



Safety Data Sheet

Cat. # API-03

Cycloheximide [100mM]

Size: 1ml





cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Revision date: 5/11/2017 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
Substance name	: cycloheximide
EC Index-No.	: 613-140-00-8
EC-No.	: 200-636-0
CAS-No.	: 66-81-9
Product code	: 292C
Type of product	: Pure substance
Formula	: C15H23NO4
Synonyms	: [1S-[1-alpha(S*),3alpha,5beta]]-4-[2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]-2,6-piperidinedione / 2,6-piperidinedione, 4-[2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]-, [1S-[1alpha(S*), 3alpha,5beta]]- / 3-(2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl)glutarimide / 3-(2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl)pentanedioic acid imide / 3-(2R)-2-[(1S,3S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethylglutarimide / 3-[2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]glutarimide / 4-(2R)-2-[(1S,3S,5S)-(3,5-dimethyl-2-oxocyclohexyl)]-2-hydroxyethylpiperidine-2,6-dione / 4-[2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl]-2,6-piperidinedione / 4-[(2R)-2-[(1S,3S,5S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethyl]piperidine-2,6-dione / acti-aid / actidion / actidione / acti-dione / acti-dione BR / actidione PM / acti-dione PM / actidione TGF / acti-dione TGF / actidone / actispray / aktidion / beta-(2-(3,5-dimethyl-2-oxocyclohexyl)-2-hydroxyethyl)glutarimide / cycloheximide / hizarocin / kaken / naramycin / naramycin A / neocycloheximide / NSC-185 / U-4527
Product group	: Raw material
BIG No	: 12688

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Growth regulator

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 2	H300
Germ cell mutagenicity, Category 2	H341
Reproductive toxicity, Category 1B	H360D
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Suspected of causing genetic defects. May damage fertility or the unborn child. Fatal if swallowed. Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



CLP Signal word

: Danger

Hazard statements (CLP)

: H300 - Fatal if swallowed.
H341 - Suspected of causing genetic defects.
H360D - May damage the unborn child.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
cycloheximide	(CAS-No.) 66-81-9 (EC-No.) 200-636-0 (EC Index-No.) 613-140-00-8	100	Acute Tox. 2 (Oral), H300 Muta. 2, H341 Repr. 1B, H360D Aquatic Chronic 2, H411

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist if irritation persists. Do not apply neutralizing agents.
First-aid measures after ingestion	: Rinse mouth with water. Give nothing to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Doctor: gastric lavage.

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

Symptoms/effects after inhalation	: AFTER INHALATION OF DUST/MIST: Symptoms similar to those listed under ingestion.
Symptoms/effects after skin contact	: No effects known.
Symptoms/effects after eye contact	: No effects known.
Symptoms/effects after ingestion	: Nausea. Vomiting. Headache. Excited/restless. Diarrhoea. Tremor. Cramps/uncontrolled muscular contractions. Disturbances of consciousness.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Enlargement/affection of the liver. Affection of the renal tissue.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.
Unsuitable extinguishing media	: Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Not easily combustible. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD: Heating increases the fire hazard.
Explosion hazard	: DIRECT EXPLOSION HAZARD: Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.
Emergency procedures	: Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes.
Measures in case of dust release	: In case of dust production: keep upwind. In case of dust production: consider evacuation. Dust production: have neighbourhood close doors and windows. In case of dust production: stop engines and no smoking. In case of dust production: no naked flames or sparks. Dust: spark-/explosionproof appliances/lighting equipment.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Take account of toxic/corrosive precipitation water. Powdered form: no compressed air for pumping over spills.
Methods for cleaning up	: Prevent dust cloud formation. Scoop solid spill into closing containers. Powdered: do not use compressed air for pumping over spills. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Pulverization rapidly increases toxic concentration.
Precautions for safe handling	: Avoid raising dust. Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Powdered form: no compressed air for pumping over. Keep container tightly closed.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store locked up. Store in a well-ventilated place. Keep cool.
Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. (strong) acids.
Storage area	: Store in a dry area. Keep locked up. Unauthorized persons are not admitted. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: glass.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:
Gloves
Eye protection:
Face shield. In case of dust production: protective goggles
Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing
Respiratory protection:
Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Powder. Little spheres.
Molecular mass	: 281.35 g/mol

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Colour	: Colourless to white-grey.
Odour	: No data available
Odour threshold	: No data available
pH	: 4 - 5 (2 %)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 119 °C
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: 9.7
Relative density	: Not applicable
Solubility	: Moderately soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in cyclohexanone. Soluble in methanol. Soluble in chloroform. Water: 2.1 g/100ml Acetone: 33 g/100ml
Log Pow	: 0.55 - 0.85
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

Other properties : Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with (some) bases.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Fatal if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: 4 - 5 (2 %)
Serious eye damage/irritation	: Not classified pH: 4 - 5 (2 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: Not classified
Reproductive toxicity	: May damage the unborn child.
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Potential adverse human health effects and symptoms : Produces effects on the nervous system. Fatal if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Dangerous for the environment.
Ecology - air : Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014).
Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Toxic to aquatic organisms. Toxic to fishes. Severe water pollutant (surface water). pH shift.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

cycloheximide (66-81-9)

LC50 fish 1 1.6 mg/l (48 h, Oryzias latipes)

12.2. Persistence and degradability

cycloheximide (66-81-9)

Persistence and degradability Not readily biodegradable in water.

12.3. Bioaccumulative potential

cycloheximide (66-81-9)

BCF fish 1 0.3 - 2.8 (Cyprinus carpio, Test duration: 6 weeks)

Log Pow 0.55 - 0.85

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

cycloheximide (66-81-9)

Log Koc 1 (log Koc, SRC PCKOCWIN v2.0, QSAR)

Ecology - soil Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.
Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.
Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances
16 03 05* - organic wastes containing dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : UN 2588
UN-No. (IMDG) : UN 2588
UN-No. (IATA) : UN 2588
UN-No. (ADN) : UN 2588
UN-No. (RID) : UN 2588

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Pesticide, solid, toxic, n.o.s.
Proper Shipping Name (IMDG) : pesticide, solid, toxic, n.o.s.
Proper Shipping Name (IATA) : Pesticide, solid, toxic, n.o.s.

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Proper Shipping Name (ADN)	: Pesticide, solid, toxic, n.o.s.
Proper Shipping Name (RID)	: Pesticide, solid, toxic, n.o.s.
Transport document description (ADR)	: UN 2588 Pesticide, solid, toxic, n.o.s., 6.1, I, (C/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG)	: UN 2588 pesticide, solid, toxic, n.o.s., 6.1, I, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA)	: UN 2588 Pesticide, solid, toxic, n.o.s., 6.1, I, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN)	: UN 2588 Pesticide, solid, toxic, n.o.s., 6.1, I, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID)	: UN 2588 Pesticide, solid, toxic, n.o.s., 6.1, I, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 6.1
Danger labels (ADR)	: 6.1



IMDG

Transport hazard class(es) (IMDG)	: 6.1
Danger labels (IMDG)	: 6.1



IATA

Transport hazard class(es) (IATA)	: 6.1
Hazard labels (IATA)	: 6.1



ADN

Transport hazard class(es) (ADN)	: 6.1
Danger labels (ADN)	: 6.1



RID

Transport hazard class(es) (RID)	: 6.1
Danger labels (RID)	: 6.1



14.4. Packing group

Packing group (ADR)	: I
Packing group (IMDG)	: I
Packing group (IATA)	: I
Packing group (ADN)	: I
Packing group (RID)	: I

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

14.5. Environmental hazards

Dangerous for the environment	: Yes
Marine pollutant	: Yes
Other information	: No supplementary information available

14.6. Special precautions for user

Overland transport

Transport regulations (ADR)	: Subject
Classification code (ADR)	: T7
Hazard identification number (Kemler No.)	: 66
Orange plates	:



Tunnel restriction code (ADR)	: C/E
EAC code	: 2X

Transport by sea

Transport regulations (IMDG)	: Subject
IBC packing instructions (IMDG)	: IBC99
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A

Air transport

Transport regulations (IATA)	: Subject to the provisions
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Inland waterway transport

Classification code (ADN)	: T7
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Rail transport

Transport regulations (RID)	: Subject
Classification code (RID)	: T7

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

cycloheximide is not on the REACH Candidate List

cycloheximide is not on the REACH Annex XIV List

cycloheximide is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

cycloheximide is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

15.1.2. National regulations

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Not subject to reporting requirements of the United States SARA Section 313

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
H300	Fatal if swallowed.
H341	Suspected of causing genetic defects.

cycloheximide

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

H360D	May damage the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.