CIS-EPOXYSUCCINIC ACID

SAFETY DATA SHEET (according to Regulation (EC) No. 1907/2006/EC)

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: cis-Epoxysuccinic acid EC number: 240-604-3

CAS-No.: 16533-72-5 Product Code: GEO-01295

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet:

Georganics Ltd., Koreničova 1, 811 03 Bratislava, Slovak Republic

Phone Number: +421 33 6403132, E-mail address: georganics@georganics.sk

1.4 Emergency telephone number: National Toxicological Information Centre, Tel: +421-2-54774166, Mob: +421 911 166 066

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CPL)

Skin Corrosion/Irritation Category 2 (H315)

Serious Eye Damage/Eye Irritation Category 2 (H319)

Specific target organ toxicity - (single exposure) Category 3 (H335)

2.1.2 Additional information: For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Hazard pictogram:

Signal word:

Warning

Hazard statements:

H315-Causes skin irritation

H319-Causes serious eye irritation

H335-May cause respiratory irritation

Precautionary statements:

P261-Avoid breathing dust/fume/gas/mist/vapours/spray:

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

P302+352-IF ON SKIN: Wash with soap and water

P305+351+338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Supplemental Hazard information (EU): Not applicable

2.3 Other hazards No data available

SECTION 3 - COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

Identification numbers	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008	SCL / M-factor / ATE
CAS: 16533-72-5 EC: 240-604-3	cis-Epoxysuccinic acid	<= 100%	H315;H319;H335	-

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

General notes Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5 - FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable extinguishing media: -

5.2 Special hazards arising from the substance or mixture - During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion.

5.3 Advice for firefighters - Wear self-contained breathing apparatus and protective clothing to prevent contact with skin/eyes.

5.4 Further information - Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures - Wear protective equipment. Ensure adequate ventilation. Keep unprotected persons away. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Wash spill site after material pickup is complete.

6.2 Environmental precautions - Prevent further leakage or spillage if safe to do so. Do not let this chemical enter the environment.

6.3 Methods and materials for containment and cleaning up – Spilled product should be covered with suitable (non-flammable) absorbing material. Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation

6.4 Reference to other sections - See Section 7 for information on safe handling. See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling – For precautions see section 2.2.

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities - Store in a dry, cool and well-ventilated place. Keep container closed when not in use. See Section 10 for stability and reactivity information.

7.3 Specific end use(s) - No further relevant information available

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

8.2 Exposure controls

Engineering Controls:	Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels. Safety shower and eye bath.
Personal Protective Equipment	
Eye and face protection:	Wear chemical safety glasses.
Skin protection:	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory protection:	Wear appropriate protective mask with a filter against organic vapors.
Thermal hazard:	No data available
Environmental exposure controls:	Do not let product enter drains.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Powder	**Decomposition temperature:**	No data available
Color:	White	**pH:**	No data available
Odor:	No data available	**Kinematic viscosity:**	No data available
Freezing/Melting Point:	150 °C	**Solubility:**	No data available
Boiling Point:	No data available	**Partition coefficient n-octanol/water (log value):**	No data available
Flammability:	No data available	**Vapor pressure:**	No data available
Lower and upper explosion limit:	No data available	**Density and/or relative density:**	No data available
Flash Point:	No data available	**Relative vapor density:**	No data available
Auto-ignition temperature:	No data available	**Particle characteristics:**	No data available

9.2 Other safety information - No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity - No data available

10.2 Chemical stability - The product is chemically stable under standard ambient conditions (room temperature)

10.3 Possibility of hazardous reactions - No data available

10.4 Conditions to avoid - Incompatible products. Excess heat. Avoid dust formation.

10.5 Incompatible materials - Strong oxidizing agents, Bases, Amines.

10.6 Hazardous decomposition products - Carbon monoxide (CO), Carbon dioxide (CO2).

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity - No data available
Skin irritation or corrosion - Causes skin irritation
Serious eye damage / irritation - Causes serious eye irritation.
Respiratory or skin sensitization - No data available
Germ cell mutagenicity - No data available
Carcinogenicity - No data available
Reproductive toxicity - No data available
Specific target organ system toxicity (STOT) - repeated exposure: No data available
Specific target organ system toxicity (STOT) - single exposure: No data available
11.2 Additional Information - To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties cannot be excluded. This substance should be handled with particular care.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity - No data available
12.2 Persistence and degradability - No data available
12.3 Bioaccumulative potential - No data available
12.4 Mobility in soil - No data available
12.5 Results of PBT and vPvB assessment - No data available
12.6 Endocrine disrupting properties - No data available
12.7 Other adverse effects - No data available
12.8 Additional information - No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal. The product must not be disposed of with municipal waste.
Contaminated packaging
Dispose of as unused product.

SECTION 14 - TRANSPORT INFORMATION

14.1 UN number:	ADR/RID: -	IMDG: -	IATA: -
14.2 UN proper shipping name:			
ADR/RID: Not dangerous good			
IMDG: Not dangerous good			
IATA: Not dangerous good			
14.3 Transport hazard class(es)			
	ADR/RID: -	IMDG: -	IATA: -
14.4 Packing group			
	ADR/RID: -	IMDG: -	IATA: -
14.5 Environmental hazards			
	ADR/RID: no	IMDG Marine pollutant: no	IATA: no

14.6 Special precautions for user: No data available
14.7 Maritime transport in bulk according to IMO instruments - No data available

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 as amended. Environmental Protection Act 1990 as amended. Clean Air Act 1993 as amended. Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended.
15.2 Chemical safety assessment - No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16 - OTHER INFORMATION

Key to abbreviations and acronyms used in the safety data sheet

ATE - Acute Toxicity Estimate
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation

C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency

EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances

ELINCS - European List of notified Chemical Substances

EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre

Kow - octanol-water partition coefficient
LC50 - Lethal Concentration to 50 % of a test population

LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (http://ec.europa.eu/environment/waste/framework/list.htm)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance

PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UFI - Unique Formula Identifier
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

The information contained in the SDS are compiled according to the present knowledge of the manufacturer. It does not represent any guarantee of the properties of the product. SDS shall be used only as a guide. Georganics Ltd. is not liable for damages incurred in the handling or contact with chemicals.