Section 1. Identification

GHS product identifier : Zeonex RS420
Other means of identification : Not applicable.
Product code : Z02204
Product use : Electrical Applications.

Supplier's details : Zeon Specialty Materials Inc.
25 Metro Drive #238
San Jose, CA 95110
USA
Phone : +1-408-641-7889
FAX : +1-408-516-9382

E-mail address of person responsible for this SDS : Mr. Toshiro Katayama: toshiro.katayama@zeonsmi.com
Mr. Larry Atupem: larry.atupem@zeonsmi.com

Emergency telephone number (with hours of operation) : CHEMTREC: 1-800-424-9300 (24 hours a day/7 days per week)
Outside the United States (Call Collect): 001-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Supplemental label elements : Eye, skin and respiratory irritation may occur due to vapors and fumes created during processing operations. In a fire, decomposition may produce toxic gases/fumes. Handling operations can promote accumulation of static charges which may ignite flammable materials. Take precautionary measures against static discharge. Keep container tightly closed. Heated material can cause thermal burns.

Hazards not otherwise classified : None known.
Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not applicable.
Product code : Z02204

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polycycloolefin resin mixture</td>
<td>&gt;99</td>
<td>Proprietary</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Do not rub affected area. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Contact with hot material causes thermal skin burns. In case of burns, immediately cool affected skin with cold water and continue for as long as possible or apply wet cloths to the area until medical attention can be obtained.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. If potentially dangerous quantities of this material have been swallowed or if you feel unwell, call a poison control center or physician immediately.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes. Eye irritation may occur due to vapors and fumes created under conditions of thermal decomposition and overheating.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. Respiratory irritation may occur due to vapors and fumes created under conditions of thermal decomposition and overheating.

Skin contact : Heated material can cause thermal burns.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.
Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**: In case of fire, use water spray (fog), foam or dry chemical. Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: Do not use carbon dioxide or water jets.

**Specific hazards arising from the chemical**: Minimize dust generation and accumulation; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Handling operations can promote accumulation of static charges which may ignite flammable materials. Take precautionary measures against static discharge.

**Hazardous thermal decomposition products**: In a fire, decomposition may produce toxic gases/fumes.

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark**: Results of laboratory tests for thermal properties (conducted according to OECD Guidelines):
- Thermal stability: Stable at room temperature [OECD Test: 93/105/EC Annex VIIID 3.16]

**Remark (Explosibility)**: Explosive properties: Not explosive [OECD Test: 93/105/EC Annex VIIID 3.11]

Section 6. Accidental release measures

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

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

**For emergency responders**: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods and materials for containment and cleaning up**

**Small spill**: Vacuum or sweep up material and place into appropriate containers for reuse, recycling, or disposal.

**Large spill**: Prevent entry into sewers, water courses, basements or confined areas. Move containers from spill area. Vacuum or sweep up material and place into appropriate containers for reuse, recycling, or disposal. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Handling operations can promote accumulation of static charges which may ignite flammable materials. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Minimize dust generation and accumulation; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Avoid all possible sources of ignition (spark or flame).

Decomposition may occur during exposure to elevated temperatures or excessive time periods. Equipment should not be shut down for extended time periods with compound in it or decomposition may occur. Employees should wear air-supplied respirators, gloves, and protective clothing when removing decomposition material. Avoid inhalation of vapors and fumes created under conditions of thermal decomposition and overheating.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store indoors in original container at normal room temperature* and humidity* and well-ventilated area, protected from direct sunlight and formation of condensation. Store it away from incompatible materials (see Section 10), food and drink. Keep container tightly closed and sealed until ready to use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. *Preferred normal room temperature and humidity: 0°C - 40°C (32°F - 104°F) and 30%-90% Relative Humidity (RH).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polycycloolefin resin</td>
<td>None.</td>
</tr>
<tr>
<td>Particulates Not Otherwise Regulated (Total Dust)</td>
<td>OSHA PEL (United States, 9/2012). TWA: 15 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures: Wash hands before breaks and immediately after handling the product.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. When handling heated or molten material, the following should be worn: chemical splash goggles and a face shield.

Skin protection

Date of issue/Date of revision: 10/03/2019  Date of previous issue: 12/15/2017  Version: 4
**Section 8. Exposure controls/personal protection**

- **Hand protection**: Follow good industrial hygiene practice. When handling hot material, wear heat-resistant protective gloves that are able to withstand the temperature of molten product.
- **Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- **Other skin protection**: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- **Respiratory protection**: Respiratory protection is typically not necessary if room is well ventilated. If vapor or dust is generated and ventilation is inadequate, use a NIOSH certified respirator that will protect against dust/mist. Wear a positive pressure air-supplied respirator in situations where there may be potential for elevated airborne exposure such as during equipment malfunction, or product stagnation during processing that may lead to decomposition. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**Section 9. Physical and chemical properties**

**Appearance**

- **Physical state**: Solid. [Pellet]
- **Color**: Colorless.
- **Odor**: Odorless.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: Not available.
- **Boiling point**: Not applicable.
- **Flash point**: Not applicable.
- **Evaporation rate**: Not applicable.
- **Flammability (solid, gas)**: Results of laboratory tests for thermal properties (conducted according to OECD Guidelines):
  - Thermal stability: Stable at room temperature [OECD Test: 93/105/EC Annex VIIID 3.16]
- **Lower and upper explosive (flammable) limits**: Not applicable.
- **Vapor pressure**: Negligible.
- **Vapor density**: Not applicable.
- **Relative density**: 1.01 [Water = 1]
- **Solubility**: Not available.
- **Solubility in water**: Insoluble.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: 455°C (851°F)
- **Decomposition temperature**: Not available.
- **Viscosity**: Not applicable.
### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>Under normal conditions of storage and use, hazardous polymerization will not occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage and handling conditions (see Section 7).</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Overheating. Prevent dust accumulation.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Reactive or incompatible with the following materials: Strong oxidizing materials Reducing agents</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>If product is exposed to significant temperatures, decomposition may occur and produce toxic gases/fumes. Decomposition products: carbon monoxide; carbon dioxide; hydrocarbons</td>
</tr>
</tbody>
</table>

### Section 11. Toxicological information

#### Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product/ingredient name</strong></td>
</tr>
<tr>
<td><strong>Result</strong></td>
</tr>
<tr>
<td><strong>Species</strong></td>
</tr>
<tr>
<td><strong>Dose</strong></td>
</tr>
<tr>
<td><strong>Exposure</strong></td>
</tr>
</tbody>
</table>

**Conclusion/Summary** : Not available.

**Irritation/Corrosion**

**Conclusion/Summary** : Not available.

**Sensitization**

**Conclusion/Summary** : Not available.

**Mutagenicity**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : This product contains no components present at concentrations equal to or greater than 0.1% listed by IARC, OSHA, NTP, or ACGIH as a carcinogen.

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure** : Routes of entry anticipated: Dermal; Inhalation of dusts/vapors during processing.

**Potential acute health effects**

**Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes. Eye irritation may occur due to vapors and fumes created under conditions of thermal decomposition and overheating.
Section 11. Toxicological information

Inhalation: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. Respiratory irritation may occur due to vapors and fumes created under conditions of thermal decomposition and overheating.

Skin contact: Heated material can cause thermal burns.

Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects
Not available.

Conclusion/Summary: Not available.
General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity
Conclusion/Summary: Not available.

Persistence and degradability
Conclusion/Summary: Not available.

Bioaccumulative potential
Not available.

Mobility in soil

Date of issue/Date of revision: 10/03/2019  Date of previous issue: 12/15/2017  Version: 4
Section 12. Ecological information

Soil/water partition coefficient (K_\text{OC}) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Label</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Marine Pollutant: No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No.</td>
</tr>
</tbody>
</table>

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed
- Clean Air Act Section 602 Class I Substances : Not listed
- Clean Air Act Section 602 Class II Substances : Not listed

Date of issue/Date of revision : 10/03/2019  Date of previous issue : 12/15/2017  Version : 4
Section 15. Regulatory information

DEA List I Chemicals (Precursor Chemicals) : Not listed  
DEA List II Chemicals (Essential Chemicals) : Not listed  

SARA 302/304  
Composition/information on ingredients  
No products were found.  

SARA 304 RQ : Not applicable.  

SARA 311/312  
Classification : Not applicable.  

Composition/information on ingredients  
No products were found.  

State regulations  
Massachusetts : None of the components are listed.  
New York : None of the components are listed.  
New Jersey : None of the components are listed.  
Pennsylvania : None of the components are listed.  

International regulations  
Chemical Weapon Convention List Schedules I, II & III Chemicals  
Not listed.  

Montreal Protocol  
Not listed.  

Stockholm Convention on Persistent Organic Pollutants  
Not listed.  

Rotterdam Convention on Prior Informed Consent (PIC)  
Not listed.  

UNECE Aarhus Protocol on POPs and Heavy Metals  
Not listed.  

Inventory list  
China : All components are listed or exempted.  
Japan : Japan inventory (ENCS):  
All components are listed or exempted.  
Taiwan : All components are listed or exempted.  
United States : All components are listed or exempted.  

Section 16. Other information  

Hazardous Material Information System (U.S.A.), Fourth Edition  

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>0</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Physical hazards</td>
<td>0</td>
</tr>
</tbody>
</table>

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.
Section 16. Other information

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Flammability

Health

Instability/Reactivity

Special

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified.</td>
<td></td>
</tr>
</tbody>
</table>

History

- **Date of printing**: 10/03/2019
- **Date of issue/Date of revision**: 10/03/2019
- **Date of previous issue**: 12/15/2017
- **Version**: 4

Key to abbreviations:

- ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- DOT = Department of Transportation
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- N/A = Not available
- RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
- SGG = Segregation Group
- TDG = Transportation of Dangerous Goods
- UN = United Nations

References: Not available.

Indicates information that has changed from previously issued version.

Notice to reader

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user.