

# SAFETY DATA SHEET

SDS DATE: December 17, 2021



## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** ZediXclusive Microbial Transglutaminase Assay Kit  
**PRODUCT CODE:** Cat# Z009  
**RESTRICTIONS ON USE:** For laboratory research purposes. Not for drug or household use.  
**MANUFACTURER:** Zedira  
**ADDRESS:** Roesslerstrasse 83, 64293 Darmstadt  
**EMERGENCY PHONE:** +49-6151-66628-0  
**FAX PHONE:** +49-6151-66628-19  
**EMAIL:** [office@zedira.com](mailto:office@zedira.com)  
**Web:** [www.zedira.com](http://www.zedira.com)

## SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
Activity Reagent 1 (A1)	Lyophilized (contains Glutathione & Tris)	3 vials	No hazards
Activity Reagent 2 (A2)	Lyophilized (contains Hydroxylamine HCl)	3 vials	See Below
Stop Reagent (S)	Liquid (contains HCl & Iron chloride)	3 vials with 6 mL	See Below
Positiv Control (P1)	Lyophilized (contains microbial Transglutaminase)	3 vials	No hazards

### Hazardous components (REGULATION (EC) No 1272/2008)

#### Hydroxylamine HCl:

##### Emergency Overview

**OSHA Hazards:** Target Organ Effect, Toxic by ingestion, Irritant

**Target Organs:** Central nervous system **GHS Classification:**

Corrosive to metals (Category 1), H290

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Dermal (Category 4), H312

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Skin sensitisation (Category 1), H317

Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure, Oral (Category 2), spleen, H373

Short-term (acute) aquatic hazard (Category 1), H400 **GHS**

**Label elements, including precautionary statements**



**Pictogram:**

**Signal word:**

Warning

**Hazard statement(s):**

H290 May be corrosive to metals.

H302 + H312 Harmful if swallowed or in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H373 May cause damage to organs (spleen) through prolonged or repeated exposure if swallowed.

H400 Very toxic to aquatic life.

**Precautionary statement(s):** P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P234 Keep only in original container.

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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- P272 Contaminated work clothing must not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
- P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 Take off contaminated clothing and wash before reuse.
- P390 Absorb spillage to prevent material damage.
- P391 Collect spillage.
- P405 Store locked up.
- P406 Store in corrosive resistant container with a resistant inner liner.
- P501 Dispose of contents/ container to an approved waste disposal plant.

## HMIS Classification Health hazard: 3

Chronic Health Hazard: \*

Flammability: 0

Physical hazards: 0

## NFPA Rating Health

hazard: 3

Fire: 0

Reactivity Hazard: 0

## Potential Health Effects

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation. **Eyes:** Causes eye irritation.

**Ingestion:** Toxic if swallowed

## Hydrochloric acid (HCl):

### Emergency overview

### Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1, H290

Skin corrosion, Category 1B, H314

Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335

## GHS Label elements, including precautionary statements



### Pictogram:

Signal word: Danger

Hazard statement(s): H290 May be corrosive to metals  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.

Precautionary statement(s): P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

## HMIS Classification Health hazard: 3

Flammability: 0

Physical hazards: 0

## NFPA Rating

Health Hazard: 3

Fire: 0

Reactivity Hazard: 0

## Iron(III) chloride:

### Emergency overview

### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals (Category 1), H290

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

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Serious eye damage (Category 1), H318

## GHS Label elements, including precautionary statements



**Pictogram:**

**Signal word:**

Danger

**Hazard statement(s):**

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

**Precautionary statement(s):** P234 Keep only in original container.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P390 Absorb spillage to prevent material damage.

P406 Store in corrosive resistant container with a resistant inner liner.

P501 Dispose of contents/ container to an approved waste disposal plant

**HMIS Classification Health hazard:** 2

**Flammability:** 0

**Physical hazards:** 0

**NFPA Rating Health**

**Hazard:** 2

**Fire:** 0

**Reactivity Hazard:** 0

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
Hydroxylamine HCl	5470-11-1	226-798-2	69.49	NH <sub>2</sub> OH · HCl	<100%
HCl	7647-01-0	231-595-7	36.46	HCl	<5%
Iron(III) chloride	10025-77-1	231-729-4	270.30	Cl <sub>3</sub> Fe · 6H <sub>2</sub> O	<5%

## SECTION 4: FIRST AID MEASURES

**General advice** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact** Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5: FIRE-FIGHTING MEASURES

### Hydroxylamine HCl:

**Suitable extinguishing media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substance or mixture** Nitrogen oxides (NO<sub>x</sub>), Hydrogen chloride gas

**Advice for firefighters** Wear self-contained breathing apparatus for firefighting if necessary. **Further**

**information** May explode when heated

### Hydrochloric acid (HCl):

**Extinguishing media:** No data available

**Special hazards arising from the substance or mixture:** Non-combustible

**Hazardous combustion products:** In case of fire may be liberated: hydrogen chloride (HCl)

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**Advice for firefighters:** Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing

**Further information:** No data available

## **Iron(III) chloride:**

**Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media:** For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture:** Hydrogen chloride gas, Iron oxides; Not combustible.; Ambient fire may liberate hazardous vapours.

**Advice for firefighters:** Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**Further information:** Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system

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## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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### **Hydroxylamine HCl:**

**Personal precautions, protective equipment and emergency procedures** Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### **Hydrochloric acid (HCl):**

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

**Environmental precautions:** Keep away from drains, surface and ground water. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

**Methods and materials for containment and cleaning up:** No data available

**Advice on how to contain a spill:** Covering of drains.

### **Iron(III) chloride:**

**Personal precautions, protective equipment and emergency procedures:** Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

**Environmental precautions:** Do not let product enter drains.

**Methods and materials for containment and cleaning up:** Cover drains. Collect, bind, and pump off spills. Observe possible material restriction (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## **SECTION 7: HANDLING AND STORAGE**

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### **Hydroxylamine HCl:**

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place.

Air and moisture sensitive. Storage class (TRGS 510): 4.1A: Other explosive hazardous materials

### **Hydrochloric acid (HCl):**

**Precautions for safe handling:** For precautions see section 2

**Conditions for safe storage, including any incompatibilities:** Recommended storage temperature 2 - 8 °C

Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials

### **Iron(III) chloride:**

**Precautions for safe handling:** For precautions see section 2.

**Conditions for safe storage, including any incompatibilities:** Store under inert gas. Tightly closed. Dry. Hygroscopic Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials

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## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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### **Hydroxylamine HCl:**

#### **Control parameters**

#### **Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

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## Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). **Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. **Body Protection**

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. **Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## Hydrochloric acid (HCl):

### Control parameters

#### Components with workplace control parameters

Component	Cas-No.	Value	Control parameters	Source
Hydrogen chloride	7647-01-0	TWA	0.5 ppm	2000/39/EC
	Remarks	Upper Respiratory Tract irritation Eye irritation Confirmed animal carcinogen with unknown relevance to humans		
	Form of exposure: Gas and aerosol mists	TWA	5 ppm 8 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
	Form of exposure: Gas and aerosol mists	PEL	1 ppm 2 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## Personal protective equipment

### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. **Eye protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

### Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

General industrial hygiene practice.

## Iron(III) chloride:

### Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Iron trichloride	10025-77-1	TWA	1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		TWA	1 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		PEL	1 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). **Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. **Body Protection**

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Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. **Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Hydroxylamine HCl	HCl	Iron Chloride
<b>Appearance:</b>	crystalline	liquid	solid
<b>pH:</b>	2.5 - 3.5 at 50 g/L	< 1 at 20 °C	No data available
<b>Water Solubility:</b>	470 g/l at 20 °C	soluble at 20 °C	No data available
<b>Other Solubility:</b>	No data available	No data available	No data available
<b>Boiling Point (°C):</b>	No data available	No data available	280 - 285 °C 536 - 545 °F
<b>Melting Point (°C):</b>	155 - 157 °C (311 - 315 °F)	ca. - 50 °C	37 °C (99 °F)
<b>Flash Point (°C):</b>	No data available	Not applicable	Not applicable
<b>Ignition Temperature (°C):</b>	No data available	No data available	No data available
<b>Density</b>	1.67 g/cm <sup>3</sup> at 25 °C	1.16 g/cm <sup>3</sup> at 20°C	No data available

## SECTION 10: STABILITY AND REACTIVITY

Property	Hydroxylamine HCl	HCl	Iron Chloride
<b>Chemical stability</b>			
<b>Conditions to avoid:</b>	Air Exposure to moisture	Heating	Exposure to moisture.
<b>Materials to avoid:</b>	Strong oxidizing agents, phosphorous pentachloride, Calcium, Anhydrous copper(II) sulfate	Metals, metal alloys	Strong oxidizing agents, Forms shock-sensitive mixtures with certain other materials., Sodium/sodium oxides, Potassium
<b>Hazardous decomposition products:</b>	under fire conditions. - Nitrogen oxides (NO <sub>x</sub> ), Hydrogen chloride gas	under fire conditions. - Hydrogen chloride gas	under fire conditions. - Hydrogen chloride gas, Iron oxides

## SECTION 11: TOXICOLOGICAL INFORMATION

### Hydroxylamine HCl:

**Acute toxicity:** LD50 Oral - Rat - male and female - 642 mg/kg (OECD Test Guideline 401) Inhalation: No data available Dermal: No data available

**Skin Irritation and corrosion:** Skin - In vitro study Result: Irritating to skin. - 42 min (OECD Test Guideline 439)

**Sensitization:** Maximisation Test - Guinea pig Result: positive (OECD Test Guideline 406)

**Germ cell mutagenicity:** Ames test S. Typhimurium Result: negative In vitro mammalian cell gene mutation test mouse lymphoma cells Result: negative (ECHA) **Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential

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carcinogen by OSHA. **Reproductive**

**toxicity:** no data available

## Potential Health Effects

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

**Ingestion:** Toxic if swallowed.

## Hydrochloric acid (HCl):

**Acute toxicity:** Shall not be classified as acutely toxic Inhalation: No data available Dermal: No data available **Skin**

**corrosion/irritation:** Causes severe burns

**Serious eye damage/eye irritation:** Causes serious eye damage.

**Respiratory or skin sensitization:** Shall not be classified as a respiratory or skin sensitiser

**Summary of evaluation of the CMR properties:** Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

**Specific target organ toxicity - single exposure:** May cause respiratory irritation.

**Toxicity:** no data available

**Teratogenicity:** no data available

**Specific target organ toxicity – single exposure (GHS):** Mixture may cause respiratory irritation

**Target organ:** Respiratory system

**Specific target organ toxicity – repeated exposure (GHS):** no data available

**Aspiration hazard:** no data available

## Potential Health Effects

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin:** Harmful if absorbed through skin. May cause skin irritation.

**Eyes:** May cause eye irritation.

**Ingestion:** Harmful if swallowed.

**Signs and Symptoms of Exposure:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects:** no data available

**Additional information:** RTECS: not available

## Iron(III) chloride:

**Acute toxicity:** LD50 Oral - Rat - 316 mg/kg Remarks: (RTECS) Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/k (OECD Test Guideline 402) Remarks: (in analogy to similar products)

**Skin corrosion/irritation:** Skin – Rabbit Result: irritating Remarks: (IUCLID)

**Serious eye damage/eye irritation:** Eyes – Rabbit Result: Severe irritations (OECD Test Guideline 405)

**Respiratory or skin sensitization:** no data available

**Germ cell mutagenicity:** Germ cell mutagenicity No data available Ames test Result: negative

Mutagenicity (mammal cell test): micronucleus. Result: negative

Mouse Result: negative (External MSDS) **Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. **Reproductive**

**toxicity:** no data available

**Teratogenicity:** no data available

**Specific target organ toxicity – single exposure (GHS):** no data available

**Specific target organ toxicity – repeated exposure (GHS):** no data available

**Aspiration hazard:** no data available

## Potential Health Effects

**Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin:** Harmful if absorbed through skin. May cause skin irritation.

**Eyes:** May cause eye irritation.

**Ingestion:** Harmful if swallowed.

**Signs and Symptoms of Exposure:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects:** no data available

**Additional information:** Repeated dose toxicity - Rat - male - Oral - 98 d - NOAEL (No observed adverse effect level) - 277 mg/kg Subchronic toxicity

RTECS: NO5425000

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## SECTION 12: ECOLOGICAL INFORMATION



**Hydroxylamine HCl:**

**Toxicity** Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 1.78 mg/l - 96 h (OECD Test Guideline 203)  
Toxicity to daphnia and other aquatic invertebrates semi-static test EC50 - Daphnia magna (Water flea) - 1.1 mg/l - 48 h (OECD Test Guideline 202)  
Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata - 0.21 mg/l - 72 h (OECD Test Guideline 201)  
Toxicity to bacteria static test EC10 - activated sludge - 1.7 mg/l - 3 h (OECD Test Guideline 209)  
**Persistence and degradability** Not applicable for inorganic substances  
**Bioaccumulative potential** No data available **Mobility in soil** No data available  
**Results of PBT and vPvB assessment** PBT/vPvB assessment not available as chemical safety assessment not required/not conducted  
**Other adverse effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life. May be harmful to aquatic organisms due to the shift of the pH. Avoid release to the environment

**Hydrochloric acid (HCl):**

**Persistence and degradability:** no data available  
**Toxicity:** Toxicity to fish LC50 - Lepomis macrochirus (Bluegill sunfish) - 20.5 mg/l - 96 h OECD Test Guideline 203  
**Bioaccumulative potential:** no data available  
**Mobility in soil:** no data available  
**PBT and vPvB assessment:** Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to the Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.  
**Other adverse effects:** Additional ecological information  
Forms corrosive mixtures with water even if diluted. Harmful effect due to pH shift. Discharge into the environment must be avoided.

**Iron(III) chloride:**

**Persistence and degradability:** Biodegradability Result: - Readily biodegradable.  
**Toxicity:** Toxicity to fish LC50 - Lepomis macrochirus (Bluegill sunfish) - 20.3 mg/l - 96 h Remarks: (ECHA)  
Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - 9.6 mg/l - 48 h Remarks: (ECHA)  
**Bioaccumulative potential:** no data available **Mobility in soil:** no data available  
**PBT and vPvB assessment:** PBT/vPvB assessment not available as chemical safety assessment not required/not conducted **Other adverse effects:** no data available

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Product:** Offer surplus and non-recyclable solutions to a licensed disposal company.  
**Contaminated packaging:** Dispose of as unused product.

**SECTION 14: TRANSPORT INFORMATION**

**Hydroxylamine HCl:**

**DOT (US):** UN number: 2923 Class: 8 (6.1) Packing group: III Proper shipping name: Corrosive solids, toxic, n.o.s. (Hydroxylamine hydrochloride) Reportable Quantity (RQ): Poison Inhalation Hazard: No  
**IMDG:** UN number: 2923 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (Hydroxylamine hydrochloride) Marine pollutant : yes  
**IATA:** UN number: 2923 Class: 8 (6.1) Packing group: III Proper shipping name: Corrosive solid, toxic, n.o.s. (Hydroxylamine hydrochloride)

**Hydrochloric acid (HCl):**

**DOT (US):** UN number: 1789 Class: 8 Packing group: II Proper shipping name: Hydrochloride acid Reportable Quantity (RQ):  
**IMDG:** UN number: 1789 Class: 8 Packing group: II EMS-No: F-A, S-B Proper shipping name: Hydrochloride ACID, pollutant : yes  
**IATA:** UN number: 1789 Class: 8 Packing group: II Proper shipping name: Hydrochloride acid

**Iron(III) chloride:**

**DOT (US):** Not dangerous goods  
**IMDG:** Not dangerous goods  
**IATA:** Not dangerous goods

**SECTION 15: REGULATORY INFORMATION**

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**SARA 302 Components:** SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:** Hydrochloride acid Acute Health Hazard, Chronic Health Hazard; Chronic Health Hazard; Hydroxylamine HCl Acute Health Hazard, Chronic Health Hazard; Iron(III) chloride Acute Health Hazard

**EU regulations:** This product is not classified according to the EU regulations.

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## SECTION 16: OTHER INFORMATION

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### DISCLAIMER:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. The company Zedira shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.