

Safety Data Sheet acc. to OSHA HCS

Printing date 06/05/2023

Revision date 06/05/2023

1 Identification

- **Product identifier**
- **Trade name: Cell-Based Assay Cycloheximide**
- **Article number:** 601105, 010665
- **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal opening times: +1 (734) 971-3335
US/CANADA: 800-424-9300
Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity - Oral 3 H301 Toxic if swallowed.



GHS08 Health hazard

Germ Cell Mutagenicity 2 H341 Suspected of causing genetic defects.

Toxic to Reproduction 1B H360 May damage fertility or the unborn child.

Flammable Liquids 4 H227 Combustible liquid.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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- **Hazard pictograms**



GHS06 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Cycloheximide

- **Hazard statements**

H227 Combustible liquid.

H301 Toxic if swallowed.

H341 Suspected of causing genetic defects.

H360 May damage fertility or the unborn child.

H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from flames and hot surfaces. – No smoking.

P264 Wash 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/doctor.

P321 Specific treatment (see on this label).

P330 Rinse mouth.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 2

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = *2

Fire = 2

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 67-68-5 RTECS: PV6210000	Dimethyl sulfoxide	95.0%
CAS: 66-81-9 RTECS: MA4375000	Cycloheximide	5.0%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- **Protective Action Criteria for Chemicals**

- **PAC-1:**

67-68-5	Dimethyl sulfoxide	150 ppm
66-81-9	Cycloheximide	0.18 mg/m ³

- **PAC-2:**

67-68-5	Dimethyl sulfoxide	290 ppm
66-81-9	Cycloheximide	2 mg/m ³

- **PAC-3:**

67-68-5	Dimethyl sulfoxide	1,800 ppm
66-81-9	Cycloheximide	12 mg/m ³

7 Handling and storage

- **Handling:**

- **Precautions for safe handling** Open and handle receptacle with care.

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:** Store in accordance with information listed on the product insert.

- **Requirements to be met by storerooms and receptacles:** No special requirements.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

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

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

67-68-5 Dimethyl sulfoxide	
WEEL	Long-term value: 250 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

- **Breathing equipment:** Not required.

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- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Goggles recommended during refilling.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

- **Form:**

Liquid

- **Color:**

According to product specification

- **Odor:**

Characteristic

- **Structural Formula**

C₂H₆O₅

- **Molecular Weight**

78.13 g/mol

- **Odor threshold:**

Not determined.

- **Formulation**

A solution in DMSO

- **pH-value:**

Not determined.

- **Change in condition**

- **Melting point/Melting range:**

18.5 °C (65.3 °F)

- **Boiling point/Boiling range:**

189 °C (372.2 °F)

- **Flash point:**

87 °C (188.6 °F)

- **Flammability (solid, gaseous):**

Not applicable.

- **Auto igniting:**

270 °C (518 °F)

- **Decomposition temperature:**

Not determined.

- **Ignition temperature:**

Product is not selfigniting.

- **Danger of explosion:**

Not determined.

- **Explosion limits:**

- **Lower:**

2.6 Vol %

- **Upper:**

42 Vol %

- **Vapor pressure at 20 °C (68 °F):**

0.56 hPa (0.4 mm Hg)

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|------------------------------------|--|
| · Density at 20 °C (68 °F): | 1.1 g/cm ³ (9.1795 lbs/gal) |
| · Relative density | Not determined. |
| · Vapor density | Not determined. |
| · Evaporation rate | Not determined. |

- | | |
|---|----------|
| · Solubility in / Miscibility with Water at 25 °C (77 °F): | 1000 g/l |
|---|----------|

- | | |
|---|-----------------|
| · Partition coefficient (n-octanol/water): | Not determined. |
|---|-----------------|

- | | |
|---------------------|-----------------|
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |

- | | |
|---------------------------|---------------------------|
| · Solvent content: | |
| Organic solvents: | 100.0 % |
| VOC content: | 100.00 % |
| | 1,000.0 g/l / 8.35 lb/gal |

- | | |
|------------------------|-------|
| Solids content: | 5.0 % |
|------------------------|-------|

- | | |
|----------------------------|--|
| · Other information | No further relevant information available. |
|----------------------------|--|

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- | | |
|---|--|
| · LD/LC50 values that are relevant for classification: | |
|---|--|

ATE (Acute Toxicity Estimate)

Oral	LD50	100 mg/kg
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67-68-5 Dimethyl sulfoxide

Oral	LD50	28,300 mg/kg (rat) OECD Test Guideline 401
Dermal	LD50	40,000 mg/kg (rat)

66-81-9 Cycloheximide

Oral	LD50	133 mg/kg (mouse)
	Intraperitoneal LD50	3,700 µg/kg (rat)
	Subcutaneous LD50	2,500 µg/kg (rat)
	Intraperitoneal LD50	100 mg/kg (mouse)

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	Subcutaneous LD50	160 mg/kg (mouse)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

- **Carcinogenic categories**

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

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Harmful to aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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· Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	UN2810
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	Toxic, liquids, organic, n.o.s. (Cycloheximide) TOXIC LIQUID, ORGANIC, N.O.S. (Cycloheximide) Toxic liquid, organic, n.o.s. (Cycloheximide)
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: center;">  <p>TOXIC 6</p> </div>
<ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances 6.1
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  <p>6</p> </div>
<ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances 6.1
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category · Stowage Code 	Warning: Toxic substances 60 F-A,S-A A SW2 Clear of living quarters.
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations 	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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|---------------------------------|---|
| · IATA | |
| · Remarks: | When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity. |
| · UN "Model Regulation": | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (CYCLOHEXIMIDE), 6.1, III |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Sara**

- **Section 355 (extremely hazardous substances):**

66-81-9 Cycloheximide

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

67-68-5 Dimethyl sulfoxide

ACTIVE

- **Hazardous Air Pollutants**

None of the ingredients is listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

66-81-9 Cycloheximide

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes

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contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- **Department issuing SDS:** Environment protection department.

- **Contact:** -

- **Date of preparation / last revision** 06/05/2023

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 4: Flammable liquids – Category 4

Acute Toxicity - Oral 3: Acute toxicity – Category 3

Germ Cell Mutagenicity 2: Germ cell mutagenicity – Category 2

Toxic to Reproduction 1B: Reproductive toxicity – Category 1B

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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