



Safety Data Sheet according to (EC) No 1907/2006 as amended

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BONDERITE C-IC SMUTGO NC AERO known as TURCO Liquid Smut
Go NC

SDS No. : 48753
V011.0
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

BONDERITE C-IC SMUTGO NC AERO known as TURCO Liquid Smut Go NC

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

Intended use:
Etching Agents for Metals

1.3. Details of the supplier of the safety data sheet

Henkel Ltd
Adhesives
Wood Lane End
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

ua-productsafety.uk@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.com.

1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Corrosive to metals	Category 1
H290 May be corrosive to metals.	
Acute toxicity	Category 4
H302 Harmful if swallowed.	
Route of Exposure: Oral	
Acute toxicity	Category 3
H311 Toxic in contact with skin.	
Route of Exposure: Dermal	
Skin corrosion	Category 1B
H314 Causes severe skin burns and eye damage.	
Serious eye damage	Category 1
H318 Causes serious eye damage.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

diiron tris(sulphate)

Nitric acid

hydrofluoric acid

Signal word:

Danger

Hazard statement:

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.

Supplemental information

Can attack glass and vitreous materials.

**Precautionary statement:
Prevention**

P260 Do not breathe mist/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement:
Response**

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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 or doctor.

2.3. Other hazards

None if used properly.
Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

Following substances are present in a concentration $\geq 0,1\%$ and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in concentration \geq the concentration limit that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Base substances of preparation:

inorganic acids
inorganic salts

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
diiron tris(sulphate) 10028-22-5 233-072-9 01-2119513202-59	20- 40 %	Acute Tox. 4, Oral, H302 Skin Irrit. 2, H315 Met. Corr. 1, H290 Eye Dam. 1, H318		
Nitric acid 7697-37-2 231-714-2 01-2119487297-23	5- < 10 %	Met. Corr. 1, H290 Ox. Liq. 3, H272 Skin Corr. 1A, H314 Acute Tox. 3, Inhalation, H331	Skin Corr. 1B; H314; C 5 - < 20 % Skin Corr. 1A; H314; C >= 20 % Ox. Liq. 3; H272; C >= 65 % ===== inhalation:ATE = 2,651 mg/l;vapour	EU OEL EUEXPL1D
hydrofluoric acid 7664-39-3 231-634-8 01-2119458860-33	0,1- < 1 %	Acute Tox. 2, Inhalation, H330 Acute Tox. 2, Oral, H300 Acute Tox. 1, Dermal, H310 Skin Corr. 1A, H314	Skin Corr. 1A; H314; C >= 7 % Eye Irrit. 2; H319; C 0,1 - < 1 % Skin Corr. 1B; H314; C 1 - < 7 %	EU OEL

**For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.
Declaration of ingredients according to Detergent Regulation 648/2004/EC**

The preparation does not contain any ingredients to be labelled according to this regulation.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Move to fresh air.
Immediate medical treatment necessary.

Skin contact:
Remove contaminated clothes while protecting yourself. Immediately rinse with copious amounts of running water (for 10 minutes). Then immediately treat contaminated skin with 2,5% Ca-gluconate gel. Put on a bandage with sterile gauze. GET MEDICAL ATTENTION IMMEDIATELY! Can penetrate into deeper parts of the skin and cause burns which are very painful and cure very slowly.

Eye contact:
Immediately flush eyes with soft jet of water or eye rinse solution for at least 15 minutes. Hold eyelid wide-open. Seek a doctor/hospital, eye flushing should continue during transportation to a doctor.

Ingestion:
Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Immediate medical treatment necessary.

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

Causes burns.

INGESTION: Nausea, vomiting, diarrhea, abdominal pain.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

All common extinguishing agents are suitable.

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

Caution: effect of nitrous gases is realized often after hours.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

Additional information:

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Neutralize with acid-binding material (e.g. powdered limestone).

Take up with liquid-absorbing material (sand).

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

When diluting, always stir slowly the product into standing water.

Avoid skin and eye contact.

Ensure that workrooms are adequately ventilated.

See advice in section 8

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke when using this product.

Wash contaminated clothing before reuse.

The workplace should be equipped with an emergency shower and eye-rinsing facility.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container.

Keep container tightly sealed.

Store protected from heat influence.

Keep only in original container.

Keep away from strongly alkaline products.

7.3. Specific end use(s)

Etching Agents for Metals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Diiron tris(sulphate) 10028-22-5 [IRON SALTS (AS FE)]		1	Time Weighted Average (TWA):		EH40 WEL
Diiron tris(sulphate) 10028-22-5 [IRON SALTS (AS FE)]		2	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Nitric acid 7697-37-2 [NITRIC ACID]	1	2,6	Short Term Exposure Limit (STEL):	Indicative	ECLTV
Nitric acid 7697-37-2 [NITRIC ACID]	1	2,6	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE (AS F)]	1,8	1,5	Time Weighted Average (TWA):		EH40 WEL
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]	1,8	1,5	Time Weighted Average (TWA):	Indicative	ECLTV
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]	3	2,5	Short Term Exposure Limit (STEL):	Indicative	ECLTV
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE (AS F)]	3	2,5	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Diiron tris(sulphate) 10028-22-5 [IRON SALTS]		1	Time Weighted Average (TWA):		IR_OEL
Diiron tris(sulphate) 10028-22-5 [IRON SALTS]		2	Short Term Exposure Limit (STEL):	15 minutes	IR_OEL
Nitric acid 7697-37-2 [NITRIC ACID]	1	2,6	Short Term Exposure Limit (STEL):	Indicative	ECLTV
Nitric acid 7697-37-2 [NITRIC ACID]	1	2,6	Short Term Exposure Limit (STEL):	15 minutes Indicative OELV	IR_OEL
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]	1,8	1,5	Time Weighted Average (TWA):	Indicative	ECLTV
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]	3	2,5	Short Term Exposure Limit (STEL):	Indicative	ECLTV
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]	1,8	1,5	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]	3	2,5	Short Term Exposure Limit (STEL):	15 minutes Indicative OELV	IR_OEL
Hydrogen fluoride 7664-39-3 [HYDROGEN FLUORIDE]			Skin designation:	Can be absorbed through the skin.	IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
diiron tris(sulphate) 10028-22-5	sewage treatment plant (STP)		500 mg/l				
diiron tris(sulphate) 10028-22-5	sediment (freshwater)				49,5 mg/kg		
diiron tris(sulphate) 10028-22-5	sediment (marine water)				49,5 mg/kg		
diiron tris(sulphate) 10028-22-5	Soil				55,5 mg/kg		
hydrogen fluoride 7664-39-3	aqua (freshwater)		0,9 mg/l				
hydrogen fluoride 7664-39-3	aqua (marine water)		0,9 mg/l				
hydrogen fluoride 7664-39-3	Soil				11 mg/kg		
hydrogen fluoride 7664-39-3	sewage treatment plant (STP)		51 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
diiron tris(sulphate) 10028-22-5	Workers	dermal	Long term exposure - systemic effects		2,8 mg/kg	
diiron tris(sulphate) 10028-22-5	General population	dermal	Long term exposure - systemic effects		1,4 mg/kg	
diiron tris(sulphate) 10028-22-5	General population	oral	Long term exposure - systemic effects		0,28 mg/kg	
diiron tris(sulphate) 10028-22-5	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg	
nitric acid 7697-37-2	Workers	Inhalation	Acute/short term exposure - local effects		2,6 mg/m3	
nitric acid 7697-37-2	Workers	Inhalation	Long term exposure - local effects		1,3 mg/m3	
nitric acid 7697-37-2	General population	Inhalation	Acute/short term exposure - local effects		1,3 mg/m3	
nitric acid 7697-37-2	General population	Inhalation	Long term exposure - local effects		0,65 mg/m3	
hydrogen fluoride 7664-39-3	Workers	Inhalation	Acute/short term exposure - local effects		2,5 mg/m3	
hydrogen fluoride 7664-39-3	Workers	Inhalation	Acute/short term exposure - systemic effects		2,5 mg/m3	
hydrogen fluoride 7664-39-3	Workers	Inhalation	Long term exposure - local effects		1,5 µg/m³	
hydrogen fluoride 7664-39-3	Workers	Inhalation	Long term exposure - systemic effects		1,5 mg/m3	
hydrogen fluoride 7664-39-3	General population	Inhalation	Acute/short term exposure - systemic effects		0,03 mg/m3	
hydrogen fluoride 7664-39-3	General population	oral	Acute/short term exposure - systemic effects		0,01 mg/kg	
hydrogen fluoride 7664-39-3	General population	Inhalation	Acute/short term exposure - local effects		1,25 mg/m3	
hydrogen fluoride 7664-39-3	General population	Inhalation	Long term exposure - systemic effects		0,03 mg/m3	
hydrogen fluoride 7664-39-3	General population	oral	Long term exposure - systemic effects		0,01 mg/kg	
hydrogen fluoride 7664-39-3	General population	inhalation	Long term exposure - local effects		0,2 mg/m3	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

Hand protection:

Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

For eye protection, use tightly fitted safety goggles and a face-shield

Protective eye equipment should conform to EN166.

Skin protection:

Protective clothing that covers arms and legs.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Delivery form	liquid
Colour	yellowish, up to, brownish
Odor	Odorless
Melting point	Not applicable, Product is a liquid
Solidification temperature	< 0 °C (< 32 °F)
Initial boiling point	100 - 200 °C (212 - 392 °F)no method
Flammability	Not applicable Non flammable product (flash point is greater than 93°C)
Explosive limits	Not applicable, The product is not flammable.
Flash point	> 93 °C (> 199.4 °F)
Auto-ignition temperature	Not applicable, The product is not flammable.
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH (20 °C (68 °F); Conc.: 1 % product; Solvent: Demineralised water)	1,4 - 2,3 PH-value, potentiometer
Viscosity (kinematic) (40 °C (104 °F);)	1 - 10 mm ² /s
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Miscible
Partition coefficient: n-octanol/water	Not applicable Mixture
Vapour pressure (20 °C (68 °F))	< 23 hPa
Density (20 °C (68 °F))	1,320 - 1,340 g/cm ³ density, hydrometer

Relative vapour density: > 1
 (20 °C)
 Particle characteristics Not applicable
 Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with alkalis: Heat generated.
 Can attack glass and vitreous materials.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

None if used for intended purpose.
 In case of fire toxic gases can be released.

SECTION 11: Toxicological information

General toxicological information:

The classification as corrosive H314 category 1 is due to the extreme pH.

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

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
diiron tris(sulphate) 10028-22-5	LD50	500 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)

Acute dermal toxicity:

Can penetrate into deeper parts of the skin and cause severe burns which are very painful and cure very slowly.

Hazardous substances CAS-No.	Value type	Value	Species	Method
diiron tris(sulphate) 10028-22-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
Nitric acid 7697-37-2	LC50	> 2,65 mg/l	vapour	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Nitric acid 7697-37-2	Acute toxicity estimate (ATE)	2,651 mg/l	vapour	4 h		Expert judgement

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
diiron tris(sulphate) 10028-22-5	Category 2 (irritant)	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Nitric acid 7697-37-2	corrosive			not specified
hydrofluoric acid 7664-39-3	corrosive	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
diiron tris(sulphate) 10028-22-5	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Nitric acid 7697-37-2	corrosive			not specified

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
diiron tris(sulphate) 10028-22-5	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
diiron tris(sulphate) 10028-22-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
diiron tris(sulphate) 10028-22-5	negative	in vitro mammalian cell micronucleus test	with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Nitric acid 7697-37-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Nitric acid 7697-37-2	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Nitric acid 7697-37-2	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
hydrofluoric acid 7664-39-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
diiron tris(sulphate) 10028-22-5	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Carcinogenicity

No data available.

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
diiron tris(sulphate) 10028-22-5	NOAEL P >= 500 mg/kg NOAEL F1 >= 500 mg/kg		oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Nitric acid 7697-37-2	NOAEL P >= 1.500 mg/kg	screening	oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
diiron tris(sulphate) 10028-22-5	NOAEL 125 mg/kg	oral: gavage	once daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
diiron tris(sulphate) 10028-22-5	NOAEL 250 mg/kg	oral: gavage	once daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Nitric acid 7697-37-2	NOAEL 1.500 mg/kg	oral: gavage	28 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
hydrofluoric acid 7664-39-3	NOAEL 0.88 ppm	inhalation: gas	91 d (65 exposures) 6 h/d, 5 days/week	rat	equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

Do not empty into drains / surface water / ground water.
 Locally harmful for aquatic and landliving organisms because of low pH and corrosive properties.
 The product does not contain surface-active substances as defined in the EU Detergent Regulation (EC/648/2004).
 Inorganic product: Decomposition not affected.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
diiron tris(sulphate) 10028-22-5	LC50	2,9 mg/l	96 h	Oncorhynchus mykiss	not specified
Nitric acid 7697-37-2	LC50	12,5 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
hydrofluoric acid 7664-39-3	LC50	107,5 mg/l	96 h	not specified	OECD Guideline 203 (Fish, Acute Toxicity Test)
hydrofluoric acid 7664-39-3	NOEC	4 mg/l	21 d	Oncorhynchus mykiss	other guideline:

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Nitric acid 7697-37-2	EC50	4,6 mg/l	48 h	Ceriodaphnia dubia	other guideline:
hydrofluoric acid 7664-39-3	EC50	270 mg/l	48 h	Daphnia sp.	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
hydrofluoric acid 7664-39-3	NOEC	3,7 mg/l	21 d	Daphnia magna	other guideline:

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
hydrofluoric acid 7664-39-3	EC10	650 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
hydrofluoric acid 7664-39-3	EC50	> 1.000 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
diiron tris(sulphate) 10028-22-5	EC10	10.000 mg/l			not specified
Nitric acid 7697-37-2	EC50	> 1.000 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
hydrofluoric acid 7664-39-3	EC10	231 mg/l	16 h	not specified	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
diiron tris(sulphate) 10028-22-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Nitric acid 7697-37-2	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.
hydrofluoric acid 7664-39-3	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

If acidic or alkaline products are discharged into wastewater installations care must be taken that the discharged wastewater has a pH in the range pH 6 - 10, as pH variations could cause disorders in wastewater channels and biological sewage treatment plants. The local discharge regulations take precedence.
waste water: harmful effect due to low pH-value and toxic fluoride component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
 In consultation with the responsible local authority, must be subjected to special treatment.

Waste code
 060199

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number

ADR	2922
RID	2922
ADN	2922
IMDG	2922
IATA	2922

14.2. UN proper shipping name

ADR	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid,Hydrofluoric acid)
RID	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid,Hydrofluoric acid)
ADN	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid,Hydrofluoric acid)
IMDG	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid,Hydrofluoric acid)
IATA	Corrosive liquid, toxic, n.o.s. (Nitric acid,Hydrofluoric acid)

14.3. Transport hazard class(es)

ADR	8 (6.1)
RID	8 (6.1)
ADN	8 (6.1)
IMDG	8 (6.1)
IATA	8 (6.1)

14.4. Packing group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
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	Tunnelcode: (E)
RID	not applicable
ADN	not applicable
IMDG	IMDG-Code: Segregation group 1- Acids
IATA	not applicable

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EU)	0 %

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see https://ec.europa.eu/home-affairs/what-we-do/policies/counter-terrorism/protection/implementation-explosives-precursors-legislation_en.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Great Britain):

Remarks	Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, e.g COSHH Essentials. EH40 Occupational Exposure Limits Chemicals (Hazard Information & Packaging for Supply) Regulations. The Personnel Protective Equipment at Work Regulations. The Carriage of Dangerous Goods by Road Regulations. The Health & Safety at Work Act 1974. (Note: Use latest editions/amendments of above referenced documents.)
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SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H300 Fatal if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H331 Toxic if inhaled.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

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Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.