

SAFETY DATA SHEET

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

1.1. Product identifier

Product Name CGRU10

Product Description 10000 µg/mL: Ruthenium
Contains Hydrogen chloride; Ruthenium Chloride

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
Phone: 1(800) 669-6799
Email: 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)
Skin corrosion/irritation	Category 1 Sub-category A - (H314)
Serious eye damage/eye irritation	Category 2 - (H319)
Hazardous to the aquatic environment - chronic	Category 3 - (H412)
Corrosive to metals	Category 1 - (H290)

2.2. Label elements

Product identifier
Contains Hydrogen chloride; Ruthenium Chloride

**Signal word**

Danger

Hazard statements

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H332 - Harmful if inhaled

H412 - Harmful to aquatic life with long lasting effects

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

P260 - Do not breathe dust, fume, gas, mist, vapors and spray

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

P310 - Immediately call a POISON CENTER or doctor/physician

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

Other hazards

May be harmful if swallowed Harmful to aquatic life

No information available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	EC No. (Index No.)	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Hydrogen chloride	231-595-7 (017-002-00-2) (017-002-01-X)	7647-01-0	6.6	Press. Gas Skin Corr. 1A (H314) Acute Tox. 3 (H331)	No data available
Ruthenium Chloride	233-167-5	10049-08-8	2.4088	Acute Tox. 4 (H302) Skin Corr. 1 (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) [1]	[8]

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

SECTION 4: First aid measures

4.1. Description of first aid measures**Inhalation**

Remove to fresh air.

Skin Contact

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

Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician.
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	Asthma-like and/ or skin allergy-like symptoms.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically
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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

Ensure adequate ventilation.

Refer to protective measures listed in Sections 7 and 8.

Advice for emergency responders

Ensure adequate ventilation.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. 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.
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Methods for Cleaning Up	Take up mechanically, placing in appropriate containers for disposal.
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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.

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

Chemical name	European Union	United Kingdom	France	Spain	Germany DFG	
Hydrogen chloride 7647-01-0	TWA: 5 ppm; TWA: 8 mg/m³; STEL: 10 ppm; STEL: 15 mg/m³;	TWA: 1 ppm; gas and aerosol mist TWA: 2 mg/m³; gas and aerosol mist STEL: 5 ppm; gas and aerosol mist STEL: 8 mg/m³; gas and aerosol mist	STEL-VLCT (restrictif): 5 ppm; STEL-VLCT (restrictif): 7.6 mg/m³;	TWA-(VLA-ED): 5 ppm; TWA-(VLA-ED): 7.6 mg/m³; STEL (VLA-EC): 10 ppm; STEL (VLA-EC): 15 mg/m³;	TWA-MAK: 2 ppm; I(2); TWA-MAK: 3.0 mg/m³; I(2);	
Chemical name	Italy MDLPS	Portugal	Netherlands	Finland	Denmark	
Hydrogen chloride 7647-01-0	TWA: 5 ppm; TWA: 8 mg/m³; STEL: 10 ppm; STEL: 15 mg/m³;	TWA (VLE-MP): 5 ppm; TWA (VLE-MP): 8 mg/m³; STEL (VLE-CD): 10 ppm; STEL (VLE-CD): 15 mg/m³; Ceiling (VLE-CM): 2 ppm;	TWA: 5 ppm; TWA: 8 mg/m³; STEL: 10 ppm; STEL: 15 mg/m³;	STEL: 5 ppm; STEL: 7.6 mg/m³;	STEL: 5 ppm; STEL: 8 mg/m³;	
Chemical name	Sweden	Austria	Switzerland	Poland	Norway	Ireland
Hydrogen chloride 7647-01-0	LLV: 2 ppm LLV: 3 mg/m³ Binding STLV: 4 ppm Binding STLV: 6 mg/m³	TWA-TMW: 5 ppm; TWA-TMW: 8 mg/m³; STEL-KZGW: 10 ppm (8 X 5 min); STEL-KZGW: 15 mg/m³ (8 X 5 min);	TWA-MAK: 2 ppm; TWA-MAK: 3 mg/m³; STEL-KZGW: 4 ppm; STEL-KZGW: 6 mg/m³;	TWA-NDS: 5 mg/m³; STEL-NDSch: 10 mg/m³;	Ceiling: 5 ppm; Ceiling: 7 mg/m³;	TWA: 8 mg/m³; TWA: 5 ppm; STEL: 10 ppm; STEL: 15 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
Skin and Body ProtectionImpervious gloves.
Long sleeved clothing.**Environmental Exposure Controls** Prevent product from entering drains.**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	clear /DARK RED
Odor	Slight chlorine
pH - VALUE 1	No data available
Melting point / melting range	No data available
Initial boiling point and boiling range	100 °C / 212 °F
Flash Point	Not applicable
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

Hydrogen chloride.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute Toxicity**

Product Information Product does not present an acute toxicity hazard based on known or supplied information.

Inhalation No data available.

Eye Contact No data available.

Skin Contact No data available.

Ingestion No data available.

The following ATE values have been calculated for the mixture

ATEmix (oral) 3,072.30 mg/kg

ATEmix (dermal) 75,909.10 mg/kg

ATEmix (inhalation-gas) 8,534.90 ppm

ATEmix (inhalation-dust/mist) 7.59 mg/l

ATEmix (inhalation-vapor) 45.50 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).

Component Information

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.

Aspiration hazard No information available.

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects

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

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

Chemical name	PBT and vPvB assessment
Hydrogen chloride	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

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 in bulk according to Transport	No information available

to Annex II of MARPOL 73/78 and
the IBC Code

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
AIIC	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 any hazard and/or precautionary statements referred to under Sections 2-15

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H331 - Toxic if inhaled

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

Revision date 12-May-2026

Reason for Revision Not applicable.

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

Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet