 3- Use Le Vert HF decontaminant as quickly as possible.
- 4- Ventilate the area if necessary.
- 5- Use safety equipment appropriate for the type of chemical which contaminates material or equipment.


Instructions for use:

- 1- Rinse contaminated material or equipment with pure Le Vert HF decontaminant.
- 2- Rinse the decontaminated material or equipment with water.
- 3- Wipe with a dry cloth.
- 4- Then use your cleaner.

Cautions:

- 1- Le Vert HF decontaminant is a solution for chemical decontamination of materials and equipment. Do not use for skin or eyes decontamination because this product is non-sterile. However, in case of user mistake, Le Vert HF decontaminant does not represent an additional risk compared to the contaminating chemical.
- 2- For human decontamination, it is recommended to use a solution from PREVOR product range. Hexafluorine[®] solution can be used in case of contact with hydrofluoric acid or its derivatives. Diphoterine[®] or Previn solutions are recommended for the other chemicals.
- 3- In case of contamination of glass surface with hydrofluoric acid or its derivatives, it is recommended to use Anti-Etch decontaminant, manufactured by PREVOR.
- 4- As Le Vert HF decontaminant is less effective on a basic solution, it is recommended to use Le Vert decontaminant for the decontamination of fluoride in basic solution or other basic solution.
- 5- Chemical miscible with water will be cleaned by mechanical driving force. Liquids that are sticky, viscous or non-miscible with water will not be optimally cleaned.
- 6- Metal surfaces are subject to corrosion. Metal surfaces must be rinsed with water and wiped with cloth after using Le Vert decontaminant.
- 7- Do not discharge Le Vert HF decontaminant or decontamination residues into the environment.

[#] Indicates data modified since the last update.

		LE VERT HF		Approved by: J. BLOMET 	Safety Data Sheet
Process: REALIZE		File: FDS	Reference : GRV_QAL_FDS_Le Vert HF_en	Effective Date: 17.12.2015	Page number: 7/7 Update: 1

Abbreviations:

HF: hydrofluoric acid.

CLP: Classification, Labelling and Packaging of substance and mixtures. It constitutes the European implementation of the UN's Globally Harmonized System (GHS).

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals.

EC: European Commission.

SDS: Safety Data Sheet.

GMT: Greenwich Mean Time.

CAS n°: Chemical Abstract Service (registry) number.

wt. %: weight percent. It is the ratio of the mass of one element to the total mass of a compound.

"ABC" class device: extinguisher for A class fire (coming from solid materials containing organic materials such as wood, cotton, paper, grass, plastic), B class fire (coming from flammable liquids) or C class fire (coming from gas).

In-vitro MTT test: test performed with tetrazolium salt reagent (MTT reagent).

LD₅₀: Lethal Dose. Median lethal dose of a substance, or the amount required to kill 50 % of a given test population.

EC₅₀: half maximal Effective Concentration. It refers to the concentration of a drug, antibody or toxicant which induces a response halfway between the baseline and maximum after a specified exposure time.

RID: Regulations concerning the International carriage of Dangerous goods by rail.

ADN: International transport of goods by ways of inner navigation.

ADR: Accord for Dangerous goods by Road.

IMDG: International Maritime Dangerous Goods.

IATA (ICAO): International Civil Aviation Organization.

This sheet complements the technical sheets but does not replace them. The information that is contained herein is based on the state of our knowledge related to the product concerned at the date of issue and is given in good faith. Moreover, the user's attention is drawn to the possible risks incurred by using the product for any other use than that for which it was intended.

Indicates data modified since the last update.