

Revision Date 08-Apr-2014

Revision Number 4

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

<b>Product Description:</b>	<b>Dicyclopentadiene diepoxide</b>
<b>Cat No. :</b>	<b>348510000; 348510050; 348510250; 348511000</b>
<b>Synonyms</b>	Bicyclopentadiene diepoxide
<b>CAS-No</b>	81-21-0
<b>EC-No.</b>	201-334-1
<b>Molecular Formula</b>	C10 H12 O2

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

<b>Recommended Use</b>	Laboratory chemicals
<b>Uses advised against</b>	No Information available

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

<b>Company</b>	Acros Organics BVBA Janssen Pharmaceuticaaan 3a 2440 Geel, Belgium
<b>E-mail address</b>	begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### CLP Classification - Regulation (EC) No 1272/2008

##### Physical hazards

Based on available data, the classification criteria are not met

##### Health hazards

Acute oral toxicity

Category 3

Serious Eye Damage/Eye Irritation

Category 2

##### Environmental hazards

Based on available data, the classification criteria are not met

#### Classification according to EU Directives 67/548/EEC or 1999/45/EC

**Symbol(s)**

Xn - Harmful

**R-phrases(s)**

R22 - Harmful if swallowed

R36 - Irritating to eyes

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

### 2.2. Label elements

**Signal Word****Danger****Hazard Statements**

H301 - Toxic if swallowed

H319 - Causes serious eye irritation

**Precautionary Statements**

P301 + P312 - IF SWALLOWED: 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

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

**2.3. Other hazards**

No information available.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008	DSD Classification - 67/548/EEC
2,4-Methano-2H-indeno [1,2-b:5,6-b'] bisoxirene, octahydro-	81-21-0	EEC No. 201-334-1	>95	Acute Tox. 3 (H301) Eye Irrit. 2 (H319)	Xn; R22 Xi; R36

*For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16***SECTION 4: FIRST AID MEASURES****4.1. Description of first aid measures****General Advice**

If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

**Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

**Ingestion**

Clean mouth with water. Get medical attention. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician.

**Inhalation**

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.

**Protection of First-aiders** Use personal protective equipment.

**4.2. Most important symptoms and effects, both acute and delayed**

No information available

**4.3. Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

**SECTION 5: FIREFIGHTING MEASURES**

**5.1. Extinguishing media**

**Suitable Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>). Dry chemical.

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

No information available.

**5.2. Special hazards arising from the substance or mixture**

Thermal decomposition can lead to release of irritating gases and vapors

**Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

**5.3. Advice for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**6.2. Environmental precautions**

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

**6.4. Reference to other sections**

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7: HANDLING AND STORAGE**

**7.1. Precautions for safe handling**

Avoid contact with skin and eyes. Do not breathe dust. Pay attention to flashback.

**7.2. Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a cool, well-ventilated place.

**7.3. Specific end use(s)**

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

#### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

**Derived No Effect Level (DNEL)** No information available.

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral Dermal Inhalation				

**Predicted No Effect Concentration (PNEC)** No information available.

### 8.2. Exposure controls

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

#### Personal protective equipment

**Eye Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure Long sleeved clothing Impervious gloves

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

<b>Respiratory Protection</b>	No protective equipment is needed under normal use conditions.
<b>Large scale/emergency use</b>	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced..
<b>Small scale/Laboratory use</b>	Maintain adequate ventilation
<b>Hygiene Measures</b>	When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.
<b>Environmental exposure controls</b>	No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Beige	
<b>Physical State</b>	Solid.	
<b>Odor</b>	Odorless	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	No information available.	
<b>Melting Point/Range</b>	185 - 189°C / 365 - 372.2°F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	326°C / 618.8°F	
<b>Flash Point</b>	No information available.	<b>Method -</b> No information available
<b>Evaporation Rate</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	No data available.	
<b>Vapor Pressure</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Specific Gravity / Density</b>	No data available	
<b>Bulk Density</b>	No data available	
<b>Water Solubility</b>	1.4 g/L (20°C)	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>	<b>Component</b> 2,4-Methano-2H-indeno [1,2-b:5,6-b'] bisoxirene, octahydro-	<b>log Pow</b> 1.187
<b>Autoignition Temperature</b>	Not applicable	
<b>Decomposition temperature</b>	No data available	
<b>Viscosity</b>	Not applicable	Solid
<b>Explosive Properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	

### 9.2. Other information

<b>Molecular Formula</b>	C10 H12 O2
<b>Molecular Weight</b>	164.2

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available.

**SECTION 10: STABILITY AND REACTIVITY****10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions****Hazardous Polymerization**

No information available.

**Hazardous Reactions**

No information available.

**10.4. Conditions to avoid**

Incompatible products.

**10.5. Incompatible materials**

Strong oxidizing agents.

**10.6. Hazardous decomposition products**Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).**SECTION 11: TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects****Product Information****(a) acute toxicity;****Oral**

Category 4

**Dermal**

Based on available data, the classification criteria are not met

**Inhalation**

Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,4-Methano-2H-indeno [1,2-b:5,6-b'] bisoxirene, octahydro-	210 mg/kg ( Rat )	8 g/kg ( Rabbit )	

**(b) skin corrosion/irritation;**

No data available

**(c) serious eye damage/irritation;**

No data available

**(d) respiratory or skin sensitization;****Respiratory**

No data available

**Skin**

No data available

**(e) germ cell mutagenicity;**

No data available

**(f) carcinogenicity;**

No data available

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;**

No data available

**(h) STOT-single exposure;**

No data available

**(i) STOT-repeated exposure;**

No data available

**Target Organs**

No information available

(j) aspiration hazard; Not applicable  
Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

**Symptoms / effects, both acute and delayed** No information available.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects** Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

**12.2. Persistence and degradability** No information available  
**Persistence** Persistence is unlikely.

**12.3. Bioaccumulative potential** Bioaccumulation is unlikely

Component	log Pow	Biocconcentration factor (BCF)
2,4-Methano-2H-indeno [1,2-b:5,6-b'] bisoxirene, octahydro-	1.187	No data available

**12.4. Mobility in soil** No information available.

**12.5. Results of PBT and vPvB assessment** No data available for assessment

### 12.6. Other adverse effects

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors  
**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste from Residues / Unused Products** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point..

**European Waste Catalogue (EWC)** According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

**14.1. UN number** UN2811  
**14.2. UN proper shipping name** Toxic solid, organic, n.o.s  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** III

### ADR

**14.1. UN number** UN2811  
**14.2. UN proper shipping name** Toxic solid, organic, n.o.s  
**14.3. Transport hazard class(es)** 6.1

**14.4. Packing group** III**IATA****14.1. UN number** UN2811**14.2. UN proper shipping name** Toxic solid, organic, n.o.s**14.3. Transport hazard class(es)** 6.1**14.4. Packing group** III**14.5. Environmental hazards** No hazards identified**14.6. Special precautions for user** No special precautions required**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable, packaged goods**SECTION 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****International Inventories** X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
2,4-Methano-2H-indeno [1,2-b:5,6-b'] bisoxirene, octahydro-	201-334-1	-		X	-	X	-	X	-	X	-

**National Regulations**

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

Take note of Dir 94/33/EC on the protection of young people at work

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

**15.2. Chemical safety assessment**

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

**SECTION 16: OTHER INFORMATION****Full text of R-phrases referred to under sections 2 and 3**

R36 - Irritating to eyes

R22 - Harmful if swallowed

**Full text of H-Statements referred to under sections 2 and 3**

H301 - Toxic if swallowed

H319 - Causes serious eye irritation

**Legend****CAS** - Chemical Abstracts Service**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals



**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - Volatile Organic Compounds

#### Key literature references and sources for data

Suppliers safety data sheet,

Chemadvisor - LOLI,

Merck index,

RTECS

#### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Revision Date**

08-Apr-2014

**Revision Summary**

Not applicable

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

#### Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of Safety Data Sheet**