# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

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## 1 Identification

· **Product identifier**

· **Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**
· **Other means of identification**

· **Article number:** 400004
· **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

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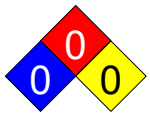
## 2 Hazard(s) identification

· **Classification of the substance or mixture**
The substance 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
· **Information pertaining to particular dangers for man and environment:**
· **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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# Safety Data Sheet
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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**

(Contd. from page 1)

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well Plate

## 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.
· **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:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:** Pick up mechanically.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** |
| --- |
| Substance is not listed. |

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# Safety Data Sheet
## acc. to OSHA HCS

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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**

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· **PAC-2:**
Substance is not listed.

· **PAC-3:**
Substance is not listed.

· **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.

* 
## 7 Handling and storage

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

## 8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
· **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:** Not required.



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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**

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## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Solid |
| · **Color:** | According to product specification |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not determined. |
| · **Formulation** | |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | Undetermined. |
| · **Flammability:** | Product is not flammable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Viscosity:** | |
| · **Kinematic:** | Not applicable. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Soluble. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Vapor pressure:** | |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not applicable. |
| · **Particle characteristics** | Not determined. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | PLATE |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Not determined. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **VOC content:** | 0.00 % |
| · **Solids content:** | 100.0 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not applicable. |

## 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.

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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**

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· **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**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
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.
The substance is not subject to classification.
· **Interactive effects** No interactive effects between components are known.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** |
|---|
| Substance is not listed. |

| · **NTP (National Toxicology Program)** |
|---|
| Substance is not listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| Substance is not listed. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects**
· **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.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Smaller quantities can be disposed of with household waste.

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# Safety Data Sheet
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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**

(Contd. from page 5)

· **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, 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. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):**
Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**
Substance is not listed.

· **TSCA (Toxic Substances Control Act):**
Substance is not listed.

· **Hazardous Air Pollutants**
Substance is not listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**
Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**
Substance is not listed.

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# Safety Data Sheet
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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate**

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· **Chemicals known to cause developmental toxicity:**
Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
Substance is not listed.

· **TLV (Threshold Limit Value)**
Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
Substance is not 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 previous version** 02/14/2023
· **Date of preparation** 09/25/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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
· *** Data compared to the previous version altered.**

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**
· **Other means of identification**

· **Article number:** 400006
· **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

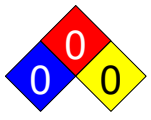
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA

· **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 substance 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
· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**




Health = 0
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 0

(Contd. on page 2)

# Safety Data Sheet
## acc. to OSHA HCS

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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**

(Contd. from page 1)

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
Precoated (Mouse Anti-Rabbit IgG) EIA 96-Well Plate

## 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.
· **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:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:** Pick up mechanically.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** |
| --- |
| Substance is not listed. |

(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**

(Contd. from page 2)

· **PAC-2:**
Substance is not listed.

· **PAC-3:**
Substance is not listed.

· **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.

* 
## 7 Handling and storage

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

## 8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
· **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:** Not required.



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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**

(Contd. from page 3)

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Solid |
| · **Color:** | According to product specification |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not determined. |
| · **Formulation** | |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | Undetermined. |
| · **Flammability:** | Product is not flammable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Viscosity:** | |
| · **Kinematic:** | Not applicable. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Soluble. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Vapor pressure:** | |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not applicable. |
| · **Particle characteristics** | Not determined. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | PLATE |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Not determined. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **VOC content:** | 0.00 % |
| · **Solids content:** | 100.0 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not applicable. |

## 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.

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# Safety Data Sheet
## acc. to OSHA HCS

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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**

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· **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**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
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.
The substance is not subject to classification.
· **Interactive effects** No interactive effects between components are known.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** |
|---|
| Substance is not listed. |

| · **NTP (National Toxicology Program)** |
|---|
| Substance is not listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| Substance is not listed. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects**
· **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.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Smaller quantities can be disposed of with household waste.

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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**

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· **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, 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. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):**
Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**
Substance is not listed.

· **TSCA (Toxic Substances Control Act):**
Substance is not listed.

· **Hazardous Air Pollutants**
Substance is not listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**
Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**
Substance is not listed.

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**Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid Plate**

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· **Chemicals known to cause developmental toxicity:**
Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
Substance is not listed.

· **TLV (Threshold Limit Value)**
Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
Substance is not 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 previous version** 02/14/2023
· **Date of preparation** 09/25/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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
· *** Data compared to the previous version altered.**

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: Polysorbate 20**
· **Synonym**
Polyoxyethylene (20) sorbitan monolaurate
Tween 20
PEG-10 sorbitan laurate
· **CAS Number:**
9005-64-5
· **Other means of identification**

· **Article number:** 400035
· **NLP Number:**
500-018-3
· **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 substance 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
· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 0
Fire = 1
Reactivity = 0

(Contd. on page 2)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Polysorbate 20**

(Contd. from page 1)

· **HMIS-ratings (scale 0 - 4)**

| | |
|---|---|
| HEALTH 0 | Health = 0 |
| FIRE 1 | Fire = 1 |
| REACTIVITY 0 | Reactivity = 0 |

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
9005-64-5 Polysorbate 20
· **Identification number(s)**
· **NLP Number:** 500-018-3

## 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.
· **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.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Polysorbate 20**

(Contd. from page 2)

· **Environmental precautions:** 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).
· **Protective Action Criteria for Chemicals**
· **PAC-1:** Substance is not listed.
· **PAC-2:** Substance is not listed.
· **PAC-3:** Substance is not listed.
· **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.

* 
## 7 Handling and storage

· **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

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
· **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.



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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Polysorbate 20**

(Contd. from page 3)

* 
## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Fluid |
| · **Color:** | Not determined. |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not applicable. |
| · **Formulation** | |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | Undetermined. |
| · **Flammability:** | Not applicable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | 275 °C (527 °F) |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not determined. |
| · **Viscosity:** | |
| · **Kinematic:** | Not determined. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not determined. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Not determined. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure:** | Not determined. |
| · **Vapor pressure:** | |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not determined. |
| · **Particle characteristics** | Not applicable. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Liquid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Not determined. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined. |

* 
## 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:** strong oxidizing agents

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Polysorbate 20**

(Contd. from page 4)

· **Hazardous decomposition products:** carbon oxides

* 
## 11 Toxicological information

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

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| Oral | LD50 | >33 g/kg (mouse) |
| | LD50 | 36,700 µL/kg (rat) |
| | Intraperitoneal LD50 | 3,850 mg/kg (rat) |
| | Intraperitoneal LD50 | 3,850 mg/kg (rat) |

· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
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.
The substance is not subject to classification.
· **Interactive effects** No interactive effects between components are known.

· **Carcinogenic categories**
· **IARC (International Agency for Research on Cancer)** Substance is not listed.
· **NTP (National Toxicology Program)** Substance is not listed.
· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not determined.
· **vPvB:** Not determined.
· **Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Smaller quantities can be disposed of with household waste.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Polysorbate 20**

(Contd. from page 5)

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

* 
## 14 Transport information

| | |
|---|---|
| · **UN-Number**<br>· **DOT, IMDG, IATA** | not regulated |
| · **UN proper shipping name**<br>· **DOT, ADN, IMDG, IATA** | not regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADN, IMDG, IATA**<br>· **Class** | not regulated |
| · **Packing group**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Environmental hazards:** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):** Substance is not listed.
· **Section 313 (Specific toxic chemical listings):** Substance is not listed.
· **TSCA (Toxic Substances Control Act):** ACTIVE
· **Hazardous Air Pollutants** Substance is not listed.
· **Proposition 65**
· **Chemicals known to cause cancer:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
· **Chemicals known to cause developmental toxicity:** Substance is not listed.

· **Carcinogenic categories**
· **EPA (Environmental Protection Agency)** Substance is not listed.
· **TLV (Threshold Limit Value)** Substance is not listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not 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

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 09/25/2024 Revision date 09/25/2024

**Trade name: Polysorbate 20**

(Contd. from page 6)

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 previous version** 02/14/2023
· **Date of preparation** 09/25/2024
· **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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
· *** Data compared to the previous version altered.**

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: ELISA Tracer Dye**
· **Other means of identification**

· **Article number:** 400040
· **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**

GHS07

Skin irritation 2 H315 Causes skin irritation.
Eye irritation 2A H319 Causes serious eye irritation.

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

GHS07

· **Signal word** Warning
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.

(Contd. on page 2)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 1)

· **Precautionary statements**

| | |
|---|---|
| P264 | Wash thoroughly after handling. |
| P280 | Wear protective gloves / eye protection / face protection. |
| P302+P352 | If on skin: Wash with plenty of water. |
| P321 | Specific treatment (see on this label). |
| P305+P351+P338 | If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P337+P313 | If eye irritation persists: Get medical advice/attention. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
EIA Tracer Dye
· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

| | | |
|---|---|---|
| CAS: 1310-73-2<br>RTECS: WB4900000 | Sodium hydroxide | 0.5% |

· **Other ingredients**

| | | |
|---|---|---|
| CAS: 7732-18-5<br>RTECS: ZC0110000 | Water | 99.25% |
| CAS: 25956-17-6 | FD&C red dye 40 | 0.25% |

US

(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 2)

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult 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).
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 1310-73-2 | Sodium hydroxide | 0.5 mg/m³ |

| · **PAC-2:** | | |
|---|---|---|
| 1310-73-2 | Sodium hydroxide | 5 mg/m³ |

| · **PAC-3:** | | |
|---|---|---|
| 1310-73-2 | Sodium hydroxide | 50 mg/m³ |

· **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.

* 
## 7 Handling and storage

· **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.

(Contd. on page 4)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 3)

· **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:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

* 
## 8 Exposure controls/personal protection

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **1310-73-2 Sodium hydroxide** | |
| PEL | Long-term value: 2 mg/m³ |
| REL | Ceiling limit value: 2 mg/m³ |
| TLV | Ceiling limit value: 2 mg/m³ |

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

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
Avoid contact with the eyes and skin.
· **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.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 4)

· **Eye protection:**

Tightly sealed goggles

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Fluid |
| · **Color:** | Red |
| · **Odor:** | Characteristic |
| · **Structural Formula** | H2O |
| · **Molecular Weight** | 18 g/mol |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not applicable. |
| · **Formulation** | A solution in 0.5 M sodium hydroxide |
| · **Melting point/Melting range:** | 0 °C (32 °F) |
| · **Boiling point/Boiling range:** | 100 °C (212 °F) |
| · **Flammability:** | Not applicable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not determined. |
| · **Viscosity:** | |
| · **Kinematic:** | Not determined. |
| · **SOLUBILITY** | |
| · **Dynamic at 20 °C (68 °F):** | 0.952 mPas |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Fully miscible. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure at 20 °C (68 °F):** | 23 hPa (17.3 mm Hg) |
| · **Vapor pressure:** | |
| · **Density at 20 °C (68 °F):** | 1 g/cm³ (8.345 lbs/gal) |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not determined. |
| · **Particle characteristics** | Not applicable. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Liquid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Solvent content:** | |
| · **Water:** | 99.3 % |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 5)

| | |
|---|---|
| · **VOC content:** | 0.00 %<br>0.0 g/l / 0.00 lb/gal |
| · **Solids content:** | 0.5 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined. |

## 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:** | | |
|---|---|---|
| **1310-73-2 Sodium hydroxide** | | |
| Oral | LDLO | 1.57 mg/kg (human) |
| | LD50 | 2,000 mg/kg (rat) |
| | | TDLO 44 mg/kg (rat) |
| | | LDLO 1.57 mg/kg (human) |
| | Intraperitoneal LD50 | 40 mg/kg (mouse) |

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
· **Interactive effects** No interactive effects between components are known.

· **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. |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 6)

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not determined.
· **vPvB:** Not determined.
· **Other adverse effects**
· **Additional ecological information:**
· **General notes:** Not hazardous for water.

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



(Contd. on page 8)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 7)

* 
## 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.

· **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 previous version** 10/03/2024
· **Date of preparation** 10/08/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Tracer Dye**

(Contd. from page 8)

IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
· *** Data compared to the previous version altered.**

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: ELISA Antiserum Dye**
· **Other means of identification**

· **Article number:** 400042
· **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

Carcinogenicity 1B H350 May cause cancer.

· **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:**
Trypan blue reagent
· **Hazard statements**
H350 May cause cancer.

(Contd. on page 2)

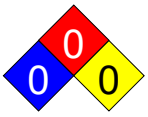
# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 1)

· **Precautionary statements**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Information pertaining to particular dangers for man and environment:**
· **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.
· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
EIA Antiserum Dye
· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 72-57-1<br>RTECS: QJ6475000 | Trypan blue reagent | 0.1% |

| · **Other ingredients** | | |
|---|---|---|
| CAS: 7732-18-5<br>RTECS: ZC0110000 | Water | 99.65% |
| CAS: 7647-14-5<br>RTECS: VZ4725000 | Sodium chloride | 0.25% |



(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 2)

## 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.
· **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).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **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. |

· **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.

* 
## 7 Handling and storage

· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:**
Keep respiratory protective device available.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 3)

· **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

· **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**
· **Appropriate engineering controls** No further data; see section 7.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· **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.
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



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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 4)

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Fluid |
| · **Color:** | Blue |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not determined. |
| · **Formulation** | A solution in 0.85% in sodium chloride |
| · **Melting point/Melting range:** | 0 °C (32 °F) |
| · **Boiling point/Boiling range:** | 100 °C (212 °F) |
| · **Flammability:** | Not applicable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not determined. |
| · **Viscosity:** | |
| · **Kinematic:** | Not determined. |
| · **SOLUBILITY** | |
| · **Dynamic at 20 °C (68 °F):** | 0.952 mPas |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Fully miscible. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure at 20 °C (68 °F):** | 23 hPa (17.3 mm Hg) |
| · **Vapor pressure:** | |
| · **Density at 20 °C (68 °F):** | 1 g/cm³ (8.345 lbs/gal) |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not determined. |
| · **Particle characteristics** | Not applicable. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Liquid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Solvent content:** | |
| · **Water:** | 99.7 % |
| · **VOC content:** | 0.00 %<br>0.0 g/l / 0.00 lb/gal |
| · **Solids content:** | 0.4 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined. |

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 6)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 5)

· **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:** | | |
|---|---|---|
| **72-57-1 Trypan blue reagent** | | |
| Oral | LD50 | 6,200 mg/kg (rat) |
| | Interperitoneal LDLO | 300 mg/kg (rat) |
| | Subcutaneous LD50 | 267 mg/kg (mouse) |
| | Subcutaneous LDLO | 300 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:**
The product shows the following dangers according to internally approved calculation methods for preparations:
· **Interactive effects** No interactive effects between components are known.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 72-57-1 | Trypan blue reagent | 2B |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

(Contd. on page 7)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 6)

· **Other adverse effects**
· **Additional ecological information:**
· **General notes:** Not hazardous for water.

## 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, IMDG, IATA** | not regulated |
| · **UN proper shipping name** · **DOT, ADN, 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. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | Not applicable. |
| · **UN "Model Regulation":** | not regulated |

* 
## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

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

| | |
|---|---|
| 72-57-1 | Trypan blue reagent |

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

(Contd. on page 8)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 7)

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 72-57-1 | Trypan blue reagent |

· **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.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
· **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 previous version** 10/03/2024
· **Date of preparation** 10/08/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Antiserum Dye**

(Contd. from page 8)

TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Carcinogenicity 1B: Carcinogenicity – Category 1B
· *** Data compared to the previous version altered.**

# Safety Data Sheet
**acc. to OSHA HCS**

Date of issue: 10/08/2024 Revision date 10/08/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: Ellmans Reagent**
· **Other means of identification**

· **Article number:** 400050
· **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA

· **Information department:** Product safety department
· **Emergency telephone number:**
During normal opening times: +1 (734) 971-3335
US/CANADA: 800-424-9300
Outside US/CANADA: 703-741-5970

* 
## 2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS06 Skull and crossbones

| | |
|---|---|
| Acute toxicity - oral 3 | H301 Toxic if swallowed. |
| Acute toxicity - dermal 3 | H311 Toxic in contact with skin. |

GHS08 Health hazard

| | |
|---|---|
| Specific target organ toxicity (repeated exposure) 2 | H373 May cause damage to organs through prolonged or repeated exposure. |

GHS05 Corrosion

| | |
|---|---|
| Eye damage 1 | H318 Causes serious eye damage. |

GHS07

(Contd. on page 2)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Ellmans Reagent**

(Contd. from page 1)

| | |
|---|---|
| Skin irritation 2 | H315 Causes skin irritation. |
| Specific target organ toxicity (single exposure) 3 | H335 May cause respiratory irritation. |

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

GHS05 GHS06 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Potassium phosphate dibasic
Acetylthiocholine (iodide)
Sodium chloride
Potassium phosphate, Monobasic
· **Hazard statements**
H301+H311 Toxic if swallowed or in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
· **Precautionary statements**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| 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. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| P301+P310 | If swallowed: Immediately call a poison center/doctor. |
| P321 | Specific treatment (see on this label). |
| 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. |
| P312 | Call a poison center/doctor if you feel unwell. |
| P314 | Get medical advice/attention if you feel unwell. |
| P361+P364 | Take off immediately all contaminated clothing and wash it before reuse. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Ellmans Reagent**

(Contd. from page 2)

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

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

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 7758-11-4<br>RTECS: TC5580000 | Potassium phosphate dibasic | 45.2% |
| CAS: 7647-14-5<br>RTECS: VZ4725000 | Sodium chloride | 29.7% |
| CAS: 7778-77-0<br>RTECS: TC6615500 | Potassium phosphate, Monobasic | 10.9% |
| CAS: 1866-15-5<br>RTECS: FZ9865000 | Acetylthiocholine (iodide) | 7.4% |
| CAS: 69-78-3<br>RTECS: DG9650000 | DTNB | 6.8% |

* 
## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **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.



(Contd. on page 4)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Ellmans Reagent**

(Contd. from page 3)

* 
## 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**
67-56-1During 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 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.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 13 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 9.6 mg/m³ |

| · **PAC-2:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 140 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 110 mg/m³ |

| · **PAC-3:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 830 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 630 mg/m³ |

· **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.

* 
## 7 Handling and storage

· **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:**
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:** Store in accordance with information listed on the product insert.
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Ellmans Reagent**

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

* 
## 8 Exposure controls/personal protection

· **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**
· **Appropriate engineering controls** No further data; see section 7.
· **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 skin.
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.
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



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# Safety Data Sheet
## acc. to OSHA HCS

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**Trade name: Ellmans Reagent**

(Contd. from page 5)

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Solid |
| · **Color:** | Yellow |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not applicable. |
| · **Formulation** | A lyophilized powder |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | Undetermined. |
| · **Flammability:** | Not determined. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Viscosity:** | |
| · **Kinematic:** | Not applicable. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Soluble. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Vapor pressure:** | |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not applicable. |
| · **Particle characteristics** | Not determined. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Solid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Solvent content:** | |
| · **VOC content:** | 0.00 % |
| · **Solids content:** | 100.0 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not applicable. |

## 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.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Ellmans Reagent**

(Contd. from page 6)

· **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 | 608 mg/kg |
| Dermal | LD50 | 4,054 mg/kg |

| **7647-14-5 Sodium chloride** | | |
|---|---|---|
| Oral | LDLO | 1,000 mg/kg (man) |
| | TDLO | 650 ml/kg (man) |
| | LD50 | 4,000 mg/kg (mouse) |
| | | 3,000 mg/kg (rat) |
| | LD50 | 4 g/kg (mouse) |
| Inhalative | LC50 | 320 mg/m³ (mouse) |
| | TCLO | 0.63 mg/m³ (human) |
| | LCLO | 29,300 mg/m³/7h (mouse) |
| Irritation of skin | Irritation | 500 mg/24h (rabbit)<br>mild |
| Irritation of eyes | Irritation | 100 mg/24h (rabbit)<br>moderate |
| | Intraperitoneal LD50 | 2,602 mg/kg (mouse) |
| | Subcutaneous LD50 | 31.6 mg/kg (rat) |
| | Intravenous LD50 | 59.5 mg/kg (rat) |
| | Data | 15 mg/3D (human)<br>mild |
| | Subcutaneous LD50 | 3 g/kg (mouse) |
| **7778-77-0 Potassium phosphate, Monobasic** | | |
| Oral | LDLO | 4,640 mg/kg (rat) |
| **1866-15-5 Acetylthiocholine (iodide)** | | |
| Oral | LD50 | 100 mg/kg (rat) |
| **69-78-3 DTNB** | | |
| | Intraperitoneal LD50 | 2,080 mg/kg (mouse) |

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic
Irritant

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## acc. to OSHA HCS

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**Trade name: Ellmans Reagent**

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· **Interactive effects** No interactive effects between components are known.

· **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. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not determined.
· **vPvB:** Not determined.
· **Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even extremely small quantities leak into the ground.

* 
## 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, IMDG, IATA** | not regulated |

| · **UN proper shipping name** | |
|---|---|
| · **DOT, ADN, IMDG, IATA** | not regulated |

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Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Ellmans Reagent**

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| | |
|---|---|
| · **Transport hazard class(es)** | |
| · **DOT, ADN, IMDG, IATA** | |
| · **Class** | not regulated |
| · **Packing group** | |
| · **DOT, IMDG, IATA** | not regulated |
| · **Environmental hazards:** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **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.



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**Trade name: Ellmans Reagent**

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* 
## 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 previous version** 09/25/2024
· **Date of preparation** 10/08/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute toxicity - oral 3: Acute toxicity – Category 3
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye damage 1: Serious eye damage/eye irritation – Category 1
Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3
Specific target organ toxicity (repeated exposure) 2: Specific target organ toxicity (repeated exposure) – Category 2
· *** Data compared to the previous version altered.**

# Safety Data Sheet
**acc. to OSHA HCS**

Date of issue: 10/08/2024 Revision date 10/08/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: ELISA Buffer Concentrate (10X)**
· **Other means of identification**

· **Article number:** 400060
· **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

Specific target organ toxicity (repeated exposure) 2 H373 May cause damage to organs through prolonged or repeated exposure.

GHS05 Corrosion

Eye damage 1 H318 Causes serious eye damage.

GHS07

Skin irritation 2 H315 Causes skin irritation.
Specific target organ toxicity (single exposure) 3 H335 May cause respiratory irritation.

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

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# Safety Data Sheet
## acc. to OSHA HCS

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**Trade name: ELISA Buffer Concentrate (10X)**

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· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Potassium phosphate dibasic
Sodium chloride
Potassium phosphate, Monobasic

· **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| P264 | Wash thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves / eye protection / face protection. |
| 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. |
| P310 | Immediately call a poison center/doctor. |
| P321 | Specific treatment (see on this label). |
| P314 | Get medical advice/attention if you feel unwell. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

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

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 2)

· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

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

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 7647-14-5<br>RTECS: VZ4725000 | Sodium chloride | 23.4% |
| CAS: 7758-11-4<br>RTECS: TC5580000 | Potassium phosphate dibasic | 13.3% |
| CAS: 7778-77-0<br>RTECS: TC6615500 | Potassium phosphate, Monobasic | 3.21% |
| CAS: 9048-46-8<br>RTECS: AY9296000 | Albumin, bovine | 1.0% |
| CAS: 26628-22-8<br>RTECS: VY8050000 | Sodium azide | 0.1% |

| · **Other ingredients** | | |
|---|---|---|
| CAS: 7732-18-5<br>RTECS: ZC0110000 | Water | 58.61% |
| CAS: 194491-31-1 | EDTA, tetrasodium salt hydrate | 0.38% |

* 
## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** If symptoms persist consult 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.

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# Safety Data Sheet
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**Trade name: ELISA Buffer Concentrate (10X)**

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· **Special hazards arising from the substance or mixture**
67-56-1During 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:**
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).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 13 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 9.6 mg/m³ |
| 26628-22-8 | Sodium azide | 0.026 mg/m³ |

| · **PAC-2:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 140 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 110 mg/m³ |
| 26628-22-8 | Sodium azide | 0.29 mg/m³ |

| · **PAC-3:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 830 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 630 mg/m³ |
| 26628-22-8 | Sodium azide | 5.3 mg/m³ |

· **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.

* 
## 7 Handling and storage

· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:**
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.

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# Safety Data Sheet
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Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 4)

· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

* 
## 8 Exposure controls/personal protection

· **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 other constituents have no known exposure limits.

| **26628-22-8 Sodium azide** | |
|---|---|
| REL | Ceiling limit value: 0.3** mg/m³, 0.1* ppm<br>*as HN3; **as NaN3; Skin |
| TLV | Ceiling limit value: 0.29** mg/m³, 0.11* ppm<br>*as HN3 vapor **as NaN3, A4 |

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

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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 skin.
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.
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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**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 5)

· **Eye protection:**

Tightly sealed goggles

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Fluid |
| · **Color:** | According to product specification |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not applicable. |
| · **Formulation** | 1 M phosphate solution containing 1% BSA, 4 M sodium chloride, 10 mM EDTA and 0.1% sodium azide |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | 100 °C (212 °F) |
| · **Flammability:** | Not applicable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value at 20 °C (68 °F):** | 7 |
| · **Viscosity:** | |
| · **Kinematic:** | Not determined. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not determined. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Fully miscible. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure at 20 °C (68 °F):** | 23 hPa (17.3 mm Hg) |
| · **Vapor pressure:** | |
| · **Density at 20 °C (68 °F):** | 1 g/cm³ (8.345 lbs/gal) |
| · **Relative density** | Not determined. |
| · **Bulk density:** | 1,000 kg/m³ |
| · **Vapor density** | Not determined. |
| · **Particle characteristics** | Not applicable. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Liquid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |

(Contd. on page 7)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 6)

| | |
|---|---|
| · **Solvent content:** | |
| · **Water:** | 58.6 % |
| · **VOC content:** | 0.00 %<br>0.0 g/l / 0.00 lb/gal |
| · **Solids content:** | 41.4 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined. |

## 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 | 3,096 mg/kg |
| Dermal | LD50 | 20,000 mg/kg |

| **7647-14-5 Sodium chloride** | | |
|---|---|---|
| Oral | LDLO | 1,000 mg/kg (man) |
| | TDLO | 650 ml/kg (man) |
| | LD50 | 4,000 mg/kg (mouse) |
| | | 3,000 mg/kg (rat) |
| | LD50 | 4 g/kg (mouse) |
| Inhalative | LC50 | 320 mg/m³ (mouse) |
| | TCLO | 0.63 mg/m³ (human) |
| | LCLO | 29,300 mg/m³/7h (mouse) |
| Irritation of skin | Irritation | 500 mg/24h (rabbit)<br>mild |
| Irritation of eyes | Irritation | 100 mg/24h (rabbit)<br>moderate |
| | Intraperitoneal LD50 | 2,602 mg/kg (mouse) |
| | Subcutaneous LD50 | 31.6 mg/kg (rat) |
| | Intravenous LD50 | 59.5 mg/kg (rat) |
| | Data | 15 mg/3D (human)<br>mild |
| | Subcutaneous LD50 | 3 g/kg (mouse) |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 7)

| | | |
|---|---|---|
| **7778-77-0 Potassium phosphate, Monobasic** | | |
| Oral | LDLO | 4,640 mg/kg (rat) |
| **9048-46-8 Albumin, bovine** | | |
| | Intraperitoneal TDLO | 0.2 pph (mouse) |
| **26628-22-8 Sodium azide** | | |
| Oral | LDLO | 27 mg/kg (rat) |
| | TDLO | 3 ml/kg (woman) |
| | LD50 | 27 mg/kg (rat) |
| | Subcutaneous LD50 | 45,100 µg/kg (rat) |
| Dermal | LD50 | 50 mg/kg (rat) |
| | | 20 mg/kg (rabbit) |
| Inhalative | LC50 | 37 mg/m³ (rat) |
| | Subcutaneous LD50 | 45,100 µg/kg (rat) |
| | Interperitoneal LDLO | 30 mg/kg (rat) |
| | Intraperitoneal LD50 | 28 mg/kg (mouse) |
| | Subcutaneous LD50 | 45 mg/kg (rat) |
| | Data | 5,500 mg/kg (mouse) |

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
· **Interactive effects** No interactive effects between components are known.

· **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. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not determined.
· **vPvB:** Not determined.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 8)

· **Other adverse effects**
· **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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

* 
## 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**<br>· **DOT, IMDG, IATA** | not regulated |
| · **UN proper shipping name**<br>· **DOT, ADN, IMDG, IATA** | not regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADN, IMDG, IATA**<br>· **Class** | not regulated |
| · **Packing group**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Environmental hazards:** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):** | |
|---|---|
| 26628-22-8 | Sodium azide |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 26628-22-8 | Sodium azide |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 9)

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

| | | |
|---|---|---|
| 7732-18-5 | Water | ACTIVE |
| 7647-14-5 | Sodium chloride | ACTIVE |
| 7758-11-4 | Potassium phosphate dibasic | ACTIVE |
| 7778-77-0 | Potassium phosphate, Monobasic | ACTIVE |
| 9048-46-8 | Albumin, bovine | ACTIVE |
| 26628-22-8 | Sodium azide | ACTIVE |

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **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)**

| | | |
|---|---|---|
| 26628-22-8 | Sodium azide | A4 |

· **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 previous version** 10/03/2024
· **Date of preparation** 10/08/2024
· **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)

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: ELISA Buffer Concentrate (10X)**

(Contd. from page 10)

VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye damage 1: Serious eye damage/eye irritation – Category 1
Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3
Specific target organ toxicity (repeated exposure) 2: Specific target organ toxicity (repeated exposure) – Category 2
· *** Data compared to the previous version altered.**

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

* 
## 1 Identification

· **Product identifier**

· **Trade name: Wash Buffer Concentrate (400X)**
· **Other means of identification**

· **Article number:** 400062
· **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**

GHS05 Corrosion

| | |
|---|---|
| Eye damage 1 | H318 Causes serious eye damage. |

GHS07

| | |
|---|---|
| Acute toxicity - oral 4 | H302 Harmful if swallowed. |
| Skin irritation 2 | H315 Causes skin irritation. |
| Specific target organ toxicity (single exposure) 3 | H335 May cause respiratory irritation. |

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

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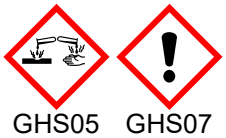
# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 1)

· **Hazard pictograms**



GHS05 GHS07

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Potassium phosphate dibasic
Potassium phosphate, Monobasic

· **Hazard statements**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

· **Precautionary statements**

| | |
|---|---|
| P261 | Avoid breathing dust/fume/gas/mist/vapors/spray |
| 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. |
| P280 | Wear protective gloves / eye protection / face protection. |
| P301+P312 | If swallowed: Call a poison center/doctor if you feel unwell. |
| 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. |
| P310 | Immediately call a poison center/doctor. |
| P321 | Specific treatment (see on this label). |
| P330 | Rinse mouth. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

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

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 2)

· **Classification according to (d)(1)(ii) of § 1910.12000**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

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

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 7758-11-4<br>RTECS: TC5580000 | Potassium phosphate dibasic | 53.0% |
| CAS: 7778-77-0<br>RTECS: TC6615500 | Potassium phosphate, Monobasic | 12.9% |

| · **Other ingredients** | | |
|---|---|---|
| CAS: 7732-18-5<br>RTECS: ZC0110000 | Water | 34.1% |

* 
## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Immediately call a 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.



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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 3)

* 
## 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).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 13 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 9.6 mg/m³ |

| · **PAC-2:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 140 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 110 mg/m³ |

| · **PAC-3:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 830 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 630 mg/m³ |

· **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.

* 
## 7 Handling and storage

· **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**
· **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

· **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.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 4)

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
Avoid contact with the skin.
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.
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**

| | |
|---|---|
| · **Physical state** | Fluid |
| · **Color:** | Colorless |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not applicable. |
| · **Formulation** | Concentrated wash buffer |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | 100 °C (212 °F) |
| · **Flammability:** | Not applicable. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 5)

| | |
|---|---|
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value at 20 °C (68 °F):** | 7.4 |
| · **Viscosity:** | |
| · **Kinematic:** | Not determined. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not determined. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Fully miscible. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure at 20 °C (68 °F):** | 23 hPa (17.3 mm Hg) |
| · **Vapor pressure:** | |
| · **Density at 20 °C (68 °F):** | 1.159 g/cm³ (9.67186 lbs/gal) |
| · **Relative density** | Not determined. |
| · **Bulk density:** | 1,159 kg/m³ |
| · **Vapor density** | Not determined. |
| · **Particle characteristics** | Not applicable. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Liquid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Solvent content:** | |
| · **Water:** | 34.1 % |
| · **VOC content:** | 0.00 %<br>0.0 g/l / 0.00 lb/gal |
| · **Solids content:** | 65.9 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined. |

## 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.



(Contd. on page 7)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 6)

* 
## 11 Toxicological information

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

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| **ATE (Acute Toxicity Estimate)** | | |
| Oral | LD50 | 943 mg/kg |

| **7778-77-0 Potassium phosphate, Monobasic** | | |
|---|---|---|
| Oral | LDLO | 4,640 mg/kg (rat) |

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
· **Interactive effects** No interactive effects between components are known.

· **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. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not determined.
· **vPvB:** Not determined.
· **Other adverse effects**
· **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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.



(Contd. on page 8)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 7)

* 
## 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**<br>· **DOT, IMDG, IATA** | not regulated |
| · **UN proper shipping name**<br>· **DOT, ADN, IMDG, IATA** | not regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADN, IMDG, IATA**<br>· **Class** | not regulated |
| · **Packing group**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Environmental hazards:** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

(Contd. on page 9)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 10/08/2024 Revision date 10/08/2024

**Trade name: Wash Buffer Concentrate (400X)**

(Contd. from page 8)

· **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 previous version** 10/03/2024
· **Date of preparation** 10/08/2024
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute toxicity - oral 4: Acute toxicity – Category 4
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye damage 1: Serious eye damage/eye irritation – Category 1
Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3
· *** Data compared to the previous version altered.**

# Safety Data Sheet
**acc. to OSHA HCS**

Date of issue: 04/09/2025 Revision date 04/09/2025

* 
## 1 Identification

· **Product identifier**

· **Trade name: Leukotriene C4 AChE Tracer**
· **Other means of identification**

· **Article number:** 401070
· **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

| | |
|---|---|
| Specific target organ toxicity (repeated exposure) 2 | H373 May cause damage to organs through prolonged or repeated exposure. |

GHS05 Corrosion

| | |
|---|---|
| Eye damage 1 | H318 Causes serious eye damage. |

GHS07

| | |
|---|---|
| Acute toxicity - oral 4 | H302 Harmful if swallowed. |
| Skin irritation 2 | H315 Causes skin irritation. |
| Specific target organ toxicity (single exposure) 3 | H335 May cause respiratory irritation. |

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

(Contd. on page 2)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 1)

· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Potassium phosphate dibasic
Sodium chloride
Albumin, bovine
Potassium phosphate, Monobasic

· **Hazard statements**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| 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. |
| P280 | Wear protective gloves / eye protection / face protection. |
| P301+P312 | If swallowed: Call a poison center/doctor if you feel unwell. |
| 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. |
| P310 | Immediately call a poison center/doctor. |
| P321 | Specific treatment (see on this label). |
| P314 | Get medical advice/attention if you feel unwell. |
| P330 | Rinse mouth. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 2)

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.1200**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 
## 3 Composition/information on ingredients

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

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 7647-14-5<br>RTECS: VZ4725000 | Sodium chloride | 47.27% |
| CAS: 7758-11-4<br>RTECS: TC5580000 | Potassium phosphate dibasic | 25.97% |
| CAS: 9048-46-8<br>RTECS: AY9296000 | Albumin, bovine | 19.54% |
| CAS: 7778-77-0<br>RTECS: TC6615500 | Potassium phosphate, Monobasic | 6.29% |
| CAS: 26628-22-8<br>RTECS: VY8050000 | Sodium azide | 0.2% |

| · **Other ingredients** | | |
|---|---|---|
| 194491-31-1 | EDTA, tetrasodium salt hydrate | 0.72% |
| | LTC4-AChE | 0.01% |

* 
## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Immediately call a 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.



(Contd. on page 4)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 3)

* 
## 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**
67-56-1During 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 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.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 13 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 9.6 mg/m³ |
| 26628-22-8 | Sodium azide | 0.026 mg/m³ |

| · **PAC-2:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 140 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 110 mg/m³ |
| 26628-22-8 | Sodium azide | 0.29 mg/m³ |

| · **PAC-3:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 830 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 630 mg/m³ |
| 26628-22-8 | Sodium azide | 8.8 mg/m3 |

· **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.

* 
## 7 Handling and storage

· **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:**
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:** Store in accordance with information listed on the product insert.

(Contd. on page 5)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 4)

· **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

· **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 other constituents have no known exposure limits.

| **26628-22-8 Sodium azide** | |
|---|---|
| REL | Ceiling limit value: 0.3** mg/m³, 0.1* ppm<br>*as HN3; **as NaN3; Skin |
| TLV | Ceiling limit value: 0.29** mg/m³, 0.11* ppm<br>*as HN3 vapor **as NaN3, A4 |

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

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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 skin.
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.
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.

(Contd. on page 6)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 5)

· **Eye protection:**

Tightly sealed goggles

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Solid |
| · **Color:** | According to product specification |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not determined. |
| · **Formulation** | |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | Undetermined. |
| · **Flammability:** | Not determined. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Viscosity:** | |
| · **Kinematic:** | Not applicable. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Soluble. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Vapor pressure:** | |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not applicable. |
| · **Particle characteristics** | Not determined. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | lyophilized |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Solvent content:** | |
| · **VOC content:** | 0.00 % |
| · **Solids content:** | 100.0 % |

(Contd. on page 7)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 6)

· **Change in condition**
· **Evaporation rate** Not applicable.

## 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 | 1,016 mg/kg |
| Dermal | LD50 | 10,000 mg/kg |

| **7647-14-5 Sodium chloride** | | |
|---|---|---|
| Oral | LDLO | 1,000 mg/kg (man) |
| | TDLO | 650 ml/kg (man) |
| | LD50 | 4,000 mg/kg (mouse) |
| | | 3,000 mg/kg (rat) |
| | LD50 | 4 g/kg (mouse) |
| Inhalative | LC50 | 320 mg/m³ (mouse) |
| | TCLO | 0.63 mg/m³ (human) |
| | LCLO | 29,300 mg/m³/7h (mouse) |
| Irritation of skin | Irritation | 500 mg/24h (rabbit)<br>mild |
| Irritation of eyes | Irritation | 100 mg/24h (rabbit)<br>moderate |
| | Intraperitoneal LD50 | 2,602 mg/kg (mouse) |
| | Subcutaneous LD50 | 31.6 mg/kg (rat) |
| | Intravenous LD50 | 59.5 mg/kg (rat) |
| | Data | 15 mg/3D (human)<br>mild |
| | Subcutaneous LD50 | 3 g/kg (mouse) |
| **9048-46-8 Albumin, bovine** | | |
| | Intraperitoneal TDLO | 0.2 pph (mouse) |
| **7778-77-0 Potassium phosphate, Monobasic** | | |
| Oral | LDLO | 4,640 mg/kg (rat) |

(Contd. on page 8)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 7)

| 26628-22-8 Sodium azide | | |
|---|---|---|
| Oral | LDLO | 27 mg/kg (rat) |
| | TDLO | 3 ml/kg (woman) |
| | LD50 | 27 mg/kg (rat) |
| | Subcutaneous LD50 | 45,100 µg/kg (rat) |
| Dermal | LD50 | 50 mg/kg (rat) |
| | | 20 mg/kg (rabbit) |
| Inhalative | LC50 | 37 mg/m³ (rat) |
| | Subcutaneous LD50 | 45,100 µg/kg (rat) |
| | Interperitoneal LDLO | 30 mg/kg (rat) |
| | Intraperitoneal LD50 | 28 mg/kg (mouse) |
| | Subcutaneous LD50 | 45 mg/kg (rat) |
| | Data | 5,500 mg/kg (mouse) |

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
· **Interactive effects** No interactive effects between components are known.

· **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. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

* 
## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water

(Contd. on page 9)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 8)

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

* 
## 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**<br>· **DOT, IMDG, IATA** | not regulated |
| · **UN proper shipping name**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADN, IMDG, IATA**<br>· **Class** | not regulated |
| · **Packing group**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Environmental hazards:** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):** | |
|---|---|
| 26628-22-8 | Sodium azide |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 26628-22-8 | Sodium azide |

| · **TSCA (Toxic Substances Control Act):** | | |
|---|---|---|
| 7647-14-5 | Sodium chloride | ACTIVE |
| 7758-11-4 | Potassium phosphate dibasic | ACTIVE |

(Contd. on page 10)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 9)

| | | |
|---|---|---|
| 9048-46-8 | Albumin, bovine | ACTIVE |
| 7778-77-0 | Potassium phosphate, Monobasic | ACTIVE |
| 26628-22-8 | Sodium azide | ACTIVE |

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **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)**

| | | |
|---|---|---|
| 26628-22-8 | Sodium azide | A4 |

· **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 previous version** 10/21/2021
· **Date of preparation** 04/09/2025
· **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

(Contd. on page 11)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 AChE Tracer**

(Contd. from page 10)

OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute toxicity - oral 4: Acute toxicity – Category 4
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye damage 1: Serious eye damage/eye irritation – Category 1
Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3
Specific target organ toxicity (repeated exposure) 2: Specific target organ toxicity (repeated exposure) – Category 2
· *** Data compared to the previous version altered.**

# Safety Data Sheet
**acc. to OSHA HCS**

Date of issue: 04/09/2025 Revision date 04/09/2025

## 1 Identification

· **Product identifier**

· **Trade name: Leukotriene C4 ELISA Antiserum**
· **Other means of identification**

· **Article number:** 401072
· **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

Specific target organ toxicity (repeated exposure) 2 H373 May cause damage to organs through prolonged or repeated exposure.

GHS05 Corrosion

Eye damage 1 H318 Causes serious eye damage.

GHS07

Acute toxicity - oral 4 H302 Harmful if swallowed.
Skin irritation 2 H315 Causes skin irritation.
Specific target organ toxicity (single exposure) 3 H335 May cause respiratory irritation.

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

(Contd. on page 2)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

(Contd. from page 1)

· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Potassium phosphate dibasic
Sodium chloride
Potassium phosphate, Monobasic
Albumin, bovine

· **Hazard statements**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| 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. |
| P280 | Wear protective gloves / eye protection / face protection. |
| P301+P312 | If swallowed: Call a poison center/doctor if you feel unwell. |
| 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. |
| P310 | Immediately call a poison center/doctor. |
| P321 | Specific treatment (see on this label). |
| P314 | Get medical advice/attention if you feel unwell. |
| P330 | Rinse mouth. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

(Contd. from page 2)

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.1200**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

## 3 Composition/information on ingredients

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

| · **Dangerous components:** | | |
|---|---|---|
| CAS: 7647-14-5<br>RTECS: VZ4725000 | Sodium chloride | 57.36% |
| CAS: 7758-11-4<br>RTECS: TC5580000 | Potassium phosphate dibasic | 31.51% |
| CAS: 7778-77-0<br>RTECS: TC6615500 | Potassium phosphate, Monobasic | 7.63% |
| CAS: 9048-46-8<br>RTECS: AY9296000 | Albumin, bovine | 2.37% |
| CAS: 26628-22-8<br>RTECS: VY8050000 | Sodium azide | 0.24% |

| · **Other ingredients** | | |
|---|---|---|
| 194491-31-1 | EDTA, tetrasodium salt hydrate | 0.88% |
| | Rabbit Anti LTC Polyclonal Antibody | 0.01% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Immediately call a 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.



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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

(Contd. from page 3)

## 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**
67-56-1During 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 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.
· **Protective Action Criteria for Chemicals**

| · **PAC-1:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 13 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 9.6 mg/m³ |
| 26628-22-8 | Sodium azide | 0.026 mg/m³ |

| · **PAC-2:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 140 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 110 mg/m³ |
| 26628-22-8 | Sodium azide | 0.29 mg/m³ |

| · **PAC-3:** | | |
|---|---|---|
| 7758-11-4 | Potassium phosphate dibasic | 830 mg/m³ |
| 7778-77-0 | Potassium phosphate, Monobasic | 630 mg/m³ |
| 26628-22-8 | Sodium azide | 8.8 mg/m3 |

· **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.

* 
## 7 Handling and storage

· **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:**
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:** Store in accordance with information listed on the product insert.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

(Contd. from page 4)

· **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

· **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 other constituents have no known exposure limits.

| **26628-22-8 Sodium azide** | |
|---|---|
| REL | Ceiling limit value: 0.3** mg/m³, 0.1* ppm<br>*as HN3; **as NaN3; Skin |
| TLV | Ceiling limit value: 0.29** mg/m³, 0.11* ppm<br>*as HN3 vapor **as NaN3, A4 |

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

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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 skin.
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.
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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# Safety Data Sheet
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**Trade name: Leukotriene C4 ELISA Antiserum**

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· **Eye protection:**

Tightly sealed goggles

* 

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Solid |
| · **Color:** | According to product specification |
| · **Odor:** | Characteristic |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not determined. |
| · **Formulation** | A lyophilized antiserum |
| · **Melting point/Melting range:** | Undetermined. |
| · **Boiling point/Boiling range:** | Undetermined. |
| · **Flammability:** | Not determined. |
| · **Explosion limits:** | |
| · **Lower:** | Not determined. |
| · **Upper:** | Not determined. |
| · **Flash point:** | Not applicable. |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Viscosity:** | |
| · **Kinematic:** | Not applicable. |
| · **SOLUBILITY** | |
| · **Dynamic:** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| · **Water:** | Soluble. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Vapor pressure:** | Not applicable. |
| · **Vapor pressure:** | |
| · **Density:** | Not determined. |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not applicable. |
| · **Particle characteristics** | Not determined. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | lyophilized |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Solvent content:** | |
| · **VOC content:** | 0.00 % |
| · **Solids content:** | 100.0 % |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

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· **Change in condition**
· **Evaporation rate** Not applicable.

## 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:** strong oxidizing agents
· **Hazardous decomposition products:**
hydrogen chloride gas, phosphorus oxides, potassium oxides,sodium oxides

* 
## 11 Toxicological information

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

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| **ATE (Acute Toxicity Estimate)** | | |
| Oral | LD50 | 1,305 mg/kg |
| Dermal | LD50 | 8,333 mg/kg |

| **7647-14-5 Sodium chloride** | | |
|---|---|---|
| Oral | LDLO | 1,000 mg/kg (man) |
| | TDLO | 650 ml/kg (man) |
| | LD50 | 4,000 mg/kg (mouse) |
| | | 3,000 mg/kg (rat) |
| | LD50 | 4 g/kg (mouse) |
| Inhalative | LC50 | 320 mg/m³ (mouse) |
| | TCLO | 0.63 mg/m³ (human) |
| | LCLO | 29,300 mg/m³/7h (mouse) |
| Irritation of skin | Irritation | 500 mg/24h (rabbit)<br>mild |
| Irritation of eyes | Irritation | 100 mg/24h (rabbit)<br>moderate |
| | Intraperitoneal LD50 | 2,602 mg/kg (mouse) |
| | Subcutaneous LD50 | 31.6 mg/kg (rat) |
| | Intravenous LD50 | 59.5 mg/kg (rat) |
| | Data | 15 mg/3D (human)<br>mild |
| | Subcutaneous LD50 | 3 g/kg (mouse) |
| **7778-77-0 Potassium phosphate, Monobasic** | | |
| Oral | LDLO | 4,640 mg/kg (rat) |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

(Contd. from page 7)

| | | |
|---|---|---|
| **9048-46-8 Albumin, bovine** | | |
| | Intraperitoneal TDLO | 0.2 pph (mouse) |
| **26628-22-8 Sodium azide** | | |
| Oral | LDLO | 27 mg/kg (rat) |
| | TDLO | 3 ml/kg (woman) |
| | LD50 | 27 mg/kg (rat) |
| | Subcutaneous LD50 | 45,100 µg/kg (rat) |
| Dermal | LD50 | 50 mg/kg (rat) |
| | | 20 mg/kg (rabbit) |
| Inhalative | LC50 | 37 mg/m³ (rat) |
| | Subcutaneous LD50 | 45,100 µg/kg (rat) |
| | Interperitoneal LDLO | 30 mg/kg (rat) |
| | Intraperitoneal LD50 | 28 mg/kg (mouse) |
| | Subcutaneous LD50 | 45 mg/kg (rat) |
| | Data | 5,500 mg/kg (mouse) |

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
· **Interactive effects** No interactive effects between components are known.

· **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. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

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· **Other adverse effects**
· **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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.

## 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**<br>· **DOT, IMDG, IATA** | not regulated |
| · **UN proper shipping name**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADN, IMDG, IATA**<br>· **Class** | not regulated |
| · **Packing group**<br>· **DOT, IMDG, IATA** | not regulated |
| · **Environmental hazards:** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Special precautions for user** | 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):** | |
|---|---|
| 26628-22-8 | Sodium azide |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 26628-22-8 | Sodium azide |

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

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

| | | |
|---|---|---|
| 7647-14-5 | Sodium chloride | ACTIVE |
| 7758-11-4 | Potassium phosphate dibasic | ACTIVE |
| 7778-77-0 | Potassium phosphate, Monobasic | ACTIVE |
| 9048-46-8 | Albumin, bovine | ACTIVE |
| 26628-22-8 | Sodium azide | ACTIVE |

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **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)**

| | | |
|---|---|---|
| 26628-22-8 | Sodium azide | A4 |

· **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 previous version** 10/21/2021
· **Date of preparation** 04/09/2025
· **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)

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 ELISA Antiserum**

(Contd. from page 10)

LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute toxicity - oral 4: Acute toxicity – Category 4
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye damage 1: Serious eye damage/eye irritation – Category 1
Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3
Specific target organ toxicity (repeated exposure) 2: Specific target organ toxicity (repeated exposure) – Category 2

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

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

## 1 Identification

· **Product identifier**

· **Trade name: Leukotriene C4 EIA Standard**
· **Other means of identification**

· **Article number:** 420214
· **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 liquids 2 H225 Highly flammable liquid and vapor.

GHS07

Eye irritation 2A H319 Causes serious eye irritation.

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

GHS02

GHS07

· **Signal word** Danger

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# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 EIA Standard**

(Contd. from page 1)

· **Hazard statements**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
· **Precautionary statements**

| | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground / bond container and receiving equipment. |
| P241 | Use explosion-proof [electrical/ventilating/lighting] equipment. |
| P242 | Use non-sparking tools. |
| P243 | Take action to prevent static discharge. |
| P264 | Wash thoroughly after handling. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| P303+P361+P353 | If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. |
| P305+P351+P338 | If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P337+P313 | If eye irritation persists: Get medical advice/attention. |
| P370+P378 | In case of fire: Use CO2, powder or water spray to extinguish. |
| P403+P235 | Store in a well-ventilated place. Keep cool. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 3
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Classification according to (d)(1)(ii) of § 1910.1200**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

## 3 Composition/information on ingredients

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

(Contd. on page 3)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 EIA Standard**

(Contd. from page 2)

· **Dangerous components:**

| | | |
|---|---|---|
| CAS: 64-17-5<br>RTECS: KQ6300000 | ethanol | 99.99% |

· **Other ingredients**

| | | |
|---|---|---|
| CAS: 72025-60-6<br>RTECS: MB9143500 | Leukotriene C4 | 0.01% |

* 

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Immediately rinse with water.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

## 5 Fire-fighting measures

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

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
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.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**

| | | |
|---|---|---|
| 64-17-5 | ethanol | 1,800 ppm |

· **PAC-2:**

| | | |
|---|---|---|
| 64-17-5 | ethanol | 3300* ppm |

· **PAC-3:**

| | | |
|---|---|---|
| 64-17-5 | ethanol | 15000* ppm |

(Contd. on page 4)

# Safety Data Sheet
## acc. to OSHA HCS

Date of issue: 04/09/2025 Revision date 04/09/2025

**Trade name: Leukotriene C4 EIA Standard**

(Contd. from page 3)

· **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.

* 
## 7 Handling and storage

· **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.
Protect against electrostatic charges.

· **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:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

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## 8 Exposure controls/personal protection

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **64-17-5 ethanol** | |
| PEL | Long-term value: 1900 mg/m³, 1000 ppm |
| REL | Long-term value: 1900 mg/m³, 1000 ppm |
| TLV | Short-term value: 1880 mg/m³, 1000 ppm<br>A3 |

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

· **Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required.

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# Safety Data Sheet
## acc. to OSHA HCS

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**Trade name: Leukotriene C4 EIA Standard**

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· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

* 
## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Physical state** | Liquid |
| · **Color:** | According to product specification |
| · **Odor:** | Alcohol-like |
| · **Storage Buffer** | |
| · **Odor threshold:** | Not determined. |
| · **Formulation** | A solution in ethanol |
| · **Melting point/Melting range:** | -114 °C (-173.2 °F) |
| · **Boiling point/Boiling range:** | 78 °C (172.4 °F) |
| · **Flammability:** | Highly flammable. |
| · **Explosion limits:** | |
| · **Lower:** | 3.3 Vol % |
| · **Upper:** | 19 Vol % |
| · **Flash point:** | 13 °C (55.4 °F) |
| · **Auto igniting:** | 425 °C (797 °F) |
| · **Decomposition temperature:** | Not determined. |
| · **pH-value:** | Not determined. |
| · **Viscosity:** | |
| · **Kinematic:** | Not determined. |
| · **SOLUBILITY** | |
| · **Dynamic at 20 °C (68 °F):** | 1.2 mPas |
| · **Solubility in / Miscibility with** | |
| · **Water at 20 °C (68 °F):** | 1,000 g/l |
| · **Partition coefficient (n-octanol/water):** | Not determined. |

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| | |
|---|---|
| · **Vapor pressure at 20 °C (68 °F):** | 59 hPa (44.3 mm Hg) |
| · **Vapor pressure at 50 °C (122 °F):** | 280 hPa (210 mm Hg) |
| · **Density at 20 °C (68 °F):** | 0.79 g/cm³ (6.59255 lbs/gal) |
| · **Relative density** | Not determined. |
| · **Vapor density** | Not determined. |
| · **Particle characteristics** | Not applicable. |

| | |
|---|---|
| · **Other information** | |
| · **Appearance:** | |
| · **Form:** | Liquid |
| · **Important information on protection of health and environment, and on safety.** | |
| · **Ignition temperature:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| · **Solvent content:** | |
| · **Organic solvents:** | 100.0 % |
| · **VOC content:** | 99.99 %<br>999.9 g/l / 8.34 lb/gal |
| · **Solids content:** | 0.0 % |
| · **Change in condition** | |
| · **Evaporation rate** | Not determined. |

## 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:** | | |
|---|---|---|
| **64-17-5 ethanol** | | |
| Oral | LD50 | 10,470 mg/kg (rat)<br>OECD Test Guideline 401 |
| Inhalative | LC50/4 h | 117–125 mg/l (rat)<br>OECD 403 (rat) |

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.

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· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
· **Interactive effects** No interactive effects between components are known.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 64-17-5 | ethanol | 1 |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects**
· **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.

## 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, IMDG, IATA** UN1170

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| | |
|---|---|
| · **UN proper shipping name** | |
| · **DOT** | Ethanol solutions |
| · **IMDG** | ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| · **IATA** | Ethanol solution |
| · **Transport hazard class(es)** | |
| · **DOT** | |
| | |
| · **Class** | 3 Flammable liquids |
| · **Label** | 3 |
| · **IMDG, IATA** | |
| | |
| · **Class** | 3 Flammable liquids |
| · **Label** | 3 |
| · **Packing group** | |
| · **DOT, IMDG, IATA** | II |
| · **Environmental hazards:** | 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: 5 L<br>On cargo aircraft only: 60 L |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **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.<br>Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity. |
| · **Special precautions for user** | Warning: Flammable liquids |
| · **Hazard identification number (Kemler code):** | 33 |
| · **EMS Number:** | F-E,S-D |

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| | |
|---|---|
| · **Stowage Category** | A |
| · **UN "Model Regulation":** | UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II |

* 
## 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):**

| | | |
|---|---|---|
| 64-17-5 | ethanol | ACTIVE |

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **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:**

| | |
|---|---|
| 64-17-5 | ethanol |

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

| | | |
|---|---|---|
| 64-17-5 | ethanol | A3 |

· **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.

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· **Contact:** -
· **Date of previous version** 10/21/2021
· **Date of preparation** 04/09/2025
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flammable liquids 2: Flammable liquids – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
· *** Data compared to the previous version altered.**