



## Safety Data Sheet acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

### 1 Identification

- **Product identifier**
- **Trade name:** Insulin Solution (1,000X)
- **Article number:** 10008979
- **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**



GHS08 Health hazard

Sensitization - Respiratory 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Insulin

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- **Hazard statements**

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P284 [In case of inadequate ventilation] wear respiratory protection.

P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.

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

- **Classification system:**

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



Health = 0

Fire = 0

Reactivity = 0

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



Health = 0

Fire = 0

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

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

- **Dangerous components:**

CAS: 11070-73-8	Insulin	0.1%
RTECS: NM8909400		

- **Other ingredients**

CAS: 7732-18-5	Water	99.9%
RTECS: ZC0110000		

## 4 First-aid measures

- **Description of first aid measures**

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.

- **After skin contact:** Generally the product does not irritate the skin.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** If symptoms persist consult doctor.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
Use fire fighting measures that suit the environment.  
A solid water stream may be inefficient.
- **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** Not required.
- **Environmental precautions:** Dilute with plenty of 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.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

None of the ingredients is listed.

- **PAC-2:**

None of the ingredients is listed.

- **PAC-3:**

None of the ingredients is listed.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- **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:** None.

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- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**  
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
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**

Melting point/Melting range:	0 °C (32 °F)
Boiling point/Boiling range:	100 °C (212 °F)

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· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Ignition temperature:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17.3 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1 g/cm <sup>3</sup> (8.345 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic at 20 °C (68 °F):	0.952 mPas
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Water:	99.9 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.1 %
· <b>Other information</b>	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.

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## 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**11070-73-8 Insulin**

Subcutaneous TDLO 2 units/kg (mouse)

Intraperitoneal TDLO 168 units/kg/28D intermittent (rat)

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** Sensitization possible through inhalation.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

- **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.

- **Additional ecological information:**

- **General notes:** Not hazardous for water.

- **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

- UN-Number
- DOT, IMDG, IATA not regulated
- UN proper shipping name
- DOT, IMDG, IATA not regulated
- Transport hazard class(es)
- DOT, ADN, IMDG, IATA
- Class not regulated
- Packing group
- DOT, IMDG, IATA not regulated
- Environmental hazards: Not applicable.
- Special precautions for user Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
- UN "Model Regulation": not regulated

## 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):

None of the ingredients is listed.

### · Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

### · TSCA (Toxic Substances Control Act):

7732-18-5 | Water

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:

None of the ingredients is listed.

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- **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 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** 06/22/2023

- **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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Sensitization - Respiratory 1: Respiratory sensitisation – Category 1

- **\* Data compared to the previous version altered.**

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### 1 Identification

- **Product identifier**
- **Trade name:** Adipolysis Assay IBMX Solution (1,000X)
- **Article number:** 10009948
- **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**  
Flammable Liquids 4 H227 Combustible liquid.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** None
- **Signal word** Warning
- **Hazard statements**  
H227 Combustible liquid.
- **Precautionary statements**  
P210 Keep away from flames and hot surfaces. – No smoking.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378 In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 2  
Reactivity = 0

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## · HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = 0
FIRE	2	Fire = 2
REACTIVITY	0	Reactivity = 0

- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

## 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	94.444%
CAS: 28822-58-4 RTECS: ZD8500000	IBMX	5.556%

## 4 First-aid measures

- Description of first aid measures
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- 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:  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture  
Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.  
Container explosion may occur under fire conditions.  
Emits toxic fumes under fire conditions.  
Sensitive to static discharge.  
Vapors can travel to a source of ignition and flash back.
- Advice for firefighters
- Protective equipment: No special measures required.

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
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.  
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
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- **PAC-2:**

67-68-5	Dimethyl sulfoxide	290 ppm
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- **PAC-3:**

67-68-5	Dimethyl sulfoxide	1,800 ppm
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## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
No special precautions are necessary if used correctly.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.  
Keep away from sources of ignition.  
Take precautionary measures against static discharge.re.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**  
Keep away from heat, sparks and flame.  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- **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.

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Trade name: Adipolysis Assay IBMX Solution (1,000X)

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- 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.

<b>67-68-5 Dimethyl sulfoxide</b>
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WEEL	Long-term value: 250 ppm
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- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls

- Personal protective equipment:

- General protective and hygienic measures: Wash hands before breaks and at the end of work.

- Breathing equipment: Not required.

- 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

- Odor threshold:

Not determined.

- Formulation

This vial contains 100 µl of 1,000X IBMX stock solution.

- pH-value:

Not determined.

- Change in condition

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

189 °C (372.2 °F)

- Flash point:

87 °C (188.6 °F)

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· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto igniting:</b>	270 °C (518 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Ignition temperature:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Not determined.
· <b>Explosion limits:</b>	
Lower:	2.6 Vol %
Upper:	42 Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	0.6 hPa (0.5 mm Hg)
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	94.4 %
VOC content:	94.44 %
	944.4 g/l / 7.88 lb/gal
Solids content:	5.6 %
· <b>Other information</b>	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	8,999 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)
<b>28822-58-4 IBMX</b>		
	Intraperitoneal LD50	44 mg/kg (mouse)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **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.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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

· UN-Number	
· DOT	NA1993
· IMDG, IATA	not regulated
· UN proper shipping name	
· DOT	COMBUSTIBLE LIQUID, N.O.S
· IMDG, IATA	not regulated
· Transport hazard class(es)	
· DOT	
	
· Class	3 Combustible liquids
· Label	3
· ADN/R Class:	not regulated
· Packing group	
· DOT	III
· IMDG, IATA	not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· 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":	not regulated

## 15 Regulatory information

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

(Contd. on page 8)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay IBMX Solution (1,000X)

(Contd. from page 7)

· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **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:**

None of the ingredients is listed.

· **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 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** 06/22/2023· **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)

(Contd. on page 9)

US



# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

**Trade name: Adipolysis Assay IBMX Solution (1,000X)**

(Contd. from page 8)

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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 4: Flammable liquids – Category 4

· **\* Data compared to the previous version altered.**

US



## Safety Data Sheet acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

### 1 Identification

- **Product identifier**
- **Trade name:** Adipolysis Assay Dexamethasone Solution (1,000X)
- **Article number:** 10009950
- **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**  
Flammable Liquids 4 H227 Combustible liquid.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** None
- **Signal word** Warning
- **Hazard statements**  
H227 Combustible liquid.
- **Precautionary statements**  
P210 Keep away from flames and hot surfaces. – No smoking.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378 In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 2  
Reactivity = 0

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 1)

· **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	2	Fire = 2
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 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	99.9607%
----------------------------------	--------------------	----------

· **Other ingredients**

CAS: 50-02-2 RTECS: TU3980000	Dexamethasone	0.0393%
----------------------------------	---------------	---------

## 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **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:**  
CO<sub>2</sub>, 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.

(Contd. on page 3)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 2)

- **Environmental precautions:**

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.  
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
---------	--------------------	---------

- **PAC-2:**

67-68-5	Dimethyl sulfoxide	290 ppm
---------	--------------------	---------

- **PAC-3:**

67-68-5	Dimethyl sulfoxide	1,800 ppm
---------	--------------------	-----------

## 7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

No special precautions are necessary if used correctly.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.  
Keep away from sources of ignition.  
Take precautionary measures against static discharge.re.

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

Keep ignition sources away - Do not smoke.

- **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:**

<b>67-68-5 Dimethyl sulfoxide</b>	
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:** Wash hands before breaks and at the end of work.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 3)

- **Breathing equipment:** Not required.
- **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:**

Odorless

- **Odor threshold:**

Not determined.

- **Formulation**

100 µl of 1,000X dexamethasone stock solution

- **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)

- **Density at 20 °C (68 °F):**

1.1 g/cm<sup>3</sup> (9.1795 lbs/gal)

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 4)

- |                           |                 |
|---------------------------|-----------------|
| · <b>Relative density</b> | Not determined. |
| · <b>Vapor density</b>    | Not determined. |
| · <b>Evaporation rate</b> | Not determined. |

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

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

- |                           |                 |
|---------------------------|-----------------|
| · <b>Viscosity:</b>       |                 |
| Dynamic at 20 °C (68 °F): | 198 mPas        |
| Kinematic:                | Not determined. |

- |                           |                         |
|---------------------------|-------------------------|
| · <b>Solvent content:</b> |                         |
| Organic solvents:         | 100.0 %                 |
| VOC content:              | 99.96 %                 |
|                           | 999.6 g/l / 8.34 lb/gal |

- |                          |       |
|--------------------------|-------|
| · <b>Solids content:</b> | 0.0 % |
|--------------------------|-------|

- |                            |  |
|----------------------------|--|
| · <b>Other information</b> | 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:**

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

### 67-68-5 Dimethyl sulfoxide

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

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

- |   |
|---|
| · <b>IARC (International Agency for Research on Cancer)</b> |
|---|

None of the ingredients is listed.
------------------------------------

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 5)

- **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.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **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.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**

- **DOT**

NA1993

- **IMDG, IATA**

not regulated

- **UN proper shipping name**

- **DOT**

COMBUSTIBLE LIQUID, N.O.S

- **IMDG, IATA**

not regulated

(Contd. on page 7)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 6)

· Transport hazard class(es)

· DOT



· Class

3 Combustible liquids

· Label

3

· ADN/R Class:

not regulated

· Packing group

· DOT

III

· IMDG, IATA

not regulated

· Environmental hazards:

Not applicable.

· Special precautions for user

Not applicable.

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

· Transport/Additional information:

· DOT

· Quantity limitations

On passenger aircraft/rail: 60 L  
On cargo aircraft only: 220 L

· 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":

not regulated

## 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):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

(Contd. on page 8)

US



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Dexamethasone Solution (1,000X)

(Contd. from page 7)

### · 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:

None of the ingredients is listed.

### · 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 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 06/22/2023

#### · 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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 4: Flammable liquids – Category 4



## Safety Data Sheet acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

### 1 Identification

- **Product identifier**
- **Trade name:** Adipolysis Assay Isoproterenol Solution
- **Article number:** 10009951
- **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**  
Flammable Liquids 4 H227 Combustible liquid.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** None
- **Signal word** Warning
- **Hazard statements**  
H227 Combustible liquid.
- **Precautionary statements**  
P210 Keep away from flames and hot surfaces. – No smoking.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378 In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 2  
Reactivity = 0

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 1)

## · HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = 0
FIRE	2	Fire = 2
REACTIVITY	0	Reactivity = 0

- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

## 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	99.752%
----------------------------------	--------------------	---------

### · Other ingredients

CAS: 51-30-9 RTECS: DO1925000	Isoproterenol (hydrochloride)	0.248%
----------------------------------	-------------------------------	--------

## 4 First-aid measures

- Description of first aid measures
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- 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:  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture  
Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.  
Container explosion may occur under fire conditions.  
Emits toxic fumes under fire conditions.  
Sensitive to static discharge.  
Vapors can travel to a source of ignition and flash back.
- Advice for firefighters
- Protective equipment: No special measures required.

US

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 2)

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
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.  
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
---------	--------------------	---------

- **PAC-2:**

67-68-5	Dimethyl sulfoxide	290 ppm
---------	--------------------	---------

- **PAC-3:**

67-68-5	Dimethyl sulfoxide	1,800 ppm
---------	--------------------	-----------

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
No special precautions are necessary if used correctly.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.  
Keep away from sources of ignition.  
Take precautionary measures against static discharge.re.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**  
Keep away from heat, sparks and flame.  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- **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.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 3)

- Control parameters

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

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: Wash hands before breaks and at the end of work.

- Breathing equipment: Not required.

- 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

- Odor threshold:

Not determined.

- 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.

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-US-

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 4)

· **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)

· **Density at 20 °C (68 °F):** 1.1 g/cm<sup>3</sup> (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 at 20 °C (68 °F):** 198 mPas  
**Kinematic:** Not determined.

· **Solvent content:**  
**Organic solvents:** 99.8 %  
**VOC content:** 99.75 %  
 997.5 g/l / 8.32 lb/gal

**Solids content:** 0.2 %

· **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:**

**67-68-5 Dimethyl sulfoxide**

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

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# Safety Data Sheet

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Printing date 06/22/2023

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Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 5)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>
---

None of the ingredients is listed.
------------------------------------

· <b>NTP (National Toxicology Program)</b>
--

None of the ingredients is listed.
------------------------------------

· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>
--

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.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |                     |               |
|---------------------|---------------|
| · <b>UN-Number</b>  |               |
| · <b>DOT</b>        | NA1993        |
| · <b>IMDG, IATA</b> | not regulated |

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Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 6)

<ul style="list-style-type: none"> <li>· UN proper shipping name</li> <li>· DOT</li> <li>· IMDG, IATA</li> </ul>	COMBUSTIBLE LIQUID, N.O.S not regulated
<ul style="list-style-type: none"> <li>· Transport hazard class(es)</li> <li>· DOT</li> </ul>	
	
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> <li>· ADN/R Class:</li> </ul>	3 Combustible liquids 3 not regulated
<ul style="list-style-type: none"> <li>· Packing group</li> <li>· DOT</li> <li>· IMDG, IATA</li> </ul>	III not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
<ul style="list-style-type: none"> <li>· Transport/Additional information:</li> <li>· DOT</li> <li>· Quantity limitations</li> </ul>	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
<ul style="list-style-type: none"> <li>· IATA</li> <li>· Remarks:</li> </ul>	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":	not regulated

## 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):

None of the ingredients is listed.

### · Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

### · TSCA (Toxic Substances Control Act):

67-68-5 Dimethyl sulfoxide

ACTIVE

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Adipolysis Assay Isoproterenol Solution

(Contd. from page 7)

- **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:**

None of the ingredients is listed.

- **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 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** 06/22/2023

- **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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

**Trade name: Adipolysis Assay Isoproterenol Solution**

Flammable Liquids 4: Flammable liquids – Category 4

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· **\* Data compared to the previous version altered.**

— US —



## Safety Data Sheet acc. to OSHA HCS

Printing date 06/22/2023

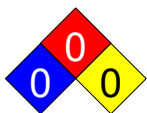
Revision date 06/22/2023

### 1 Identification

- **Product identifier**
- **Trade name:** Glycerol Standard Solution
- **Article number:** 10009952
- **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**  
The product is not classified, according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** None
- **Hazard pictograms** None
- **Signal word** None
- **Hazard statements** None
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 0  
Reactivity = 0

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



Health = 0  
Fire = 0  
Reactivity = 0

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US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Glycerol Standard Solution

(Contd. from page 1)

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** None

- **Other ingredients**

CAS: 7732-18-5 RTECS: ZC0110000	Water	99.99%
CAS: 56-81-5 RTECS: MA8050000	Glycerol	0.01%

## 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **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:**  
Use fire fighting measures that suit the environment.  
A solid water stream may be inefficient.
- **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** Not required.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

(Contd. on page 3)

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acc. to OSHA HCS

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Revision date 06/22/2023

Trade name: Glycerol Standard Solution

(Contd. from page 2)

See Section 13 for disposal information.

## · Protective Action Criteria for Chemicals

### · PAC-1:

56-81-5	Glycerol	45 mg/m <sup>3</sup>
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### · PAC-2:

56-81-5	Glycerol	180 mg/m <sup>3</sup>
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### · PAC-3:

56-81-5	Glycerol	1,100 mg/m <sup>3</sup>
---------	----------	-------------------------

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** None.
- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
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.

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acc. to OSHA HCS

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Trade name: Glycerol Standard Solution

(Contd. from page 3)

- **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:

Odorless

#### · Odor threshold:

Not determined.

#### · Formulation

250 µl of 0.125 mg/ml glycerol standard solution in deionized distilled water

#### · pH-value:

Not determined.

#### · Change in condition

Melting point/Melting range:

0 °C (32 °F)

Boiling point/Boiling range:

100 °C (212 °F)

#### · Flash point:

Not applicable.

#### · Flammability (solid, gaseous):

Not applicable.

#### · Decomposition temperature:

Not determined.

#### · Ignition temperature:

Product is not selfigniting.

#### · Danger of explosion:

Product does not present an explosion hazard.

#### · Explosion limits:

Lower:

Not determined.

Upper:

Not determined.

#### · Vapor pressure at 20 °C (68 °F):

23 hPa (17.3 mm Hg)

#### · Density at 20 °C (68 °F):

1.00003 g/cm<sup>3</sup> (8.34525 lbs/gal)

#### · Relative density

Not determined.

#### · Vapor density

Not determined.

#### · Evaporation rate

Not determined.

#### · Solubility in / Miscibility with

Water:

Fully miscible.

#### · Partition coefficient (n-octanol/water):

Not determined.

#### · Viscosity:

Dynamic at 20 °C (68 °F):

0.952 mPas

Kinematic:

Not determined.

#### · Solvent content:

Organic solvents:

0.0 %

Water:

100.0 %

VOC content:

0.00 %

0.0 g/l / 0.00 lb/gal

Solids content:

0.0 %

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Glycerol Standard Solution

(Contd. from page 4)

## · 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:**
- **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 is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **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.
- **Additional ecological information:**
- **General notes:** Not hazardous for water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Glycerol Standard Solution

· **Other adverse effects** No further relevant information available.

(Contd. from page 5)

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, ADN, IMDG, IATA</b>  |                 |
| · <b>Class</b>   | not regulated   |
| · <b>Packing group</b>   |                 |
| · <b>DOT, IMDG, IATA</b>   | not regulated   |
| · <b>Environmental hazards:</b>  | Not applicable. |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | not regulated   |

## 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):**

None of the ingredients is listed.

### · **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

### · **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

### · **Hazardous Air Pollutants**

None of the ingredients is listed.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Glycerol Standard Solution

(Contd. from page 6)

- **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:**

- None of the ingredients is listed.

- **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 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** 06/22/2023

- **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)

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



## Safety Data Sheet acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

### 1 Identification

- **Product identifier**
- **Trade name:** Free Glycerol Assay Reagent
- **Article number:** 10009953
- **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**



GHS02 Flame

Flammable Solids 1                      H228 Flammable solid.



GHS06 Skull and crossbones

Acute Toxicity - Oral 1                      H300 Fatal if swallowed.  
Acute Toxicity - Dermal 1                      H310 Fatal in contact with skin.  
Acute Toxicity - Inhalation 1                      H330 Fatal if inhaled.



GHS08 Health hazard

Sensitization - Respiratory 1                      H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

(Contd. on page 2)

# Safety Data Sheet

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Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Free Glycerol Assay Reagent

(Contd. from page 1)



GHS05 Corrosion

Eye Damage 1

H318 Causes serious eye damage.

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).

### Hazard pictograms



GHS02



GHS05



GHS06



GHS08

### Signal word Danger

### Hazard-determining components of labeling:

Adenosine 5'-triphosphate (sodium salt)

Triton X-100

Oxidase, glycerol phosphate

Kinase (phosphorylating), glycerol

Myeloperoxidase

### Hazard statements

H228

Flammable solid.

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H318

Causes serious eye damage.

H334

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H412

Harmful to aquatic life with long lasting effects.

### Precautionary statements

P210

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ventilating/lighting/equipment.

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

P262

Do not get in eyes, on skin, or on clothing.

P264

Wash thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P271

Use only outdoors or in a well-ventilated area.

P273

Avoid release to the environment.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P284

[In case of inadequate ventilation] wear respiratory protection.

P301+P310

If swallowed: Immediately call a poison center/doctor.

P330

Rinse mouth.

P302+P352

If on skin: Wash with plenty of water.

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P320

Specific treatment is urgent (see on this label).

P361+P364

Take off immediately all contaminated clothing and wash it before reuse.

P342+P311

If experiencing respiratory symptoms: Call a poison center/doctor.

P370+P378

In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.

P403+P233

Store in a well-ventilated place. Keep container tightly closed.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/22/2023

Revision date 06/22/2023

Trade name: Free Glycerol Assay Reagent

(Contd. from page 2)

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 = 4

Fire = 0

Reactivity = 0

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



Health = \*4

Fire = 0

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

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

- **Dangerous components:**

CAS: 987-65-5 RTECS: AU7417000	Adenosine 5'-triphosphate (sodium salt)	15.25%
CAS: 9002-93-1 RTECS: MD0907700	Triton X-100	7.3687%
CAS: 9046-28-0	Oxidase, glycerol phosphate	4.172%
CAS: 83-07-8 RTECS: CD2480000	4-Aminoantipyrine	1.409%
CAS: 9030-66-4	Kinase (phosphorylating), glycerol	1.228%
CAS: 9003-99-0	Myeloperoxidase	0.3153%

- **Other ingredients**

CAS: 7791-18-6 RTECS: OM2975000	Magnesium chloride, hexahydrate	28.13%
CAS: 82611-88-9	N-Ethyl-N-(3-sulfopropyl)-m-anisidine, sodium salt	22.99%
CAS: 7558-80-7 RTECS: WA1900000	Sodium phosphate, Monobasic	21.543%
CAS: 14459-95-1	Potassium Ferrocyanide Trihydrate	0.047%

## 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

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- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.  
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:** If symptoms persist consult doctor.
- **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:**  
Use fire fighting measures that suit the environment.  
A solid water stream may be inefficient.
- **Special hazards arising from the substance or mixture**  
67-56-1 During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
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.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Use neutralizing agent.  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **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 disposal information.
- **Protective Action Criteria for Chemicals**

### · PAC-1:

7791-18-6	Magnesium chloride, hexahydrate	34 mg/m <sup>3</sup>
14459-95-1	Potassium Ferrocyanide Trihydrate	16 mg/m <sup>3</sup>

### · PAC-2:

7791-18-6	Magnesium chloride, hexahydrate	370 mg/m <sup>3</sup>
14459-95-1	Potassium Ferrocyanide Trihydrate	23 mg/m <sup>3</sup>

### · PAC-3:

7791-18-6	Magnesium chloride, hexahydrate	1,600 mg/m <sup>3</sup>
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14459-95-1 Potassium Ferrocyanide Trihydrate

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140 mg/m<sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- **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 product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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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:**



Tightly sealed goggles

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form:

lyophilized

Color:

According to product specification

- **Odor:**

Characteristic

- **Odor threshold:**

Not determined.

- **pH-value:**

Not applicable.

- **Change in condition**

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

Undetermined.

- **Flash point:**

Not applicable.

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

Not determined.

- **Decomposition temperature:**

Not determined.

- **Ignition temperature:**

Product is not selfigniting.

- **Danger of explosion:**

Not determined.

- **Explosion limits:**

Lower:

Not determined.

Upper:

Not determined.

- **Vapor pressure:**

Not applicable.

- **Density:**

Not determined.

- **Relative density**

Not determined.

- **Vapor density**

Not applicable.

- **Evaporation rate**

Not applicable.

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- |   |  |
|---|--|
| · <b>Solubility in / Miscibility with Water:</b>  | Soluble.                                   |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| · <b>Viscosity:</b>                               |  |
| <b>Dynamic:</b>                                   | Not applicable.                            |
| <b>Kinematic:</b>                                 | Not applicable.                            |
| · <b>Solvent content:</b>                         |  |
| <b>VOC content:</b>                               | 0.00 %                                     |
| <b>Solids content:</b>                            | 65.6 %                                     |
| · <b>Other information</b>                        | 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	3.37 mg/kg
Dermal	LD50	33.7 mg/kg
Inhalative	LC50/4 h	0.0337 mg/l

### 987-65-5 Adenosine 5'-triphosphate (sodium salt)

Oral	LD50	>2 g/kg (mouse) >2 g/kg (rat)
	Subcutaneous LD50	>2 g/kg (mouse) >2 g/kg (rat)

### 9002-93-1 Triton X-100

Oral	LD50	1,800 mg/kg (rat)
Irritation of skin	Irritation	500 µl/24h (rabbit) mild
Irritation of eyes	Irritation	10 µl/24h (rabbit) moderate
	Intravenous LD50	1,200 mg/kg (mouse)

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**83-07-8 4-Aminoantipyrine**

Oral	LD50	800 mg/kg (mouse) 1,700 mg/kg (rat)
	Intraperitoneal LD50	270 mg/kg (mouse) 1,200 mg/kg (rat)

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** Strong irritant with the danger of severe eye injury.

- **Sensitization:** Sensitization possible through inhalation.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

Very toxic

Danger through skin absorption.

- **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 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even 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.

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## 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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |   |   |
|---|---|
| · <b>UN-Number</b>  | UN2811  |
| · <b>DOT, IMDG, IATA</b>  |   |
| · <b>UN proper shipping name</b>  | Toxic solids, organic, n.o.s. (Adenosine 5'-triphosphate (sodium salt)) |
| · <b>DOT</b>  |   |
| · <b>IMDG</b>   | TOXIC SOLID, ORGANIC, N.O.S. (Adenosine 5'-triphosphate (sodium salt))  |
| · <b>IATA</b>   | Toxic solid, organic, n.o.s. (Adenosine 5'-triphosphate (sodium salt))  |
| · <b>Transport hazard class(es)</b>   |   |
| · <b>DOT</b>  |   |
|  |   |
| · <b>Class</b>  | 6.1 Toxic substances  |
| · <b>Label</b>  | 6.1   |
| · <b>IMDG, IATA</b>   |   |
|  |   |
| · <b>Class</b>  | 6.1 Toxic substances  |
| · <b>Label</b>  | 6.1   |
| · <b>Packing group</b>  |   |
| · <b>DOT, IMDG, IATA</b>  | I   |
| · <b>Environmental hazards:</b>   | Not applicable.   |
| · <b>Special precautions for user</b>   | Warning: Toxic substances   |
| · <b>Hazard identification number (Kemler code):</b>                                | 66  |
| · <b>EMS Number:</b>  | F-A,S-A   |
| · <b>Stowage Category</b>   | B   |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.   |

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- **Transport/Additional information:**

- **DOT**

- **Quantity limitations**

On passenger aircraft/rail: 5 kg

On cargo aircraft only: 50 kg

- **IMDG**

- **Limited quantities (LQ)**

0

- **Excepted quantities (EQ)**

Code: E5

Maximum net quantity per inner packaging: 1 g

Maximum net quantity per outer packaging: 300 g

- **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 2811 TOXIC SOLID, ORGANIC, N.O.S. (ADENOSINE 5'-TRIPHOSPHATE (SODIUM SALT)), 6.1, I

## 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):**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

7558-80-7	Sodium phosphate, Monobasic	ACTIVE
987-65-5	Adenosine 5'-triphosphate (sodium salt)	ACTIVE
9002-93-1	Triton X-100	ACTIVE
83-07-8	4-Aminoantipyrine	ACTIVE
9030-66-4	Kinase (phosphorylating), glycerol	ACTIVE
9003-99-0	Myeloperoxidase	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.

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

None of the ingredients is listed.

- **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 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** 06/22/2023

- **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 &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Solids 1: Flammable solids – Category 1

Acute Toxicity - Oral 1: Acute toxicity – Category 1

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Sensitization - Respiratory 1: Respiratory sensitisation – Category 1

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

- **\* Data compared to the previous version altered.**