

According to REACH Regulations (EC) 1907/2006 and (EU) 2020/878

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Product code : GX1927  
 Product name : Ruthenium(III) chloride hydrate, 99.95+% (metals basis)  
 CAS number : 14898-67-0  
 Physical form : solid, substance  
 REACH : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

PC21: Laboratory chemicals.

### 1.3 Details of the supplier of the safety data sheet

Company name	: Glentham Life Sciences Ltd	Telephone	: +44 (0) 1225 667 798
	Unit 5 Leaffield Way	Fax	: +44 (0) 2033 978 909
	Corsham SN13 9SW	Email	: info@glentham.com
	United Kingdom	Web	: www.glentham.com

### 1.4 Emergency telephone number

Emergency telephone : NHS Direct 111 (UK, 24 hours), 112 (EU, 24 Hours), +44 (0) 1225 667 798 (09.00 – 17.00 GMT) number

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

Classification under CLP according to (EC) 1272/2008

H290	Met. Corr. 1
H302	Acute Tox. 4
H314	Skin Corr. 1B
H318	Eye Dam. 1
H412	Aquatic Chronic 3

### 2.2 Label elements

Label elements under CLP according to (EC) 1272/2008

#### Pictograms



GHS05 GHS07

#### Signal words

Danger

#### Hazard statements

H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H412	Harmful to aquatic life with long lasting effects

#### Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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/physician.
P260	Do not breathe dust.
P264	Do not breathe fume.
P406	Store in corrosive resistant polyethylene container with a resistant inliner.

## 2.3 Other hazards

### PBT

This substance is not identified as a PBT substance.

## 3.0 Composition/information on ingredients

### 3.1 Substances

Name	Identifier	%	Classification
Ruthenium(III) chloride hydrate, 99.95+% (metals basis)	CAS: 14898-67-0 EC: REACH: Not applicable	99.95%	H290, Met. Corr. 1 H302, Acute Tox. 4 H314, Skin Corr. 1B H318, Eye Dam. 1 H412, Aquatic Chronic 3

## 4. First aid measures

### 4.1 Description of first aid measures

Skin contact	Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Remove all contaminated clothes and footwear immediately unless stuck to skin. Transfer to hospital if there are burns or symptoms of poisoning. Wash immediately with plenty of soap and water.
Eye contact	Transfer to hospital for specialist examination. Bathe the eye with running water for 15 minutes.
Ingestion	Do not induce vomiting. Give 1 cup of water to drink every 10 minutes. If conscious, give half a litre of water to drink immediately. If unconscious and breathing is OK, place in the recovery position. If unconscious, check for breathing and apply artificial respiration if necessary. Transfer to hospital as soon as possible. Wash out mouth with water.
Inhalation	If breathing becomes bubbly, have the casualty sit and provide oxygen if available. If conscious, ensure the casualty sits or lies down. If unconscious and breathing is OK, place in the recovery position. If unconscious, check for breathing and apply artificial respiration if necessary. Transfer to hospital as soon as possible. Consult a doctor. Remove casualty from exposure ensuring one's own safety whilst doing so.

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

Skin contact	Blistering may occur. Progressive ulceration will occur if treatment is not immediate. There may be mild irritation at the site of contact.
Eye contact	Corneal burns may occur. May cause permanent damage. There may be irritation and redness. There may be pain and redness.
Ingestion	Blood may be vomited. Corrosive burns may appear around the lips. Nausea and stomach pain may occur. There may be bleeding from the mouth or nose. There may be difficulty swallowing. There may be irritation of the throat. There may be soreness and redness of the mouth and throat. There may be vomiting.
Inhalation	Absorption through the lungs can occur causing symptoms similar to those of ingestion. Drowsiness or mental confusion may occur. Exposure may cause coughing or wheezing. Nausea and stomach pain may occur. There may be irritation of the throat with a feeling of tightness in the chest. There may be shortness of breath with a burning sensation in the throat. There may be vomiting.
Delayed / immediate effects	Drowsiness or mental confusion may occur. Immediate effects can be expected after short-term exposure. Nausea and stomach pain may occur. There may be bleeding from the mouth or nose.

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

#### Immediate / special treatment

Do not induce vomiting. Eye bathing equipment should be available on the premises.

## 5. Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

**5.2 Special hazards arising from the substance or mixture**

**Exposure hazards**

Corrosive. In combustion emits toxic fumes.

**5.3 Advice for fire-fighters**

Wear protective clothing to prevent contact with skin and eyes. Wear self-contained breathing apparatus.

**6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

**Personal precautions**

Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Do not create dust. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Notify the police and fire brigade immediately. Refer to section 8 of SDS for personal protection details.

**6.2 Environmental precautions**

Do not discharge into drains or rivers.

**6.3 Methods and material for containment and cleaning up**

**Clean-up procedures**

Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

**6.4 Reference to other sections**

Refer to section 8 of SDS.

**7. Handling and storage**

**7.1 Precautions for safe handling**

**Handling requirements**

Avoid direct contact with the substance. Avoid the formation or spread of dust in the air. Do not handle in a confined space. Ensure there is exhaust ventilation of the area. Ensure there is sufficient ventilation of the area.

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

**Storage conditions**

Avoid contact with water or humidity. Keep container tightly closed. Store in cool, well ventilated area.

**7.3 Specific end use(s)**

No data available.

**8. Exposure controls/personal protection**

**8.1 Control parameters**

**Workplace exposure limits**

No workplace exposure limit control parameters set

**8.2 Exposure controls**

Engineering measures	Ensure there is exhaust ventilation of the area. Ensure there is sufficient ventilation of the area.
Respiratory protection	Respiratory protective device with particle filter. Self- contained breathing apparatus must be available in case of emergency.
Hand protection	Protective gloves.
Eye protection	Tightly fitting safety goggles. Ensure eye bath is to hand. Safety glasses.
Skin protection	Protective clothing.

**9. Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Physical state	Solid
Colour	Black
Odour	No data available.
Melting point/Freezing point	No data available.
Boiling point/initial boiling point/boiling range	No data available.
Flammability	No data available.
Lower/Upper explosion limit	No data available.
Flash Point	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	1140 g/L
Partition coefficient n-octanol/water	No data available.
Vapour pressure	No data available.
Density/relative density	No data available.
Relative vapour pressure	No data available.
Particle characteristics	No data available.

## 9.2 Other information

No data available.

## 10. Stability and reactivity

### 10.1 Reactivity

Stable under recommended transport or storage conditions.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

#### Hazardous reactions

Decomposition may occur on exposure to conditions or materials listed below. Hazardous reactions will not occur under normal transport or storage conditions.

### 10.4 Conditions to avoid

Heat.

### 10.5 Incompatible materials

#### Materials to avoid

Strong acids. Strong oxidising agents.

## 11. Toxicological information

### 11.1 Information on toxicological effects

#### a) Acute toxicity

No data available.

#### b) Skin corrosion/irritation

Skin corrosion/irritation (Category 1B)

#### c) Serious eye damage/irritation

Serious eye damage/eye irritation (Category 1)

#### d) Respiratory or skin sensitisation

No data available.

#### e) Germ cell mutagenicity

No data available.

#### f) Carcinogenicity

No data available.

#### g) Reproductive toxicity

No data available.

#### h) STOT-single exposure

No data available.

i) **STOT-repeated exposure**

No data available.

ii) **Aspiration hazard**

No data available.

11.2 **Symptoms / routes of exposure**

<b>Skin contact</b>	Blistering may occur. Progressive ulceration will occur if treatment is not immediate. There may be mild irritation at the site of contact.
<b>Eye contact</b>	Corneal burns may occur. May cause permanent damage. There may be irritation and redness. There may be pain and redness.
<b>Ingestion</b>	Blood may be vomited. Corrosive burns may appear around the lips. Nausea and stomach pain may occur. There may be bleeding from the mouth or nose. There may be difficulty swallowing. There may be irritation of the throat. There may be soreness and redness of the mouth and throat. There may be vomiting.
<b>Inhalation</b>	Absorption through the lungs can occur causing symptoms similar to those of ingestion. Drowsiness or mental confusion may occur. Exposure may cause coughing or wheezing. Nausea and stomach pain may occur. There may be irritation of the throat with a feeling of tightness in the chest. There may be shortness of breath with a burning sensation in the throat. There may be vomiting.
<b>Delayed / immediate effects</b>	Drowsiness or mental confusion may occur. Immediate effects can be expected after short-term exposure. Nausea and stomach pain may occur. There may be bleeding from the mouth or nose.
<b>Other information</b>	No data available.

12. **Ecological information**

12.1 **Toxicity**

No data available.

12.2 **Persistence and degradability**

Not biodegradable.

12.3 **Bioaccumulative potential**

Bioaccumulation potential.

12.4 **Mobility in soil**

Readily absorbed into soil.

12.5 **Results of PBT and vPvB assessment**

This substance is not identified as a PBT substance.

12.6 **Endocrine disrupting properties**

This substance is not identified as having endocrine disrupting properties

12.7 **Other adverse effects**

No data available.

13. **Disposal considerations**

13.1 **Waste treatment methods**

**Disposal operations**

Transfer to a suitable container and arrange for collection by specialised disposal company.

**NB**

The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

#### 14. Transport information

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
UN3260	UN3260	UN3260	UN3260	UN3260
<b>14.2. UN proper shipping name</b>				
CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	Corrosive solid, acidic, inorganic, n.o.s.	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
<b>Transport document description</b>				
UN3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (RUTHENIUM(III) CHLORIDE HYDRATE, 99.95+% (METALS BASIS)), 8, II	UN3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (RUTHENIUM(III) CHLORIDE HYDRATE, 99.95+% (METALS BASIS)), 8, II	UN3260 Corrosive solid, acidic, inorganic, n.o.s. (Ruthenium(III) chloride hydrate, 99.95+% (metals basis)), 8, II	UN3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (RUTHENIUM(III) CHLORIDE HYDRATE, 99.95+% (METALS BASIS)), 8, II	UN3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (RUTHENIUM(III) CHLORIDE HYDRATE, 99.95+% (METALS BASIS)), 8, II
<b>14.3. Transport hazard class(es)</b>				
8	8	8	8	8
				
<b>14.4. Packing group</b>				
II	II	II	II	II
<b>14.5. Environmental hazards</b>				
No	No	No	No	No

#### 15. Regulatory information

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

This Safety Data Sheet is prepared in accordance with Commission Regulation (EC) 1907/2006, amended by Commission Regulation (EU) 2020/787.

##### Authorisations/Restrictions

Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation: No data available.

Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances: No data available.

Regulation (EC) 1005/2009 on substances that deplete the ozone layer: No data available.

Regulation (EC) 850/2004 on persistent organic pollutants, amended by (EU) No 2019/1021: No data available.

##### 15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

#### 16. Other information

##### H-Statement Full Texts

H290 May be corrosive to metals  
 H302 Harmful if swallowed  
 H314 Causes severe skin burns and eye damage  
 H318 Causes serious eye damage

H412 Harmful to aquatic life with long lasting effects

### Abbreviations Full Texts

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ALARP	As low as is reasonably practicable
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging Regulations
COSHH	Control of Substances Hazardous to Health
EC Number	European Community Number
EC50	Effective Concentration 50%
EILINCS	European List of Notified Chemical Substances
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonised System
HSE	Health & Safety Executive UK
IATA	International Air Transport Association
IM	Intramuscular
IMDG	The International Maritime Dangerous Goods Code
IP	Intraperitoneal
IV	Intravascular
LD50	Lethal Dose 50%
LOEC	Lowest Observable Effective Concentration
LTEL	Long Term Exposure Limit
NOEC	No Observable Effective Concentration
OECD	Organisation for Economic Cooperations and Development
PBT	Persistent Bioaccumulative Toxic
PPE	Personal Protective Equipment
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
SC	Subcutaneous
SDS	Safety Data Sheet
STEL	Short Term Exposure Limit
STOT	Specific Target Organ Toxicity
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
WEL	Workplace Exposure Limits

**This Safety Data Sheet is prepared in accordance with Commission Regulation (EC) 1907/2006, amended by Commission Regulation (EU) 2020/787.**

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