

## EC360® RUBY Thermal Paste Material Safety Datasheet (MSDS)

Date: 23-Oct-2020

### Section 1: Identification of the Product and of the Company

#### 1.1 Product Identifier

Commercial Name: EC360® RUBY

Variation	MPN	EAN
EC360® RUBY 13.4W/mK Thermal Paste (1g)	EC360T010	0675834582376
EC360® RUBY 13.4W/mK Thermal Paste (4g)	EC360T011	0675834582383
EC360® RUBY 13.4W/mK Thermal Paste (20g)	EC360T012	0675834582390

#### 1.2 Relevant identified Uses of the Product and Uses Advised Against

Use of the product: Electrical industry and electronics

Uses advised against: None known

#### 1.3 Details of the Company Supplying the Material Safety Datasheet

Jaden Technologies GmbH  
Augustastr. 14  
47198 Duisburg  
Germany  
Email: sales@extremecool360.com

#### 1.4 Emergency Telephone Number

English: +49 20664609360

German: +49 20664609360

### Section 2: Hazards Identification

#### 2.1 Dangerous Goods Classification

Not applicable

#### 2.2 Chemical Classification

Non-dangerous chemical goods

## 2.3 Hazard Classification

Dangerous for the environment

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## Section 3: Composition / Information on Ingredients

### 3.1 Chemical Characterization

Mixture

### 3.2 Ingredients

According to EU Directives 67/548/EEC or 1999/45/EC:

Name	CAS-No	Conc. (% w/w)	Classification
Polydimethylsiloxane	63148-62-9	< 20	Dangerous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Magnesium acetylide	12122-46-2	< 18	
Aluminium oxide	1344-28-1	> 42	
Graphene	1034343-98-0	> 5	
Magnesium oxide	1309-48-4	< 15	

CLP classifications are based on all current available data including from known international organizations. These classifications are subject to revision as more information becomes available.

## Section 4: First Aid Measures

### 4.1 Protection

No special precautions are necessary for first-aiders.

### 4.2 First Aid Measures

<b>Inhalation:</b>	Remove to fresh air. Get medical attention if symptoms occur.
<b>Skin contact:</b>	Wash with water and soap. Get medical attention if symptoms occur.
<b>Eye contact:</b>	Flush eyes with water for 15 minutes. Get medical attention if symptoms occur.
<b>Swallowing:</b>	Do not induce vomiting. Rinse mouth thoroughly with water.

Get medical attention.

## 4.3 Most Important Symptoms and Effects, Both Acute and Delayed

None known

## 4.4 Indication of Immediate Medical Attention and Special Treatment needed

Treat symptomatically and supportively. For further information contact Jaden Technologies GmbH.

## Section 5: Firefighting Measures

### 5.1 Extinguishing Media

**Suitable extinguishing media:** Small fires: Carbon Dioxide (CO<sub>2</sub>), Dry Chemical, Water spray  
Large fires: Dry Chemical, Alcohol-resistant foam, Water spray

**Unsuitable extinguishing media:** None known

### 5.2 Special Hazards Arising from the Product

**Specific hazards during firefighting:** Exposure to combustion products may be a hazard to health.

**Hazardous combustion products:** Carbon oxides and traces of incompletely burned carbon compounds  
Silicon dioxide  
Metal oxides  
Formaldehyde

### 5.3 Advice for Firefighters

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus for firefighting. Use protective clothing.

**Specific extinguishing methods:** Use extinguishing measures that are appropriate to local circumstances and surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from the fire area if it is safe to do so. Determine the need to evacuate or isolate the fire area according to your local emergency plan.

## Section 6: Accidental Release Measures

## 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Wear proper protective equipment. Avoid eye contact. Do not swallow.

## 6.2 Environmental Precautions

Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers

## 6.3 Methods and Materials for Containment and Cleaning Up

Scrape up and place in a container fitted with a lid. Clean area as appropriate since spilled materials, even in small quantities, produce a slippery surface. Final phase of cleaning may require steam, solvent or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Determine and follow applicable laws and regulations for disposal.

## Section 7: Handling and Storage

### 7.1 Safe Handling

General ventilation is recommended. Local ventilation is recommended. Avoid eye contact. Do not swallow. Do not breath. Do not empty into drains. Wash hands after handling, especially before eating, drinking and smoking, exercise good industrial hygiene practice.

### 7.2 Storage

Do not store with oxidizing agents. Storage temperature: - 25 °C to 50 °C

### 7.3 Unsuitable Packaging Materials

None known

## Section 8: Exposure Controls / Personal Protection

### 8.1 Control Parameters

Name	CAS-No	Exposure Limits
Treated filler	-	Observe zinc oxide limits. OSHA PEL (final rule): TWA 15 mg/m <sup>3</sup> Total dust 5 mg/m <sup>3</sup> respirable fraction. ACGIH TLV: TWA 10 mg/m <sup>3</sup> total dust.

## 8.2 Exposure Controls

**Engineering Controls:** Ventilation: Refer to Section 7.1.

### Personal protection equipment

**Respiratory protection:** Suitable respiratory protection should be worn if the product is used in large quantities, confined spaces or in other circumstances if the OEL may be exceeded. Depending on the working conditions, wear a respiratory mask with a filter(s) A or use a self-contained respirator. The choice of filter depends on the amount of chemical being handled in the place of work. Contact your respiratory protection supplier regarding filter characteristics.

**Hand protection:** Gloves are normally not required.

**Eye / face protection:** Use proper protection, safety glasses are a requirement.

**Skin protection:** Protective equipment is not normally required, wash hands after handling.

**Hygiene measures:** Exercise good industrial hygiene practice. Wash hands after handling, especially before eating, drinking and smoking.

**Additional information:** These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

**Environmental exposure controls:** Refer to Section 6 and Section 12.

## Section 9: Physical and Chemical Properties

**Physical form:** Grease

**Color:** grey

**Odor:** None

**Acidity:** Use safety glasses.

**Flash point:** > 260 °C (Seta Closed Cup)

**Explosive properties:** No

**Specific gravity:** 2.5 g/cm<sup>3</sup>

**Oxidizing properties:** No

## Section 10: Stability and Reactivity

### 10.1 Reactivity

None known.

### 10.2 Stability

Stable under normal usage conditions.

### 10.3 Possibility of Hazardous Polymerization

Hazardous polymerization will not occur.

### 10.4 Conditions to Avoid

None known.

### 10.5 Materials to Avoid

Can react with strong oxidizing agents.

### 10.6 Hazardous Decomposition Products

Carbon oxides and traces of incompletely burned carbon compounds, silicon dioxide, metal oxides, formaldehyde.

## Section 11: Toxicological Information

### 11.1 Acute Toxicity

**Inhalation:** No significant effects expected from a single short-term exposure

**Eye contact:** Direct contact may cause mild irritation.

**Skin contact:** No significant irritation expected from a single short-term exposure.

**Ingestion:** Low ingestion hazard in normal use.

### 11.2 Chronic Toxicity

**Inhalation:** No known applicable information.

**Skin contact:** Repeated or prolonged exposure may cause irritation.

**Ingestion:** Repeated ingestion or swallowing large amounts may cause internal injuries.

### 11.3 Other Health Effects

**Inhalation:** Inhalation of fumes may result in metal fume fever, a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness, and cough.

**Sensitizing:** None known.

**Mutagenic:** None known.

**Reproductive:** None known.

**Carcinogenic:** None known.

The above listed potential effects of overexposure are based on actual data, the results of studies performed upon similar compositions, component data, and / or expert reviews of the products.

## Section 12: Ecological Information

### 12.1 Ecotoxicity Effects

Toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. However, due to the physical form and water-insolubility of the product the bioavailability is negligible.

### 12.2 Persistence and Degradability

Solid material, insoluble in water. No adverse effects are predicted.

### 12.3 Release to Waters

No adverse effects on bacteria are predicted.

## Section 13: Disposal Considerations

### 13.1 Product Disposal

This material must be disposed of as hazardous waste

### 13.2 Packaging Disposal

Dispose of in accordance with local regulations.

## 13.3 Disposal information

According to the European Waste Catalogue, waste codes are application specific and not related to specific products. Waste codes should be assigned by the user, preferably in dialog with the waste disposal authorities.

## Section 14: Transport Information

### 14.1 Road / Rail

Not subject to ADR / RID.

### 14.2 Sea transport

Not subject to IMDG code. With regard to transport the International Maritime Dangerous Goods (IMDG) Code (2018 Edition) is cited and considered.

### 14.3 Air transport

Not subject to IATA / ICAO regulations. With regard to transport the International Air Transport Association(IATA) Dangerous Goods Regulations (61st Edition, 2020) and the International Civil Aviation Organization (ICAO) Technical Instructions (2017-2018 Edition) are cited and considered.

### 14.4 Additional Information

Our products are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in CE and RoHS that can be treated as "Non-Dangerous Goods".

## Section 15: Regulatory Information

### 15.1 Safety, Health and Environmental Regulations / Legislation Specific for the Product

<b>IECSC:</b>	All ingredients listed or exempt.
<b>EINECS:</b>	Not determined.
<b>MITI:</b>	Consult Jaden Technologies GmbH.
<b>KECL:</b>	One or more ingredients are not listed or exempt or identified.
<b>PICCS:</b>	One or more ingredients are not listed or exempt.
<b>TSCA:</b>	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances



**AICS:** One or more ingredients are not listed or exempt.

## Section 16: Other Information

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. Jaden Technologies GmbH shall not be held responsible for any defect in the product covered by this Material Safety Data Sheet, should the existence of such a defect not be detectable considering the current state of scientific and technical knowledge.

It is the responsibility of persons in receipt of this Material Safety Data Sheet (MSDS) to review these recommendations in the specific context of handling, disposing or in any other way using the product and determine whether they are appropriate. If the recipient subsequently produces a formulation containing the product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this Material Safety Data Sheet to their own Material Safety Data Sheet in compliance with applicable laws and regulation.

This Material Safety Data Sheet has been prepared in compliance with European law. If you purchase this material outside Europe, where compliance laws may differ, you should receive a Material Safety Data Sheet applicable to the country in which the product is sold and intended to be used from your local EC360 supplier. Please note that the appearance and content of the Material Safety Data Sheet may vary between different countries, reflecting different compliance requirements.