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

· **1.1 Product identifier**

· **Trade name: Ferrol**

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Life cycle stages** PW Widespread use by professional workers
· **Sector of Use**
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
· **Application of the substance / the mixture**
Dry-cleaning
Spotting agent, stain remover

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SEITZ GmbH
Gutenbergstrasse 1 - 3
65830 Kriftel / Germany
Tel. + 49(0) 6192-9948-0
Fax + 49(0) 6192-9948-99
order@seitz24.com
www.seitz24.com

· **Further information obtainable from:** sds@seitz24.com
· **1.4 Emergency telephone number:**
GIZ-Nord, Göttingen, Germany + 49 551 19240
(Member of EPECS)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 2 H310 Fatal in contact with skin.


GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.


GHS07

Acute Tox. 4 H332 Harmful if inhaled.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.

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· **Hazard pictograms**

GHS05 GHS06

· **Signal word** Danger

· **Hazard-determining components of labelling:**
hydrofluoric acid
Oxalic acid dihydrate

· **Hazard statements**
H301 Toxic if swallowed.
H310 Fatal in contact with skin.
H332 Harmful if inhaled.
H314 Causes severe skin burns and eye damage.

· **Precautionary statements**

P280	Wear protective gloves / eye protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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/doctor.
P330	Rinse mouth.

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

· **Dangerous components:**		
CAS: 5949-29-1 EINECS: 201-069-1 Reg.nr.: 01-2119457026-42-xxxx	Citric acid monohydrate Eye Irrit. 2, H319	< 15%
CAS: 7664-39-3 EINECS: 231-634-8	hydrofluoric acid Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Skin Corr. 1A, H314	< 5%
CAS: 6153-56-6 Reg.nr.: 01-2119534576-33-xxxx	Oxalic acid dihydrate Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312	< 5%

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information**
Remove casualties from exposure.
Keep unprotected persons away.
Immediately remove any clothing soiled by the product.
Personal protection for the First Aider.
Involve doctor immediately.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation** Supply fresh air or oxygen; call for doctor.
· **After skin contact**
Immediately rinse with water.
Rub in Ca-gluconate solution or Ca-gluconate gel immediately.
Call a doctor immediately.
· **After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.
Protect unharmed eye.
· **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
· **4.2 Most important symptoms and effects, both acute and delayed**
Causes severe skin burns and eye damage.
· **Hazards** Danger of fluorosis.
· **4.3 Indication of any immediate medical attention and special treatment needed**
Symptomatic treatment

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
· **For safety reasons unsuitable extinguishing agents** No further relevant information available.
· **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Hydrogen fluoride (HF)
Under certain fire conditions, traces of other toxic gases cannot be excluded.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
· **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.

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Remove persons from danger area.
Avoid contact with skin and eyes.
Ensure adequate ventilation
· **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Keep away from heat and direct sunlight.
Avoid contact with eyes and skin.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Unsuitable material for receptacle: glass or ceramic.
Provide acid-resistant floor.
Provide floor trough without outlet.
· **Information about storage in one common storage facility:** Store away from foodstuffs.
· **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Protect from heat and direct sunlight.
Store in cool, dry conditions in well sealed receptacles.
Protect from frost.
Time of storage: max. 24 month
· **7.3 Specific end use(s)** Dry-cleaning

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SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
CAS: 7664-39-3 hydrofluoric acid	
WEL	Short-term value: 2.5 mg/m³, 3 ppm Long-term value: 1.5 mg/m³, 1.8 ppm

· **Regulatory information** WEL: EH40/2011
· **Additional information:** The lists valid during the making were used as basis.

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· **8.2 Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Do not eat, drink, smoke or sniff while working.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Use skin protection cream for skin protection.
Do not inhale gases / vapours / aerosols.
· **Respiratory protection:**
Ensure good ventilation/exhaustion at the workplace.
Use suitable respiratory protective device in case of insufficient ventilation (exceeding the workplace limit values, formation of aerosols).
Combination filter E-P2
Combination filter E-P3
· **Protection of hands:**
Acid resistant gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Material of gloves**
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Fluorocarbon rubber (Viton)
Recommended thickness of the material: ≥ 0.4 mm
· **Eye protection:** Tightly sealed goggles.
· **Body protection:** Acid resistant protective clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Fluid
Colour:	Colourless
· **Odour:**	Odourless
· **Odour threshold:**	No further relevant information available.
· **pH-value (100 g/l) at 20 °C:**	~ 2.2

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· **Change in condition**	
Melting point/Melting range:	undetermined
Boiling point/Boiling range:	undetermined
· **Flash point:**	not applicable
· **Flammability (solid, gaseous)**	No further relevant information available.
· **Ignition temperature:**	No further relevant information available.
· **Decomposition temperature:**	No further relevant information available.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	No further relevant information available.
Upper:	No further relevant information available.
· **Oxidising properties**	No further relevant information available.
· **Vapour pressure:**	No further relevant information available.
· **Density at 20 °C:**	~ 1.02 g/cm3
· **Relative density**	No further relevant information available.
· **Vapour density**	No further relevant information available.
· **Evaporation rate**	No further relevant information available.
· **Solubility in / Miscibility with**	
Water:	Fully miscible
· **Segregation coefficient (n-octonol/water):**	No further relevant information available.
· **Viscosity:**	
dynamic:	No further relevant information available.
kinematic:	No further relevant information available.
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
Stable under normal ambient conditions.
No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions**
Reacts with strong alkali
Reacts with certain metals
Reacts with acids
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:**
Glass / Ceramic
Alkalis (lyes)
Certain metals
KMnO4
· **10.6 Hazardous decomposition products:** None if used as directed.

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SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity**
Toxic if swallowed.
Fatal in contact with skin.
Harmful if inhaled.

· **LD/LC50 values relevant for classification:**		
CAS: 5949-29-1 Citric acid monohydrate		
Oral	LD50	5400 mg/kg (mouse) (OECD 401)
Dermal	LD50	> 2000 mg/kg (rat)
CAS: 7664-39-3 hydrofluoric acid		
Oral	LD50	5 mg/kg (ATE)
	ATE	5 mg/kg bw (/)
Dermal	LD50	5 mg/kg (ATE)
	ATE	5 mg/kg bw (/)
Inhalative	LC50 (4h)	0.5 mg/l (ATE)
CAS: 6153-56-6 Oxalic acid dihydrate		
Oral	LD50	500 mg/kg (ATE)
Dermal	LD50	20000 mg/kg (rabbit)

· **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
· **Serious eye damage/irritation**
Causes serious eye damage.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
CAS: 5949-29-1 Citric acid monohydrate	
LC50	440 - 760 mg/l (Fish) (96 h; Leuciscus idus)
	120 mg/l (Aquatic invertebrates) (72 h; Daphnia magna)
CAS: 7664-39-3 hydrofluoric acid	
EC50	97 mg/l (Aquatic invertebrates) (48 h; Daphnia magna)
LC50	165 mg/l (Fish) (96 h; Salmo gairdneri)
ErC50	122 mg/l (Aquatic plants, algae) (96 h; Scenedesmus subspicatus)
CAS: 6153-56-6 Oxalic acid dihydrate	
EC50	80 mg/l (Aquatic plants, algae) (8 h)

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	162.2 mg/l (Aquatic invertebrates) (48 h; Daphnia; OECD 202)
LC50	160 mg/l (Fish) (96 h)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.
Disposal must be made according to official regulations.
· **Waste disposal key:**
The assignment of waste codes in accordance with European Waste Catalogue (EWC) is trade- and process-specific and has to be made in compliance with national and local regulations.
· **Uncleaned packaging:**
· **Recommendation:**
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**
· **ADR, IMDG, IATA** UN1790

· **14.2 UN proper shipping name**
· **ADR** 1790 HYDROFLUORIC ACID mixture
· **IMDG, IATA** HYDROFLUORIC ACID mixture

· **14.3 Transport hazard class(es)**

· **ADR**

· **Class** 8 (CT1) Corrosive substances.

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· **Label**	8+6.1
· **IMDG**	
	
· **Class**	8 Corrosive substances.
· **Label**	8/6.1
· **IATA**	
	
· **Class**	8 Corrosive substances.
· **Label**	8 (6.1)
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	II
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Warning: Corrosive substances.
· **Danger code (Kemler):**	86
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Acids
· **Stowage Category**	D
· **Stowage Code**	SW1 Protected from sources of heat. SW2 Clear of living quarters.
· **Handling Code**	H2 Keep as cool as reasonably practicable
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **Transport category**	2
· **Tunnel restriction code**	E
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 1790 HYDROFLUORIC ACID MIXTURE, 8 (6.1), II

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SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Seveso category** H2 ACUTE TOXIC
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
· **National regulations**
· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is listed.

· **Other information:** Product is for professional use only.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H300 Fatal if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
· **Classification according to Regulation (EC) No 1272/2008**
Classification of mixtures based on ingredients of the mixture, applying calculation method of assessing health and environmental hazards
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 1: Acute toxicity – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
· *** Data compared to the previous version altered.**