MORPHISTO Laborchemikalien & Histologieservice

Safety Data Sheet

according to Regulation (EC) No 1907/2006 and (EU) No 2020/878

Etchant for martensitic chromium steels

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

1.1. Product identifier

Etchant for martensitic chromium steels

UFI: K9RA-1P1G-CWJX-5N2U

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

Use of the substance/mixture

The product is intended for research, analysis and scientific education.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: MORPHISTO GmbH
Street: Schumannstr. 142/144
Place: D-63069 Offenbach
Telephone: +49 (0) 69 / 400 3019-60 Telefax: +49 (0) 69 / 400 3019-64
E-mail: info@morphisto.de
Contact person: Morphisto GmbH
E-mail: gefahrstoffmanagement@morphisto.de
Internet: http://www.morphisto.de

1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Met. Corr. 1; H290
Skin Corr. 1; H314
Eye Dam. 1; H318
STOT SE 3; H335
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

hydrochloric acid 15 %
Copper dichloride dihydrate

Signal word: Danger

Pictograms:

Hazard statements

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing and eye protection/face protection.
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/doctor.
P391	Collect spillage.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Pictograms:

Hazard statements

H314

Precautionary statements

P260-P280-P303+P361+P353-P305+P351+P338-P310

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7647-01-0	hydrochloric acid %			15 - < 20 %
	231-595-7	017-002-01-X	01-2119484862-27	
	Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H314 H318 H335			
10125-13-0	Copper dichloride dihydrate			1 - < 5 %
	231-210-2		01-2119970306-36	
	Met. Corr. 1, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1; H290 H312 H302 H315 H318 H400 H410			
7803-55-6	Ammonium trioxovanadate			< 1 %
	232-261-3		01-2119983501-37	
	Repr. 2, Acute Tox. 3, Acute Tox. 4, Eye Irrit. 2, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 2; H361fd H301 H332 H319 H372 H400 H411			
12054-85-2	Hexaammonium heptamolybdate			< 1 %
	234-320-9		01-2119498057-28	

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
7647-01-0	231-595-7	hydrochloric acid %	15 - < 20 %
	oral: LD50 = 2222 mg/kg Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100		
10125-13-0	231-210-2	Copper dichloride dihydrate	1 - < 5 %
	dermal: LD50 = 1224 mg/kg; oral: LD50 = 584 mg/kg		
7803-55-6	232-261-3	Ammonium trioxovanadate	< 1 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = 2,61 mg/l (dusts or mists); dermal: LD50 = >2500 mg/kg; oral: LD50 = 218,1 mg/kg		
12054-85-2	234-320-9	Hexaammonium heptamolybdate	< 1 %
	oral: LD50 = >2.000 mg/kg		

Further Information

This mixture contains no substances of very high concern (SVHC) (> 0,1%) which are included in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Take off immediately all contaminated clothing.

After inhalation

Provide fresh air. Medical treatment necessary. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated

clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Call a physician immediately. Danger of blindness!

After ingestion

Observe risk of aspiration if vomiting occurs. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Do not allow a neutralisation agent to be drunk. Call a physician immediately. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Never give anything by mouth to an unconscious person or a person with cramps.

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

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Co-ordinate fire-fighting measures to the fire surroundings. Carbon dioxide (CO_2). dry extinguishing powder. alcohol resistant foam. Water spray

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Non-flammable. In case of fire may be liberated: Hydrogen chloride (HCl). Chlorine (Cl_2). Gas/vapours, irritant.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Prevent spread over a wide area (e.g. by containment or oil barriers).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Use extractor hood (laboratory).

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Cover drains. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Other information

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation as well as local exhaustion at critical locations. Use extractor hood (laboratory). Always close containers tightly after the removal of product. Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion

The product itself does not burn. Usual measures for fire prevention.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Always close containers tightly after the removal of product. Wear personal protection equipment. Take off contaminated clothing and wash it before reuse.

Further information on handling

Avoid contact with skin, eyes and clothes. General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Unsuitable container/equipment material: Metal. Make sure spills can be contained (e.g. sump pallets or kerbed areas).

Hints on joint storage

Do not store together with: Explosives. Oxidizing substances. Organic peroxides. Self-reactive substances and mixtures. Radioactive materials. Infectious substances. Food and fodder.

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorbtion of humidity.
Recommended storage temperature: 15-25°C.
Protect against: frost. UV-radiation/sunlight. heat. Humidity.

7.3. Specific end use(s)

The product is intended for research, analysis and scientific education.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values

CAS No	Name of agent	ppm	mg/m³	fib/cm³	Category	Origin
7647-01-0	Hydrogen chloride	5	8		TWA (8 h)	
		10	15		STEL (15 min)	

DNEL/DMEL values

CAS No	Name of agent			
DNEL type		Exposure route	Effect	Value
7647-01-0	hydrochloric acid %			
Worker DNEL, acute		inhalation	local	15 mg/m³
Worker DNEL, long-term		inhalation	local	8 mg/m³
10125-13-0	Copper dichloride dihydrate			
Worker DNEL, long-term		inhalation	systemic	1 mg/m³
Worker DNEL, long-term		inhalation	local	1 mg/m³
Worker DNEL, long-term		dermal	systemic	137 mg/kg bw/day
7803-55-6	Ammonium trioxovanadate			
Worker DNEL, long-term		inhalation	systemic	0,64 mg/m³
Worker DNEL, long-term		inhalation	local	0,18 mg/m³
Worker DNEL, acute		inhalation	local	0,92 mg/m³
12054-85-2	Hexaammonium heptamolybdate			
Worker DNEL, long-term		inhalation	systemic	19,36 mg/m³

PNEC values

CAS No	Name of agent	
Environmental compartment		Value
10125-13-0	Copper dichloride dihydrate	
Freshwater		0,0078 mg/l
Marine water		0,0052 mg/l
Freshwater sediment		87 mg/kg
Marine sediment		676 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,23 mg/l
Soil		65 mg/kg
7803-55-6	Ammonium trioxovanadate	
Freshwater		0,0076 mg/l
Freshwater (intermittent releases)		0,00693 mg/l
Marine water		0,0025 mg/l
Freshwater sediment		240 mg/kg
Marine sediment		79 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,45 mg/l
Soil		7,2 mg/kg
12054-85-2	Hexaammonium heptamolybdate	
Freshwater		22,01 mg/l
Marine water		3,29 mg/l
Freshwater sediment		39170 mg/kg
Marine sediment		3430 mg/kg
Micro-organisms in sewage treatment plants (STP)		37,61 mg/l
Soil		16,46 mg/kg

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Use extractor hood (laboratory). Provide adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles. Eye glasses with side protection EN 166.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
Pull-over gloves of rubber. EN ISO 374 Suitable material:
penetration time (maximum wearing period):>=8h.
Butyl rubber.0,5mm
NBR (Nitrile rubber).0,35mm
Protective clothing should be selected, depending on concentration and quantity of the hazardous substance. The chemical resistance of the products should be discussed with suppliers. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Skin protection

Use of protective clothing. Lab apron. Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Suitable respiratory protective equipment: Combination filtering device (EN 14387) Type:E/P2/3.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid	
Colour:	green	
Odour:	stinging (hydrochloric acid)	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		85 °C
Flammability:		not determined
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		>100 °C

Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value (at 20 °C):	0-1
Viscosity / kinematic:	not determined
Water solubility: (at 20 °C)	easily soluble
Solubility in other solvents not determined	
Partition coefficient n-octanol/water:	not determined
Vapour pressure: (at 20 °C)	186 hPa
Density (at 20 °C):	1,10 g/cm³
Relative vapour density:	not determined
Particle characteristics:	not applicable

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

The product is not: Explosive.

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

Evaporation rate:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Base, Peroxides, Oxidizing agent. strong alkalis, Substances which in contact with water, emit flammable gases.

10.4. Conditions to avoid

Protect from direct sunlight.

10.5. Incompatible materials

Metal. Keep away from: Base, Oxidizing agent, Peroxides. metals.
Nitric acid. aldehydes. strong alkalis. Formaldehyde. Aluminium. Metal. Fluorine. Amines.

10.6. Hazardous decomposition products

In case of fire may be liberated: Hydrogen chloride (HCl). Chlorine (Cl2). Gas/vapours, irritant.

SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.

ATEmix calculated

ATE (oral) > 5000 mg/kg; ATE (dermal) > 5000 mg/kg

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7647-01-0	hydrochloric acid %				
	oral	LD50 2222 mg/kg	Rat	suppliers SDS.	
10125-13-0	Copper dichloride dihydrate				
	oral	LD50 584 mg/kg	Rat	ECHA	wasserfrei
	dermal	LD50 1224 mg/kg	Rat	ECHA	wasserfrei
7803-55-6	Ammonium trioxovanadate				
	oral	LD50 218,1 mg/kg	Rat	ECHA	
	dermal	LD50 >2500 mg/kg	Rat	ECHA	
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) dust/mist	LC50 2,61 mg/l	Rat	suppliers SDS.	
12054-85-2	Hexaammonium heptamolybdate				
	oral	LD50 >2.000 mg/kg	Rat	suppliers SDS.	OECD 420

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage. (On basis of test data)
Serious eye damage/eye irritation: Causes serious eye damage. (On basis of test data)

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects 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

May cause respiratory irritation. (hydrochloric acid %)

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.

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic life with long lasting effects.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
7647-01-0	hydrochloric acid %						
	Acute fish toxicity	LC50	862 mg/l	96 h			
10125-13-0	Copper dichloride dihydrate						
	Acute fish toxicity	LC50 mg/l	0,193	96 h	fish	suppliers SDS.	
7803-55-6	Ammonium trioxovanadate						
	Acute fish toxicity	LC50	36 mg/l	96 h			
	Acute algae toxicity	ErC50 mg/l	2,907	72 h		ECHA	
	Fish toxicity	NOEC mg/l	>0,48	28 d	Clarias batrachus (Froschwels)	suppliers SDS.	
	Acute bacteria toxicity	EC50 mg/l ( )	>100	3 h	Activated sludge	suppliers SDS.	
12054-85-2	Hexaammonium heptamolybdate						
	Acute fish toxicity	LC50	420 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	suppliers SDS.	OECD 203
	Acute crustacea toxicity	EC50	79 mg/l	48 h	Daphnia magna (Big water flea)	suppliers SDS.	OECD 202
	Acute bacteria toxicity	EC50 ( )	820 mg/l	3 h	activated sludge	suppliers SDS.	OECD 209

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

060102 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the manufacture, formulation, supply and use (MFSU) of acids; hydrochloric acid; hazardous waste

List of Wastes Code - used product

160507 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded inorganic chemicals consisting of or containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3264
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Salzsäure, Kupferchlorid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8

Classification code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3264
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Salzsäure, Kupferchlorid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8

Classification code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3264
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (hydrochloric acid, copper chloride)
14.3. Transport hazard class(es):	8

14.4. Packing group: III

Hazard label: 8

Special Provisions: 223 274
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-A, S-B
Segregation group: 1 - acids

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (hydrochloric acid, copper chloride)

14.3. Transport hazard class(es): 8

14.4. Packing group: III

Hazard label: 8

Special Provisions: A3 A803
Limited quantity Passenger: 1 L
Passenger LQ: Y841
Excepted quantity: E1
IATA-packing instructions - Passenger: 852
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 856
IATA-max. quantity - Cargo: 60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes

Danger releasing substance: Copper dichloride dihydrate,Ammonium trioxovanadate

14.6. Special precautions for user

Warning: strongly corrosive.

14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):
Entry 3, Entry 65, Entry 75

Information according to Directive 2012/18/EU (SEVESO III): E2 Hazardous to the Aquatic Environment

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 3 - highly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:
hydrochloric acid %
Copper dichloride dihydrate
Ammonium trioxovanadate

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,4,6,7,8,9,10,11,14,15,16.
Rev. 3,0; 14.07.2025; revision of the classification

Abbreviations and acronyms

Met. Corr. 1: Corrosive to metals, hazard category 1
Acute Tox. 3: Acute toxicity, hazard category 3
Skin Corr. 1B: Skin corrosion, sub-category 1B
Skin Irrit. 2: Skin irritation, hazard category 2
Eye Dam. 1: Serious eye damage, hazard category 1
Eye Irrit. 2: Eye irritation, hazard category 2
Repr. 2: Reproductive toxicity, hazard category 2
STOT SE 3: Specific target organ toxicity - single exposure, hazard category 3
STOT RE 1: Specific target organ toxicity - repeated exposure, hazard category 1
Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard category: Chronic 1
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
IMDG: International Maritime Code for Dangerous Goods
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at http://abbrev.esdscom.eu
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
EC/EEC: European Community/European Economic Community
EU: European Union
M-factor: Multiplying factor
IATA: International Air Transport Association
DGR: Dangerous Goods Regulations

ICAO: International Civil Aviation Organization
TI: Technical Instructions

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Skin Corr. 1; H314	On basis of test data
Eye Dam. 1; H318	On basis of test data
STOT SE 3; H335	Calculation method
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)