

SAFETY DATA SHEET

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

1.1. Product identifier

Product Name CIROS-OES-TS

Product Description 50 µg/mL S; 10 µg/mL ea: Fe, K, La, P, Sc, Ti; 5 µg/mL ea: Mg, Mn
Contains Hydrochloric acid; Nitric acid

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

Recommended Use Laboratory chemicals

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Company

Inorganic Ventures
300 Technology Drive
Christiansburg, VA 24073
web: www.inorganicventures.com

E-mail Address info@inorganicventures.com

1.4. Emergency telephone number

Chemtrec 1-800-424-9300 (North America)

Chemtrec +1 703-741-5970 (International)

Europe	See above
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to
Regulation (EC) No. 1272/2008 [CLP]

GHS

Acute toxicity - Inhalation (Gases)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	Category 2 - (H330)
Skin corrosion/irritation	Category 1 Sub-category A - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)

2.2. Label elements

Product identifier

Contains Hydrochloric acid; Nitric acid

**Signal word**

Danger

Hazard statements

H314 - Causes severe skin burns and eye damage

H330 - Fatal if inhaled

H332 - Harmful if inhaled

EUH071 - Corrosive to the respiratory tract

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handling

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

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

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/physician

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

2.3. Other hazards

No information available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	EC No (EU Index No)	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Hydrochloric acid	231-595-7 0	7647-01-0	5	Acute Tox. 3 (H331) Skin Corr. 1A (H314) STOT SE 3 (H335)	No data available
Nitric acid	231-714-2 0	7697-37-2	2	(EUH071) Skin Corr. 1A (H314) Ox. Liq. 3 (H272) Acute Tox. 3 (H331)	No data available

Full text of H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures**General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

Immediate medical attention is required. Remove to fresh air. Artificial respiration and/or oxygen may be necessary. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

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

Most Important Symptoms and Effects Difficulty in breathing.

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

Notes to Physician Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment as required. Do not get in eyes, on skin, or on clothing.

Advice for emergency responders

Ensure adequate ventilation.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

See Section 12: ECOLOGICAL INFORMATION.

SECTION 7: Handling and storage

7.1. Precautions for safe handling**Advice on safe handling**

Ensure adequate ventilation.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits**

Chemical name	European Union	United Kingdom	France	Spain	Germany DFG	
Hydrochloric acid 7647-01-0	TWA: 5 ppm TWA: 8 mg/m³ STEL: 10 ppm STEL: 15 mg/m³	TWA: 1 ppm TWA: 2 mg/m³ STEL: 5 ppm STEL: 8 mg/m³	VLCT: 7.6 mg/m³ VLTC: 5 ppm	TWA: 5 ppm TWA: 7.6 mg/m³ STEL: 10 ppm STEL: 15 mg/m³	TWA: 2 ppm TWA: 3.0 mg/m³ Peak: 4 ppm Peak: 6 mg/m³	
Nitric acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³		
Chemical name	Italy MDLPS	Portugal	Netherlands	Finland	Denmark	
Hydrochloric acid 7647-01-0	TWA: 5 ppm TWA: 8 mg/m³	TWA: 5 ppm TWA: 8 mg/m³ STEL: 10 ppm STEL: 15 mg/m³ Ceiling: 2 ppm	TWA: 8 mg/m³ STEL: 15 mg/m³	STEL: 7.6 mg/m³ STEL: 5 ppm	Ceiling: 7 mg/m³ Ceiling: 5 ppm	
Nitric acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m³	TWA: 2 ppm STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1.3 mg/m³	TWA: 0.5 ppm TWA: 1.3 mg/m³ STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³	
Chemical name	Sweden	Austria	Switzerland	Poland	Norway	Ireland
Hydrochloric acid 7647-01-0	LLV: 2 ppm LLV: 3 mg/m³ Binding STL: 4 ppm Binding STL: 6 mg/m³	TWA: 5 ppm TWA: 8 mg/m³ STEL 10 ppm STEL 15 mg/m³	TWA: 2 ppm TWA: 3 mg/m³ STEL: 4 ppm STEL: 6 mg/m³	NDSch: 10mg/m³ NDS: 5mg/m³	Ceiling: 5 ppm Ceiling 7 mg/m³	TWA: 8 mg/m³ TWA: 5 ppm STEL: 10 ppm STEL: 15 mg/m³
Nitric acid 7697-37-2	LLV: 0.5 ppm LLV: 1.3 mg/m³ Binding STL: 1 ppm Binding STL: 2.6 mg/m³	STEL 1 ppm STEL 2.6 mg/m³	TWA: 2 ppm TWA: 5 mg/m³ STEL: 2 ppm STEL: 5 mg/m³	TWA: 1.4 mg/m³ STEL: 2.6 mg/m³	TWA: 2 ppm TWA: 5 mg/m³ STEL: 4 ppm STEL: 10 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment**Eye/Face Protection**

Wear safety glasses with side shields (or goggles).

Hand Protection

Impervious gloves.

Skin and Body Protection
Respiratory Protection

Long sleeved clothing.
 When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Environmental Exposure Controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	clear / Pale yellow
Odor	Odorless
pH - VALUE 1	No data available
Melting point / melting range	No data available
Initial boiling point and boiling range	100 °C
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Vapor pressure @20 °C (kPa)	No data available
Relative vapor density	No data available
Relative Density	No data available
Specific gravity - VALUE 1	No data available
Water solubility	Miscible
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Dynamic viscosity - VALUE 1	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available
VOC content	No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact None.
 Sensitivity to Static Discharge None.

10.3. Possibility of hazardous reactions

Hazardous Polymerization

None under normal processing.

Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

Heating can release hazardous gases.

10.5. Incompatible materials

Bases Cyanides

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Hydrogen chloride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Toxicity

Product Information	Harmful by inhalation.
Inhalation	Harmful by inhalation.
Eye Contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	4,760.00 mg/kg
ATEmix (inhalation-gas)	11,266.00 ppm
ATEmix (inhalation-dust/mist)	0.244 mg/l
ATEmix (inhalation-vapor)	41.30 mg/l
Unknown acute toxicity	
0 % of the mixture consists of ingredient(s) of unknown acute toxicity.	
0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.	
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.	
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).	
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).	
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).	

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenic effects	
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Target organ effects	Respiratory system.
Aspiration hazard	No information available.

SECTION 12: Ecological information

12.1. Toxicity

Contains 0 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Nitric acid		72: 96 h Gambusia affinis mg/L LC50	

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical name	Partition coefficient
Nitric acid	-2.3

12.4. Mobility in soil**Mobility in soil**

No information available.

12.5. Results of PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Hydrochloric acid	The substance is not PBT / vPvB
Nitric acid	The substance is not PBT / vPvB

12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods**Waste from Residues/Unused Products**

Dispose of in accordance with federal, state and local regulations.

Contaminated Packaging

Do not reuse empty containers.

Other Information

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG

14.1. UN-No	UN3264
14.2. Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Transport hazard class(es)	8
14.4. Packing Group	III
Description	Not applicable
14.5. Marine Pollutant	None
14.6. Special Provisions	None
No information available Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID

14.1. UN-No	UN3264
14.2. Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Transport hazard class(es)	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

ADR

14.1. UN-No	UN3264
14.2. Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Transport hazard class(es)	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

ICAO

14.1. UN-No	UN3264
14.2. Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Hazard Class	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

IATA-DGR

14.1. UN-No	UN3264
14.2. Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s
14.3. Transport hazard class(es)	8
14.4. Packing Group	III
Description	Not applicable
14.5. Environmental hazard	None
14.6. Special Provisions	None

SECTION 15: Regulatory information

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

International Inventories

All of the components in the product are on the following Inventory lists: U.S.A. (TSCA), Europe (EINECS/ELINCS/NLP), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), China (IECSC), Australia (AICS), Korea (ECL).

TSCA	Complies
EINECS/ELINCS	Complies
DSL/NDSL	Complies
PICCS	Complies
ENCS	Complies
IECSC	Complies
AICS	Complies
KECL	Complies

Legend

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical safety assessment

No information available

SECTION 16: Other information**Full text of R-phrases referred to under sections 2 and 3**

No information available

Full text of H-Statements referred to under section 3

H272 - May intensify fire; oxidizer

H314 - Causes severe skin burns and eye damage

H331 - Toxic if inhaled

H335 - May cause respiratory irritation

Revision Date 10-Sep-2024

Reason for Revision Not applicable.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet