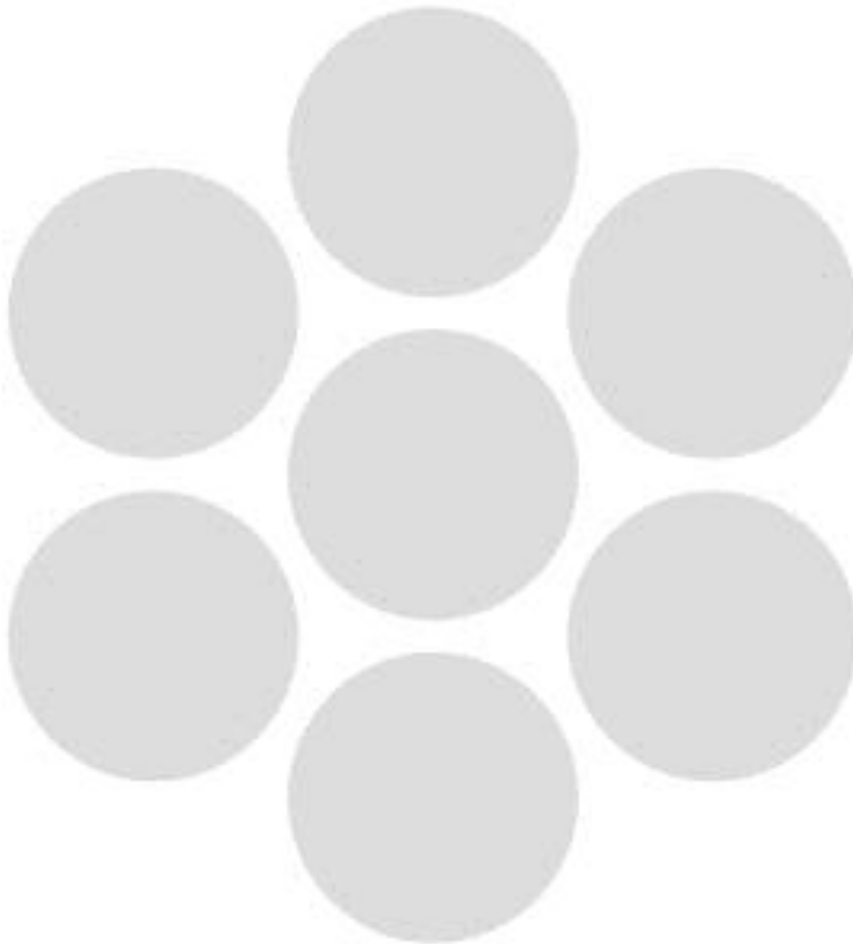


## MSDS – Cyclic Olefin Copolymers

C Technologies, Inc. does not manufacture Cyclic Olefin Copolymers. Cyclic Olefin Copolymers is manufactured for C Technologies, Inc. by Topas Advanced Polymers. Attached you will find the MSDS.



# Material Safety Data Sheet



Revision Date  
Revision Number

21-May-2012  
6 .00

product code **TP01**

## TOPAS® Cyclic Olefin Copolymers

### 1.PRODUCT AND COMPANY IDENTIFICATION

Identification of the substance/preparation

## TOPAS® Cyclic Olefin Copolymers

**Use of the Substance / Preparation**

injection molding articles for optical industry, packaging Industry, medical articles.

**Supplier**

**TOPAS Advanced Polymers, Inc.**  
7300 Turfway Rd.  
Florence, KY 41042  
United States

**Product Information**

+49 (0)1805-1-86727

**Emergency telephone number**

in USA, call 800 424 9300  
outside USA, call 703 527 3887, collect calls accepted

### 2. Hazards identification

#### Emergency Overview

**Product Description**

Physical state	granules
Colour	colourless
Odour	odourless

**OSHA Regulatory Status**

This material is non-hazardous as defined by the American OSHA Hazard Communication Standard (29CFR 1910.1200).

#### Potential Health Effects

**Principle Routes of Exposure**

Inhalation, Eye contact, Skin contact.

**Inhalation**

No information available. May cause irritation of respiratory tract. Overheating in processing may generate hazardous, irritating vapours.

**Eye contact**

No information available. Hot or molten material has the potential to cause thermal burns. Resin particles, like other inert materials, are mechanically irritating to eyes.

**Skin contact**

No information available. Hot or molten material has the potential to cause thermal burns. Polymer particles may cause mechanical irritation.

**Ingestion**

No information available. Essentially non-toxic based on biological activity of high molecular weight polymers.

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## TOPAS® Cyclic Olefin Copolymers

**Main symptoms** None known.  
**Chronic effects** No information available.

### 3. Composition / Information on ingredients

**Chemical characterization** contains ethylene-norbornene copolymer (CAS 26007-43-2)

**Remarks** The following specific grades of TOPAS are covered by this MSDS:  
5013L-10; 5013S-04; 6013D-61; 6013D-63; 6013M-07; 6013S-04; 6015D-61;  
6015S-04; 6017S-04; 8007D-61; 8007S-04; 8007X10

### 4. First aid measures

#### General advice

Remove/Take off immediately all contaminated clothing. Wash/Decontaminate removed clothing before reuse.

#### Inhalation

Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

#### Skin

Cool skin rapidly with cold water after contact with molten polymer. If polymer is stuck to skin, do not remove. Allow adhered polymer to come off naturally. Removal of adhered polymer may result in more tissue damages than if polymer is allowed to come off over time. When symptoms persist or in all cases of doubt seek medical advice.

#### Eyes

Resin particles, like other inert materials, are mechanically irritating to eyes. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

#### Ingestion

Do not induce vomiting without medical advice. Obtain medical attention.

#### Main symptoms

None known.

#### Notes to physician

Treat symptomatically.

### 5. Firefighting measures

#### Suitable extinguishing media

water spray, foam, dry chemical, carbon dioxide (CO<sub>2</sub>).

#### Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

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## TOPAS® Cyclic Olefin Copolymers

### Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases

Under conditions giving incomplete combustion, hazardous gases produced may consist of:

carbon monoxide (CO)

carbon dioxide (CO<sub>2</sub>)

Combustion gases of organic materials must in principle be graded as inhalation poisons

### Special protective equipment for fire-fighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

### Precautions for fire-fighting

Cool closed containers exposed to fire with water spray. Keep people away from and upwind of fire. Dike and collect water used to fight fire.

## 6. Accidental release measures

### Personal precautions

Avoid contact with skin and eyes. Do not breathe dust. Keep people away from and upwind of spill/leak. For emergency responders: Personal protection see section 8.

### Environmental precautions

Not readily biodegradable. Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

### Methods for containment

Stop the flow of material, if possible without risk.

### Methods for cleaning up

Sweep up and shovel into suitable containers for disposal. Like most thermoplastic plastics the product can be recycled. Dispose of in accordance with local regulations.

## 7. Handling and storage

### Handling

#### Advice on safe handling

Do not handle hot or molten material without appropriate protective equipment. Do not exceed recommended process temperatures to minimize release of decomposition products.

#### Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Dust can form an explosive mixture in air. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

#### Advice on the protection of the environment

See Section 8: Environmental exposure controls

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## TOPAS® Cyclic Olefin Copolymers

### Storage

#### Technical measures/Storage conditions

Keep away from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place.

#### Advice on common storage

No special restrictions on storage with other products

#### VCI Storage Class old!

11: Combustible solids

### 8. Exposure controls / Personal protection

#### Exposure limits United States of America

Component	TWA (mg/m <sup>3</sup> )	TWA (ppm)	STEL (mg/m <sup>3</sup> )	STEL (ppm)
Dust, general threshold limit value (inhalable fraction) CAS: None	10			
Dust, general threshold limit value (respirable fraction) CAS: None	3			

#### US OSHA Z-1

Component	Ceiling (mg/m <sup>3</sup> )	Ceiling (ppm)	PEL (mg/m <sup>3</sup> )	PEL (ppm)	Skin Designation
Dust, general threshold limit value (inhalable fraction) CAS: None			15		
Dust, general threshold limit value (respirable fraction) CAS: None			5		

#### US OSHA Z-1A Revoked (1993)

Component	TWA (mg/m <sup>3</sup> )	TWA (ppm)	STEL (mg/m <sup>3</sup> )	STEL (ppm)	Ceiling (mg/m <sup>3</sup> )	Ceiling (ppm)	Skin Designation
Dust, general threshold limit value (inhalable fraction) CAS: None	15						
Dust, general threshold limit value (respirable fraction) CAS: None	5						

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## TOPAS® Cyclic Olefin Copolymers

### Engineering measures

Ensure adequate ventilation. Provide for appropriate exhaust ventilation and dust collection at machinery.

### Personal protective equipment

#### General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe dust or mist. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Hygiene measures

Wash hands before breaks and immediately after handling the product. Take off all contaminated clothing immediately.

#### Respiratory protection

Based on workplace contaminant levels and working limits of the respirator, use a respirator approved by NIOSH

#### Hand protection

Heat resistant gloves.

#### Suitable material

leather gloves

#### Eye protection

Tightly fitting safety goggles.

#### Skin and body protection

Wear face-shield and protective suit for abnormal processing problems.

#### Thermal Hazard

When handling hot material, use heat resistant gloves. Heat only in areas with appropriate exhaust ventilation.

## 9. Physical and chemical properties

<b>Physical state</b>	granules
<b>Colour</b>	colourless
<b>Odour</b>	odourless
<b>Softening point</b>	>60 °C/ >140 F
<b>Bulk density</b>	550 - 600 g/l
<b>Method</b>	DIN 53466
<b>Vapour pressure</b>	< 0.001 mm Hg @25°C (77 F)
<b>Water solubility</b>	insoluble
<b>VOC Content(%)</b>	< 0.5 % (wt/wt)

## 10. Stability and reactivity

### Stability

Stable under normal conditions of handling, use and transportation.

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## TOPAS® Cyclic Olefin Copolymers

### Hazardous reactions

Hazardous polymerisation does not occur.

### Conditions to avoid

Avoid temperatures above 350 °C / 662F. Risk of decomposition.

### Materials to avoid

oxidizing agents.

## 11. Toxicological information

### Principle Routes of Exposure

Inhalation, Eye contact, Skin contact

### Acute toxicity

### Subacute, subchronic and prolonged toxicity

### Carcinogenicity, Mutagenicity, Reproductive toxicity

### Note

No toxicology information is available. Handle in accordance with good industrial hygiene and safety practice.

## 12. ECOLOGICAL INFORMATION

### Acute aquatic toxicity

### Note

No information on ecology is available. According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified.

## 13. Disposal considerations

### Product Information

Where possible recycling is preferred to disposal or incineration. May be taken to waste disposal site or incineration plant, with household waste. Rules of the local authorities must be observed.

### Uncleaned empty packaging

Regulations concerning reuse or disposal of used packaging materials must be observed.

## 14. Transport information

### ICAO/IATA

Not restricted

### IMDG

Not restricted

### D.O.T. (49CFR)

Not restricted

## 15. Regulatory information

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## TOPAS® Cyclic Olefin Copolymers

### OSHA Regulatory Status

This material is non-hazardous as defined by the American OSHA Hazard Communication Standard (29CFR 1910.1200).

### Federal Regulations

This product complies with U.S. Toxic Substance Control Act (TSCA)

## 16. Other information

Revision Date 21-May-2012  
Issuing date 05-Sep-2013

### Training advice

For effective first-aid, special training / education is needed.

### Hazard Rating Systems

#### NFPA (National Fire Protection Association)

Health Hazard	1
Fire Hazard	1
Reactivity	0

#### HMIS (Hazardous Material Information System)

Health Hazard	0
Flammability	1
Physical Hazard	0

### Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on TOPAS owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

### Further information for the safety data sheet

For more information, consult the Technical Data Sheet ([www.topas.com](http://www.topas.com)). Changes against the previous version are marked by \*\*\*.

### Disclaimer

The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. TOPAS Advanced Polymers, Inc. makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. User has sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards