

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifiers

Product Name: Chloro(pentamethylcyclopentadienyl)ruthenium(II) tetramer  
 CAS Number: 113860-07-4  
 Catalog Numbers: A323351

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

Identified uses: For laboratory research purposes. Not for drug or household use.

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

Ambeed, Inc.  
 3205 N WILKE RD, STE 3205-125, Arlington Hts, IL 60004, USA  
 Tel: 630-580-1088 E-mail: sales@ambeed.com

### 1.4 Emergency telephone number

Emergency phone (USA): 1-352-323-3500  
 Emergency phone (Canada): 1-800-535-5053

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Skin corrosion/irritation (Category 2) H315

Serious eye damage/eye irritation(Category 2A ) H319

Specific target organ toxicity, single exposure;Respiratory system(Category 3) H335

No Resource File

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word:

Warning

Hazard statement(s)

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

Precautionary statement(s)

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340+P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician 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.
P337+P313	If eye irritation persists: Get medical advice/attention.

### 2.3 Other hazards

Additional precautionary phrases are located throughout the safety data sheet.

## 3. COMPOSITION, INFORMATION ON INGREDIENTS

- 3.1 Molecular Formula: C<sub>40</sub>H<sub>60</sub>Ru<sub>4</sub>Cl<sub>4</sub>  
 Molecular Weight: 1087.00

Component		Concentration
Chloro(pentamethylcyclopentadienyl)ruthenium(II) tetramer		
CAS Number	113860-07-4	-

## 4. FIRST AID MEASURES

## 4.1 Description of 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

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

## In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

## If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## 5. FIRE FIGHTING MEASURES

## 5.1 Extinguishing media

Suitable extinguishing media: alcohol-resistant foam, dry chemical or carbon dioxide

Unsuitable extinguishing media: no data

## 5.2 Special hazards arising from the substance or mixture

In combustion toxic fumes may form.

## 5.3 Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective clothing to prevent contact with skin and eyes.

## 6. ACCIDENTAL RELEASE MEASURES

## 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas.

## SAFETY DATA SHEET (A323351)

Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
Do not attempt to take action without suitable protective clothing.  
For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains or river.  
Alert the neighbourhood to the presence of fumes or gas.

### 6.3 Methods and materials for containment and cleaning up

Mix with sand or vermiculite. Sweep up and shovel. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

### 6.4 Reference to other sections

For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Wash hands thoroughly after handling.  
Ensure there is sufficient ventilation of the area.  
Normal measures for preventive fire protection. For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated area. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Inert atmosphere, 2-8°C

### 7.3 Specific end use(s)

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

### 8.1 Control parameters

Components with workplace control parameters  
Contains no substances with occupational exposure limit values.

### 8.2 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

## SAFETY DATA SHEET (A323351)

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.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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).

### Control of environmental exposure

Do not let product enter drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Form: solid
Boiling Point	No data available
Melting Point	No data available
Odour	No data available
Odour Threshold	No data available
pH	No data available
Flash point	No data available
Evaporation rate	No data available
Vapour pressure	No data available
Vapor Density	No data available
Relative density	No data available
Solubility in water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity No Data	No data available
Explosive properties	No data available
Oxidizing properties	No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 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

Carbon monoxide , carbon dioxide , hydrogen chloride

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

Acute Toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye Damage/irritation	No data available
Respiratory or skin sensitisation	No data available
Germ Cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Aspiration hazard	No data available

### 11.2 Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

## 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

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Disposal Operations

Consult state, local or national regulations for proper disposal. Hand over to authorised disposal company as hazardous waste.

#### Disposal of Packaging

Disposal must be made according to official regulations.

## 14. TRANSPORT INFORMATION

### 14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

Product Url: [www.ambeed.com/products/113860-07-4.html](http://www.ambeed.com/products/113860-07-4.html)

For Research Use Only!

### 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: -

### 14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

### 14.5 Environmental hazards

ADR/RID: -

IMDG: -

IATA: -

### 14.6 Special precautions for user

No special precautions required

### 14.7 Further information

No data available

## 15. REGULATORY INFORMATION

Safety, health and environmental and national regulations:

Product is not subject to any additional regulations or provisions

#### California Proposition 65

Not listed on California's listing of known or potential carcinogens.

#### U.S. Federal Regulations

SARA 313: Not applicable

SARA 302: Not applicable

SARA 311/312 Hazard Categories: See section 2 for more information

#### Safety Assessment

No Chemical Safety Assessment

## 16. OTHER INFORMATION

The reference company name of written contents

Company: Ambeed, Inc.

Tel: 630-580-1088 Fax: 630-581-0788 E-mail: sales@ambeed.com

Address: 3205 N WILKE RD, STE 3205-125, Arlington Hts, IL 60004, USA

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

Revision Date 11/04/2023

Print Date 05/02/2024