

# MATERIAL SAFETY DATA SHEET

## KEYSORB 8030

### 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

**Product name** : 1,3-Bis[(2-cyano-3,3-diphenylacryloyl)oxy]-  
2,2-bis[[(2-cyano-3,3-diphenylacryloyl)oxy]methyl]propane  
Pentaerythritol tetrakis(2-cyano-3,3-diphenylacrylate)

**CAS number** : 178671-58-4

**Company name** : UV Chem-Keys Co., Ltd  
RM2607 Building No.1 Guosheng, Lane 388, Zhongjiang  
Road, Putuo District, Shanghai 200062 China  
Zip Code: 200122  
Tel: 86 21 58785816  
Fax: 86 21 38680173

### 2. Health Hazards Data

2.1 Classification of the substance or mixture

2.1.1 Classification according to 67/548/EEC and Regulation (EC) No 1272/2008

Regulation (EC) No 1272/2008	
Hazard classes and hazard categories	Hazard Statement
N/A	N/A

67/548/EEC	
Hazards characteristics	R Phrases
N/A	N/A

2.1.2 The most important adverse effects

2.1.2.1 The most important adverse physicochemical effects:

Not applicable.

2.1.2.2 The most important adverse human health effects:

Not applicable..

2.1.2.3 The most important adverse environmental effects:

Not applicable.

2.2 label elements

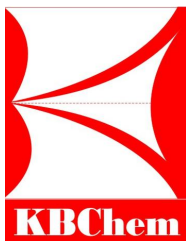
Hazard Pictograms: No Hazard Pictogram is used.

Signal Word(S): No signal word is used

Hazard Statement: Not applicable

Precautionary Statement: Not applicable

### 3. COMPOSITION / INFORMATION ON INGREDIENTS



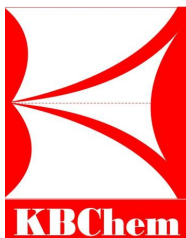
## MATERIAL SAFETY DATA SHEET

### KEYSORB 8030

**CAS Number** : 178671-58-4  
**Product Name** : 1,3-Bis[(2-cyano-3,3-diphenylacryloyl)oxy]-  
2,2-bis[[(2-cyano-3,3-diphenylacryloyl)oxy)methyl]propane  
Pentaerythritol tetrakis(2-cyano-3,3-diphenylacrylate)

#### 4. FIRST AID MEASURES (ACTION)

- Eye contact** : Rinse immediately with plenty of water for at least 15 minutes.  
In case of eye irritation, seek medical attention
- Skin contact** : Wash off with soap and plenty of water. Do not use organic solvents. In case of dermatitis, seek medical attention.
- Ingestion** : Immediately give plenty (>500 ml) of water (if possible charcoal slurry). In case of spontaneous vomiting be sure that vomitus can freely drain due to danger of suffocation. Give water repeatedly. Artificial induction of vomiting should be restricted to first aid staff. Give nothing by mouth in case of unconsciousness or convulsion. Seek medical advice
- Inhalation** : Rinse immediately with plenty of water for at least 15 minutes.  
In case of eye irritation, seek medical attention
- Suitable Extinguishing Media** : Water spray. Carbon dioxide, dry chemical powder or appropriate foam.
- Extinguishing Media Which Must Not Be Used For Safety Reasons** : High volume water jet
- Explosion Hazard** : Contaminated water from fire hoses or sprinklers, etc., must be prevented from draining into watercourses, sewers, or the ground water. Sufficient measures must be taken to retain water used for extinguishing. Contaminated water and soil must be disposed of in conformity with local regulations
- Special Protective Equipment For Firefighters** : Wear full protective clothing. Wear self-contained breathing apparatus
- Hazardous** : Oxides of carbon, oxides of nitrogen (NOX), toxic



## MATERIAL SAFETY DATA SHEET

### KEYSORB 8030

---

<b>Decomposition Products</b>	gases/vapours
-------------------------------	---------------

#### 5. ACCIDENTAL RELEASE MEASURES

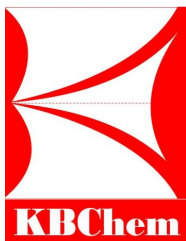
- |                                  |   |   |
|----------------------------------|---|---|
| <b>Personal Precautions</b>      | : | Do not breathe vapors/dust. Remove all sources of ignition. Avoid contact with skin, eyes and clothing  |
| <b>Environmental Precautions</b> | : | Do not flush into surface water, sanitary sewer or ground water system  |
| <b>Methods for Cleaning Up</b>   | : | Use mechanical handling equipment. Collect the spilled product into suitable containers, which must be tightly sealed and properly labelled. Avoid dust formation |

#### 6. FIRE-FIGHTING MEASURES

- |  |   |   |
|--|---|---|
| <b>Extinguishing media</b>   | : | Water spray, Carbon dioxide (CO <sub>2</sub> ), Foam, Dry powder  |
| <b>Extinguishing media which must not be used for safety reasons</b> | : | High volume water jet   |
| <b>Exposure hazards</b>  | : | Contaminated water from fire hoses or sprinklers, etc., must be prevented from draining into watercourses, sewers, or the ground water. Sufficient measures must be taken to retain water used for extinguishing. Contaminated water and soil must be disposed of in conformity with local regulations. |
| <b>Special protective equipment for firefighters</b>                 | : | Wear full protective clothing. Wear self-contained breathing apparatus.   |
| <b>Hazardous decomposition products</b>                              | : | Oxides of carbon, Oxides of nitrogen (NO <sub>x</sub> ), Hydrogen chloride, Toxic gases/vapours   |

#### 7. HANDLING AND STORAGE

- |                 |   |  |
|-----------------|---|--|
| <b>Handling</b> | : | Handle and open container with care. Avoid dust formation and ignition sources. Ensure good local exhaust ventilation. Do not eat, drink or smoke at the workplace |
|-----------------|---|--|



## MATERIAL SAFETY DATA SHEET

### KEYSORB 8030

**Storage** : Storage will be in appropriate areas with adequate spill containment and in accordance with state legislation.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

It is anticipated that waterside, transport and warehouse workers would only be exposed to the notified chemical in the event of an accidental spill. Should a spill occur, it is expected to be contained and collected using dust binding materials, and placed into suitable containers for recovery or disposal in accord with the MSDS and official regulations.

In the mixing, extrusion and moulding plants, the potential routes of worker exposure to the notified chemical will be dermal contact and inhalation. Spillages and dust generation during weighing, transferring, mixing, moulding, maintenance, and cleaning operations may also result in exposure to the eyes, skin, nose, throat and mucous membranes. Results of a particle size distribution study for Keysorb 8030 (test report not provided) indicates that although the majority of dust particles are in the inhalable range (10-100  $\mu\text{m}$ ), almost none are in the respirable range (<10  $\mu\text{m}$ ). High dust concentrations within the plastics processing plant have a potential for combustion or explosion. The notifier indicates that adequate ventilation will be in place to prevent workers from breathing dust and particulates. Local exhaust ventilation will be employed at all work areas when required.

During extrusion, at the formulation plant and during downstream use, the polymer compounds are heated at high temperatures for an extended period, and harmful fumes and vapours can evolve. It is expected that these fumes will be captured and scrubbed. Cross contamination will be avoided by thorough cleaning of the extruder and other processing equipment with purging compound prior to product changeover. Any incidents of accidental spillages will be contained and removed by mechanical means such as vacuuming or sweeping. It is intended that dust formation will be avoided and the release will be kept out of water supplies and sewers.

Plastics production plant operators will wear appropriate respirators, dust masks and safety glasses with side-shields/chemical goggles. Protective clothing and gloves will also be worn at all times.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	: White crystalline powder with no odour
<b>Density</b>	: 1198 kg/m <sup>3</sup> at 20°C
<b>Melting Point</b>	: 170-178°C
<b>Vapour Pressure</b>	: <10 <sup>-9</sup> kPa at 20°C
<b>Water Solubility</b>	: <1x10 <sup>-4</sup> g/L at 20°C
<b>Hydrolysis as a Function of pH</b>	: Not determined
<b>Partition Coefficient</b>	: log Pow = 8.0



## MATERIAL SAFETY DATA SHEET

### KEYSORB 8030

(n-octanol/water) log Pow = 13.4 (estimated)

#### 10. STABILITY AND REACTIVITY

Dissociation Constant	:	Not determined
Flammability Limits	:	Not considered highly flammable
Auto ignition Temperature	:	No self ignition to 400°C
Explosive Properties	:	Not considered explosive
Reactivity	:	Stable under normal environmental conditions

#### 11. TOXICOLOGICAL INFORMATION

Rat, acute oral	:	low toxicity
LD50 >2000 mg /kg bw		
Rat, acute dermal	:	low toxicity
LD50 >2000 mg /kg bw		
Rat, acute inhalation	:	Not sensitising
Rabbit, skin irritation	:	Slightly irritating
Rabbit, eye irritation		slightly irritating
Guinea pig, skin sensitisation - adjuvant test		No evidence of sensitisation (10 % notified chemical)
Rat, repeat dose oral toxicity - 28 days		NOAEL = 15000 ppm
Genotoxicity-bacterial reverse mutation		Non mutagenic
Genotoxicity - invitro chromosomal aberration test		Non genotoxic
Genotoxicity - in vivo gene mutation test		non genotoxic
Pharmacokinetic/Toxicokinetic studies		no data available
Developmental and reproductive effects		no data available
Carcinogenicity		no data available

#### 12. ECOLOGICAL INFORMATION

Acute toxicity to fish - Zebra fish



## MATERIAL SAFETY DATA SHEET

### KEYSORB 8030

LC50 >10000 mg /L at 96 hours.(based on nominal concentrations)

LC50>245 mg /L at 96 hours.(based on measured concentrations)

NOEC>10000 m g /L at 96 hours. (based on nominal concentrations)

NOEC>245 m g /L at 96 hours. (based on measured concentrations)

No mortalities or substance related sublethal effects were observed at any of the test concentrations.

The test substance is not toxic to fish up to the limit of its water solubility.

Acute toxicity to fish – Common carp

LC50>1000 m g /L at 96 hours. (based on nominal)

NOEC > 100 m g /L at 96 hours.

No mortalities were observed at any test concentrations. The only sublethal symptom recorded was swimming near water surface at the 1000 mg /L concentration (3 or 4 fish were observed at 1, 4, 24, 48, 72 and 96 hours after start of exposure).

The test substance is not toxic to fish up to the limit of its water solubility.

#### Acute toxicity to aquatic invertebrates

LC50 >100 mg /L at 48 hours

NOEC (or LOEC ) > 100 mg /L at 48 hours (the highest concentration tested)

No immobilised daphnia were observed. The analytical recovery rates in all analysed test solutions were below the detection limit. Test substance precipitation or physical effects were not reported.

The test substance is not toxic to Daphnia magna up to the limit of its water solubility.

#### Algal growth inhibition test

Method : EC Directive 92/ 69/EEC C. 3 Algal Inhibition Test .

The analytical recovery rates (after 0 and 72 hours) in all analysed test solutions were below the detection limit of 0.1 mg /L.

The test substance is not toxic to algae up to the limit of its water solubility.

### 13. DISPOSAL CONSIDERATIONS

Uncontaminated packaging may be reused.

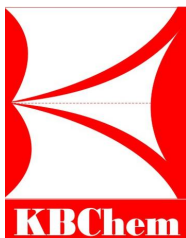
The notified chemical waste and contaminated packaging should be disposed of to an approved waste disposal facility in accordance with official regulations. Treatment options include incineration or secured land fill disposal.

Spills/release of the notified chemical should be prevented from entering drains, surface and ground water, or contaminating firefighting water.

Small spills should be picked up with suitable appliances while large spills contained with dust binding material prior to disposal in accordance with official regulations.

### 14. Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number:	Not regulated	Not regulated	Not regulated
UN Proper	Not regulated	Not regulated	Not regulated



## MATERIAL SAFETY DATA SHEET

### KEYSORB 8030

shipping name:			
Transport hazard Class:	Not regulated	Not regulated	Not regulated
Packaging group:	Not regulated	Not regulated	Not regulated
Environmental hazards:	No	No	No
Special precautions for user:	See section 3.2	See section 3.2	See section 3.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not regulated	Not regulated	Not regulated

#### 15. REGULATORY INFORMATION

RCRA status: Not a hazardous waste under RCRA (40 CFR 261).

CERCLA status: Not listed.

#### 16. Other information

**Legal disclaimer** : The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.