

SAFETY DATA SHEET

Version Number: 6

Revision Date: 12 Feb 2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: Hexaammineruthenium (III) chloride
Product Code: CMG – 18015
CAS No. 14282-91-8
REACH Registration No: Not applicable, substance is exempt from registration.

1.2 Relevant identified use for the substance or mixture and uses advised against

Laboratory Chemical, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

MANUFACTURER: Ceimig Limited
ADDRESS: Units 1 – 3 Smeaton Road
Wester Gourdie Industrial Estate
DUNDEE
DD2 4UT
Telephone: + 44 (0) 1382 624127
Fax: + 44 (0) 1382 611777
E-mail address: info@ceimig.com

1.4 Emergency Telephone Number

Telephone: + 44 (0) 1382 624127
The above telephone number is only available during office hours of 9am to 5pm (UK Time)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (EU-GHS/CLP)

Skin irritation (Category 2)
Eye irritation (Category 2)
Specific target organ toxicity – single exposure (Category 3)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Irritating to eyes, respiratory system and skin.

2.2 Label Elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Pictogram



Signal Word Warning

Hazard statement(s)

H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray
P305 + P351+ P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

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Supplemental Hazard Statement(s) none

According to EU Directive 67/548/EEC as amended

Hazard symbol(s)



R-phrases(s)

R36/37/38

Irritating to eyes, respiratory system and skin

S-phrases(s)

S26

S36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
Wear suitable protective clothing.

2.3 Other Hazards

none

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula $H_{18}Cl_3N_6Ru$
Molecular Weight 309.61 g/mol

Component	Concentration
Hexaammineruthenium (III) chloride	
CAS No: 14282-91-8	-
EC No: 238-176-8	
Index No: -	

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration.

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray, alcohol resistant foam, dry chemical or carbon dioxide

5.2 Special Hazards arising from the substance or mixture

Nitrogen oxides (NOx), Hydrogen chloride gas, Ruthenium oxide



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5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For exposure control see section 8. For disposal see section 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dusts and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place. Air sensitive. Store under inert gas,

7.3 Specific end use(s)

no data available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure Controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye Protection

Face Shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin and body protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves 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. The selected protective gloves have to satisfy the specifications of EU directive 89/686/EEC and the standard EN 374 derived from it. Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures:

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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9.1 Information on basic physical and chemical properties

a) Appearance	Form: solid, Colour: yellow
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	no data available
f) Initial boiling point and boiling range	no data available
g) Flash point	no data available
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/Lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	no data available
n) Solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available
t) Oxidising properties	no data available

9.2 Other information

no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Nitrogen oxides (NO_x), Hydrogen chloride gas, Ruthenium oxide

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

no data available

Skin corrosion/Irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin Sensitisation

no data available



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Germ cell mutagenicity

no data available

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

Reproductive toxicity

no data available

Specific target organ toxicity – single exposure

Inhalation – May cause respiratory irritation.

Specific target organ toxicity – repeated exposure

no data available

Aspiration hazard

no data available

Potential Health Effects

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin, Causes skin irritation.

Eyes

Causes eye irritation

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS#: VM2651530

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.



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SECTION 14: TRANSPORT INFORMATION

14.1 UN number			
ADR/RID	IMDG	IATA	
Not dangerous goods	Not dangerous goods	Not dangerous goods	
14.2 UN proper shipping name			
ADR/RID			
Not dangerous goods			
IMDG			
Not dangerous goods			
IATA			
Not dangerous goods			
14.3 Transport hazard class(es)			
ADR/RID	IMDG	IATA	
Not dangerous goods	Not dangerous goods	Not dangerous goods	
14.4 Packing Group			
ADR/RID	IMDG	IATA	
Not dangerous goods	Not dangerous goods	Not dangerous goods	
14.5 Environmental Hazards			
ADR/RID	IMDG	IATA	
No	Marine Pollutant: No	No	
14.6 Special Precautions for user			
no data available			

SECTION 15: REGULATORY INFORMATION

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

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
no data available
- 15.2 Chemical Safety Assessment**
no data available

SECTION 16: OTHER INFORMATION

Further Information:

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.