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 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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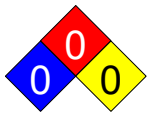
2 Hazard(s) identification

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

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· **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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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.

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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

(Contd. from page 4)

· **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**
· **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 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.

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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 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.

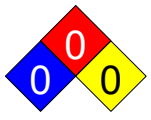
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA

· **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
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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
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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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Safety Data Sheet
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Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Solid 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.

(Contd. on page 5)

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 4)

· **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**
· **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.

(Contd. on page 6)

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

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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.

(Contd. on page 7)

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

(Contd. from page 6)

· **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: 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.

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· **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 RTECS: WB4900000	Sodium hydroxide	0.5%

· **Other ingredients**

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

US

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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.

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· **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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· **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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· **VOC content:**	0.00 % 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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· **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** · **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

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*
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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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.**

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*
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.

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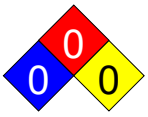
· **Precautionary statements**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P308+P313 IF exposed or concerned: Get medical 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 RTECS: QJ6475000	Trypan blue reagent	0.1%

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

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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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· **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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*

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 % 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.

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· **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.

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· **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.

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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.

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

Trade name: ELISA Antiserum Dye

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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: 07/24/2025 Revision date 07/24/2025

*
1 Identification

· **Product identifier**

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

· **Article number:** 400080
· **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.

GHS07

Skin irritation 2	H315 Causes skin irritation.
Eye irritation 2A	H319 Causes serious eye irritation.
Specific target organ toxicity (single exposure) 3	H335 May cause respiratory irritation.
Aquatic Acute 3	H402 Harmful to aquatic life.
Aquatic Chronic 3	H412 Harmful to aquatic life with long lasting effects.

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

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Trade name: Tris Buffer Concentrate (10X)

(Contd. from page 1)

· **Hazard pictograms**

GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
Tris HCl
Sodium chloride
Tris Base

· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

· **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.
P273	Avoid release to the environment.
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.
P312	Call a poison center/doctor if you feel unwell.
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.
P337+P313	If eye irritation persists: 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 = 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.

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Trade name: Tris Buffer Concentrate (10X)

(Contd. from page 2)

· **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: 1185-53-1	Tris HCl	13.22%
CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	8.474%
CAS: 9048-46-8 RTECS: AY9296000	Albumin, bovine	5.0%
CAS: 77-86-1 RTECS: TY2900000	Tris Base	1.94%
CAS: 26628-22-8 RTECS: VY8050000	Sodium azide	0.5%

· **Other ingredients**		
CAS: 7732-18-5 RTECS: ZC0110000	Water	70.4457%
CAS: 7791-18-6 RTECS: OM2975000	Magnesium chloride, hexahydrate	0.4067%
CAS: 7646-85-7 RTECS: ZH1400000	Zinc chloride	0.0136%

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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. 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.

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Trade name: Tris Buffer Concentrate (10X)

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*
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.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
1185-53-1	Tris HCl	12 mg/m³
77-86-1	Tris Base	18 mg/m³
26628-22-8	Sodium azide	0.026 mg/m³
7791-18-6	Magnesium chloride, hexahydrate	34 mg/m³
7646-85-7	Zinc chloride	2 mg/m³

· **PAC-2:**		
1185-53-1	Tris HCl	130 mg/m³
77-86-1	Tris Base	190 mg/m³
26628-22-8	Sodium azide	0.29 mg/m³
7791-18-6	Magnesium chloride, hexahydrate	370 mg/m³
7646-85-7	Zinc chloride	800 mg/m³

· **PAC-3:**		
1185-53-1	Tris HCl	790 mg/m³
77-86-1	Tris Base	1,200 mg/m³
26628-22-8	Sodium azide	8.8 mg/m3
7791-18-6	Magnesium chloride, hexahydrate	1,600 mg/m³
7646-85-7	Zinc chloride	4,800 mg/m³

· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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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**
· **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 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 *as HN3; **as NaN3; Skin
TLV	Ceiling limit value: 0.29** mg/m³, 0.11* ppm *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 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.

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Trade name: Tris Buffer Concentrate (10X)

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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:**	Characteristic
· **Storage Buffer**	
· **Odor threshold:**	Not determined.
· **Formulation**	1 M Tris-HCl, pH 7.6, containing 5% BSA, 1.45 M sodium chloride, 20 mM MgCl2, 1 mM ZnCl2, and 0.5% 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):**	7.4
· **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 g/cm³ (8.345 lbs/gal)
· **Relative density**	Not determined.
· **Bulk density:**	1,000 kg/m³
· **Vapor density**	Not determined.
· **Particle characteristics**	Not applicable.

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Trade name: Tris Buffer Concentrate (10X)

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· **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:**	70.4 %
· **VOC content:**	0.00 % 0.0 g/l / 0.00 lb/gal
· **Solids content:**	29.6 %
· **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

· **RTECS Number**

7647-14-5	Sodium chloride	VZ4725000
9048-46-8	Albumin, bovine	AY9296000
77-86-1	Tris Base	TY2900000
7646-85-7	Zinc chloride	ZH1400000

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

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

ATE (Acute Toxicity Estimate)

Oral	LD50	3,506 mg/kg
Dermal	LD50	4,000 mg/kg

7647-14-5 Sodium chloride

Oral	LDLO	1,000 mg/kg (man)
	TDLO	650 mg/kg (man)
	LD50	4,000 mg/kg (mouse)
		3,000 mg/kg (rat)
	LD50	4 g/kg (mouse)
Inhalative	LC50	320 mg/m³ (mouse)

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Trade name: Tris Buffer Concentrate (10X)

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	TCLO	0.63 mg/m³ (human)
	LCLO	29,300 mg/m³/7h (mouse)
Irritation of skin	Irritation	500 mg/24h (rabbit) mild
Irritation of eyes	Irritation	100 mg/24h (rabbit) 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) mild
	Subcutaneous LD50	3 g/kg (mouse)
9048-46-8 Albumin, bovine		
	Intraperitoneal TDLO	0.2 pph (mouse)
77-86-1 Tris Base		
Oral	TDLO	3,000 mg/kg (mouse)
	LD50	5,500 mg/kg (mouse)
		5,900 mg/kg (rat)
	Intraperitoneal LD50	3,350 mg/kg (mouse)
	Intrapritoneal LD50	3,350 mg/kg (mouse)
26628-22-8 Sodium azide		
Oral	LDLO	27 mg/kg (rat)
	TDLO	3 mg/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:** 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.

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Trade name: Tris Buffer Concentrate (10X)

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· **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**
· **Remark:** Harmful to fish
· **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.
Harmful to aquatic organisms

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, IMDG, IATA** not regulated

· **Transport hazard class(es)**

· **DOT, ADN, IMDG, IATA**
· **Class** not regulated

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Trade name: Tris Buffer Concentrate (10X)

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· **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):**

26628-22-8	Sodium azide

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

26628-22-8	Sodium azide
7646-85-7	Zinc chloride

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

7732-18-5	Water	ACTIVE
1185-53-1	Tris HCl	ACTIVE
7647-14-5	Sodium chloride	ACTIVE
9048-46-8	Albumin, bovine	ACTIVE
77-86-1	Tris Base	ACTIVE
26628-22-8	Sodium azide	ACTIVE
7646-85-7	Zinc chloride	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)**

7646-85-7	Zinc chloride	D, I, II

· **TLV (Threshold Limit Value)**

26628-22-8	Sodium azide	A4

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Trade name: Tris Buffer Concentrate (10X)

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· **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** 07/17/2021
· **Date of preparation** 07/24/2025
· **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
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
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
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
· *** Data compared to the previous version altered.**

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 07/24/2025 Revision date 07/24/2025

*
1 Identification

· **Product identifier**

· **Trade name: pNPP Substrate Solution**
· **Other means of identification**

· **Article number:** 400089
· **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

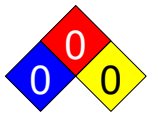
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA

· **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

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Trade name: pNPP Substrate Solution

(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 § 1910.1200**
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: Substances**
· **CAS No. Description**
pNPP Substrate Solution

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:**
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).

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· **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.

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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.

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

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Physical state**	Liquid
· **Color:**	According to product specification
· **Odor:**	Characteristic
· **Storage Buffer**	
· **Odor threshold:**	Not determined.
· **Formulation**	substrate p-nitrophenyl-phosphate (PNPP) solution
· **Melting point/Melting range:**	Undetermined.
· **Boiling point/Boiling range:**	Undetermined.
· **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:**	Not determined.
· **Solubility in / Miscibility with**	
· **Water:**	Fully miscible.
· **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.
· **VOC content:**	0.00 % 0.0 g/l / 0.00 lb/gal
· **Solids content:**	0.0 %
· **Change in condition**	
· **Evaporation rate**	Not determined.

10 Stability and reactivity

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

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· **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:**
· **Primary irritant effect:**
· **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.

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13 Disposal considerations

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

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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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.

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

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

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· **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 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** 01/20/2021
· **Date of preparation** 07/24/2025
· **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.**

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1 Identification

· **Product identifier**

· **Trade name: 11-Oxoetiocholanolone AP Tracer**
· **Other means of identification**

· **Article number:** 401420
· **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.

GHS07

Acute toxicity - oral 4	H302 Harmful if swallowed.
Acute toxicity - dermal 4	H312 Harmful in contact with skin.
Skin irritation 2	H315 Causes skin irritation.
Eye irritation 2A	H319 Causes serious eye irritation.
Specific target organ toxicity (single exposure) 3	H335 May cause respiratory irritation.
Aquatic Acute 3	H402 Harmful to aquatic life.
Aquatic Chronic 3	H412 Harmful to aquatic life with long lasting effects.

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

GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
Trade Secret
Sodium azide
· **Hazard statements**
H302+H312 Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.
· **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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P302+P352 If on skin: Wash with plenty of water.
P321 Specific treatment (see on this label).
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.
P314 Get medical advice/attention if you feel unwell.
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.
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 = 2
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH 2	Health = 2
FIRE 0	Fire = 0
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 § 1910.1200**
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: 1185-53-1	Trade Secret	38.26%
CAS: 9048-46-8 RTECS: AY9296000	Trade Secret	28.94%
	Trade Secret	≥20–≤25%
CAS: 77-86-1 RTECS: TY2900000	Trade Secret	5.61%
CAS: 26628-22-8 RTECS: VY8050000	Sodium azide	1.45%

· **Other ingredients**		
	Trade Secret	≤2.5%
	Trade Secret	≤2.5%
CAS: 7646-85-7 RTECS: ZH1400000	Trade Secret	0.04%

· **Additional information:**
The specific chemical identity of composition and exact percentage is being withheld as a trade secret. The specific chemical identity and exact percentage is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of paragraph §1910.1200.

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.

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· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, 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**
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.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
1185-53-1	Trade Secret	12 mg/m³
77-86-1	Trade Secret	18 mg/m³
26628-22-8	Sodium azide	0.026 mg/m³
	Trade Secret	34 mg/m³
7646-85-7	Trade Secret	2 mg/m³

· **PAC-2:**		
1185-53-1	Trade Secret	130 mg/m³
77-86-1	Trade Secret	190 mg/m³
26628-22-8	Sodium azide	0.29 mg/m³
	Trade Secret	370 mg/m³
7646-85-7	Trade Secret	800 mg/m³

· **PAC-3:**		
1185-53-1	Trade Secret	790 mg/m³
77-86-1	Trade Secret	1,200 mg/m³
26628-22-8	Sodium azide	8.8 mg/m3
	Trade Secret	1,600 mg/m³

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7646-85-7	Trade Secret	4,800 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.
· **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.
· **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 *as HN3; **as NaN3; Skin
TLV	Ceiling limit value: 0.29** mg/m³, 0.11* ppm *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 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

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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**	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.

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· **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 %
· **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

· **RTECS Number**

9048-46-8	Trade Secret	AY9296000
	Trade Secret	VZ4725000
77-86-1	Trade Secret	TY2900000
7646-85-7	Trade Secret	ZH1400000

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

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

ATE (Acute Toxicity Estimate)		
Oral	LD50	896 mg/kg
Dermal	LD50	1,379 mg/kg (rabbit)

9048-46-8 Trade Secret		
	Intraperitoneal TDLO	0.2 pph (mouse)
Trade Secret		
Oral	LDLO	1,000 mg/kg (man)
	TDLO	650 mg/kg (man)
	LD50	4,000 mg/kg (mouse)
		3,000 mg/kg (rat)
	LD50	4 g/kg (mouse)
Inhalative	LC50	320 mg/m³ (mouse)

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	TCLO	0.63 mg/m³ (human)
	LCLO	29,300 mg/m³/7h (mouse)
Irritation of skin	Irritation	500 mg/24h (rabbit) mild
Irritation of eyes	Irritation	100 mg/24h (rabbit) 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) mild
	Subcutaneous LD50	3 g/kg (mouse)
77-86-1 Trade Secret		
Oral	TDLO	3,000 mg/kg (mouse)
	LD50	5,500 mg/kg (mouse)
		5,900 mg/kg (rat)
	Intraperitoneal LD50	3,350 mg/kg (mouse)
	Intrapritoneal LD50	3,350 mg/kg (mouse)
26628-22-8 Sodium azide		
Oral	LDLO	27 mg/kg (rat)
	TDLO	3 mg/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:** Irritating effect.
· **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.

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Trade name: 11-Oxoetiocholanolone AP Tracer

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· **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**
· **Remark:** Harmful to fish
· **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.
Harmful to aquatic organisms

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, IMDG, IATA**	not regulated
· **Transport hazard class(es)**	
· **DOT, ADN, IMDG, IATA**	
· **Class**	not regulated
· **Packing group**	
· **DOT, IMDG, IATA**	not regulated

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· **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
7646-85-7	Trade Secret

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

1185-53-1	Trade Secret	ACTIVE
9048-46-8	Trade Secret	ACTIVE
	Trade Secret	ACTIVE
77-86-1	Trade Secret	ACTIVE
26628-22-8	Sodium azide	ACTIVE
7646-85-7	Trade Secret	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)**

7646-85-7	Trade Secret	D, I, II

· **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.

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

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· **Department issuing SDS:** Environment protection department.
· **Contact:** -
· **Date of preparation** 07/24/2025
· **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
Acute toxicity - oral 4: Acute toxicity – Category 4
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
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
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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1 Identification

· **Product identifier**

· **Trade name: 11-Oxoetiocholanolone ELISA Antiserum**
· **Other means of identification**

· **Article number:** 401422
· **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.

GHS07

Acute toxicity - oral 4	H302 Harmful if swallowed.
Acute toxicity - dermal 4	H312 Harmful in contact with skin.
Skin irritation 2	H315 Causes skin irritation.
Eye irritation 2A	H319 Causes serious eye irritation.
Specific target organ toxicity (single exposure) 3	H335 May cause respiratory irritation.
Aquatic Acute 3	H402 Harmful to aquatic life.
Aquatic Chronic 3	H412 Harmful to aquatic life with long lasting effects.

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

GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
Trade Secret
Sodium azide
· **Hazard statements**
H302+H312 Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.
· **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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P302+P352 If on skin: Wash with plenty of water.
P321 Specific treatment (see on this label).
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.
P314 Get medical advice/attention if you feel unwell.
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.
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 = 2
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH 2	Health = 2
FIRE 0	Fire = 0
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 § 1910.1200**
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:**		
	Trade Secret	>25–≤50%
	Trade Secret	>25–≤50%
	Trade Secret	≥20–≤25%
	Trade Secret	>2.5–<10%
CAS: 26628-22-8 RTECS: VY8050000	Sodium azide	1.45%

· **Other ingredients**	
Trade Secret	≤2.5%
Trade Secret	≤2.5%
Trade Secret	≥0.025–<0.25%

· **Additional information:**
The specific chemical identity of composition and exact percentage is being withheld as a trade secret. The specific chemical identity and exact percentage is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of paragraph §1910.1200.

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. If symptoms persist, consult a doctor.
· **After swallowing:** Immediately call a doctor.

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· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
A solid water stream may be inefficient.
· **Special hazards arising from the substance or mixture**
67-56-1During 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.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
	Trade Secret	12 mg/m³
	Trade Secret	18 mg/m³
26628-22-8	Sodium azide	0.026 mg/m³
	Trade Secret	34 mg/m³
	Trade Secret	2 mg/m³

· **PAC-2:**		
	Trade Secret	130 mg/m³
	Trade Secret	190 mg/m³
26628-22-8	Sodium azide	0.29 mg/m³
	Trade Secret	370 mg/m³
	Trade Secret	800 mg/m³

· **PAC-3:**		
	Trade Secret	790 mg/m³
	Trade Secret	1,200 mg/m³
26628-22-8	Sodium azide	8.8 mg/m3
	Trade Secret	1,600 mg/m³
	Trade Secret	4,800 mg/m³

· **Reference to other sections**
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling** 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.
· **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 *as HN3; **as NaN3; Skin
TLV	Ceiling limit value: 0.29** mg/m³, 0.11* ppm *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 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

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· **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**	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

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· **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 %
· **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

· **RTECS Number**	
Trade Secret	AY9296000
Trade Secret	VZ4725000
Trade Secret	TY2900000
Trade Secret	ZH1400000

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

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimate)		
Oral	LD50	896 mg/kg
Dermal	LD50	1,379 mg/kg (rabbit)

Trade Secret		
	Intraperitoneal TDLO	0.2 pph (mouse)
Trade Secret		
Oral	LDLO	1,000 mg/kg (man)
	TDLO	650 mg/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)

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Irritation of skin	Irritation	500 mg/24h (rabbit) mild
Irritation of eyes	Irritation	100 mg/24h (rabbit) 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) mild
	Subcutaneous LD50	3 g/kg (mouse)
Trade Secret		
Oral	TDLO	3,000 mg/kg (mouse)
	LD50	5,500 mg/kg (mouse)
		5,900 mg/kg (rat)
	Intraperitoneal LD50	3,350 mg/kg (mouse)
	Intrapritoneal LD50	3,350 mg/kg (mouse)
26628-22-8 Sodium azide		
Oral	LDLO	27 mg/kg (rat)
	TDLO	3 mg/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:** Irritating effect.
· **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.

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· **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**
· **Remark:** Harmful to fish
· **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.
Harmful to aquatic organisms

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, 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.

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· **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
	Trade Secret

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

	Trade Secret	ACTIVE
	Trade Secret	ACTIVE
	Trade Secret	ACTIVE
	Trade Secret	ACTIVE
26628-22-8	Sodium azide	ACTIVE
	Trade Secret	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)**

Trade Secret	D, I, II

· **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

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no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· **Department issuing SDS:** Environment protection department.
· **Contact:** -
· **Date of preparation** 07/24/2025
· **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
Acute toxicity - oral 4: Acute toxicity – Category 4
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
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
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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1 Identification

· **Product identifier**

· **Trade name: 11-Oxoetiocholanolone ELISA Standard**
· **Other means of identification**

· **Article number:** 401424
· **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.

GHS06 Skull and crossbones

Acute toxicity - oral 3	H301 Toxic if swallowed.
Acute toxicity - dermal 3	H311 Toxic in contact with skin.
Acute toxicity - inhalation 3	H331 Toxic if inhaled.

GHS08 Health hazard

Specific target organ toxicity (single exposure) 1	H370 Causes damage to the central nervous system and the visual organs.

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

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Trade name: 11-Oxoetiocholanolone ELISA Standard

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· **Hazard pictograms**

GHS02 GHS06 GHS08

· **Signal word** Danger

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

· **Hazard statements**

H225	Highly flammable liquid and vapor.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H370	Causes damage to the central nervous system and the visual organs.

· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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.
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.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	If inhaled: Remove person to fresh air and keep comfortable for breathing.
P308+P311	IF exposed or concerned: Call a poison center/doctor.
P312	Call a poison center/doctor if you feel unwell.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use CO2, powder or water spray to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **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

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· **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: 67-56-1 RTECS: PC1400000	Methanol	99.998%

· **Other ingredients**		
739-27-5	11-oxo Etiocholanolone	0.002%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** 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.

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**
67-56-1During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

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

· **PAC-1:**		
67-56-1	Methanol	530 ppm

· **PAC-2:**		
67-56-1	Methanol	2100 ppm

· **PAC-3:**		
67-56-1	Methanol	7200 ppm

· **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.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **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:**	
67-56-1 Methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

· **Ingredients with biological limit values:**	
67-56-1 Methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **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 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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· **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**	
· **Melting point/Melting range:**	-98 °C (-144.4 °F)
· **Boiling point/Boiling range:**	64.7 °C (148.5 °F)
· **Flammability:**	Highly flammable.
· **Explosion limits:**	
· **Lower:**	5.5 Vol %
· **Upper:**	44 Vol %
· **Flash point:**	9.7 °C (49.5 °F)
· **Auto igniting:**	455 °C (851 °F)
· **Decomposition temperature:**	Not determined.
· **pH-value:**	Not determined.
· **Viscosity:**	
· **Kinematic:**	Not determined.
· **SOLUBILITY**	
· **Dynamic:**	Not determined.
· **Solubility in / Miscibility with**	
· **Water at 20 °C (68 °F):**	1000 g/l
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	128 hPa (96 mm Hg)
· **Vapor pressure:**	
· **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 %

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· **VOC content:**	100.00 % 790.0 g/l / 6.59 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.

11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimate)		
Oral	LD50	100 mg/kg (rat)
Dermal	LD50	300 mg/kg (rabbit)
Inhalative	LC50/4 h	3.1 mg/l (rat)

67-56-1 Methanol		
Oral	LD50	100.1 mg/kg (rat) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Symptoms: Nausea, Vomiting
Dermal	LD50	300.1 mg/kg (rabbit) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Inhalative	LC50/4 h	3.1 mg/l (rat) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Symptoms: Irritation symptoms in the respiratory tract.

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

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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 applicable.
· **vPvB:** Not applicable.
· **Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even 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**	UN1992
· **UN proper shipping name**	
· **DOT**	Flammable liquids, toxic, n.o.s. (Methanol)
· **IMDG**	FLAMMABLE LIQUID, TOXIC, N.O.S. (Methanol)
· **IATA**	Flammable liquid, toxic, n.o.s. (Methanol)

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· **Transport hazard class(es)**

· **DOT**

· **Class**	3 Flammable liquids
· **Label**	3, 6.1

· **IMDG**

· **Class**	3 Flammable liquids
· **Label**	3/6.1

· **IATA**

· **Class**	3 Flammable liquids
· **Label**	3 (6.1)
· **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: 1 L On cargo aircraft only: 60 L
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml 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. 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):**	336

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· **EMS Number:**	F-E,S-D
· **Stowage Category**	B
· **Stowage Code**	SW2 Clear of living quarters.
· **UN "Model Regulation":**	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL), 3 (6.1), 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):**

67-56-1	Methanol

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

67-56-1	Methanol	ACTIVE

· **Hazardous Air Pollutants**

67-56-1	Methanol

· **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:**

67-56-1	Methanol

· **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.

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· **Department issuing SDS:** Environment protection department.
· **Contact:** -
· **Date of preparation** 07/24/2025
· **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
BEI: Biological Exposure Limit
Flammable liquids 2: Flammable liquids – Category 2
Acute toxicity - oral 3: Acute toxicity – Category 3
Specific target organ toxicity (single exposure) 1: Specific target organ toxicity (single exposure) – Category 1

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*
1 Identification

· **Product identifier**

· **Trade name: AP Wash Buffer Concentrate (150X)**
· **Other means of identification**

· **Article number:** 411007
· **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.
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**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
Tris HCl
Tris Base

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Trade name: AP Wash Buffer Concentrate (150X)

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· **Hazard statements**
H315 Causes skin irritation.
H335 May cause respiratory irritation.
· **Precautionary statements**
P261 Avoid breathing 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.
P302+P352 If on skin: Wash with plenty of water.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P312 Call a poison center/doctor if you feel unwell.
P321 Specific treatment (see on this label).
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 = 1
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1
Fire = 1
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.

· **Dangerous components:**		
CAS: 1185-53-1	Tris HCl	19.83%
CAS: 77-86-1 RTECS: TY2900000	Tris Base	2.91%

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Trade name: AP Wash Buffer Concentrate (150X)

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· **Other ingredients**		
CAS: 7732-18-5 RTECS: ZC0110000	Water	69.76%
CAS: 9005-64-5 RTECS: TR7400000	Polysorbate 20	7.5%

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.
· **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.
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:**		
1185-53-1	Tris HCl	12 mg/m³
77-86-1	Tris Base	18 mg/m³

· **PAC-2:**		
1185-53-1	Tris HCl	130 mg/m³
77-86-1	Tris Base	190 mg/m³

· **PAC-3:**		
1185-53-1	Tris HCl	790 mg/m³

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77-86-1	Tris Base	1,200 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**
Keep container tightly closed.
Store in accordance with information listed on the product insert.
· **Storage:** Store in accordance with information listed on the product insert.
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **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.
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

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· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Goggles recommended during refilling.

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Physical state**	Liquid
· **Color:**	According to product specification
· **Odor:**	Characteristic
· **Storage Buffer**	
· **Odor threshold:**	Not determined.
· **Formulation**	1.5 M Tris HCl, pH 7.4, containing 7.5% Tween 20
· **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:**	275 °C (527 °F)
· **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):**	0.55 g/cm³ (4.58975 lbs/gal)
· **Relative density**	Not determined.
· **Bulk density:**	550 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.

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· **Solvent content:**	
· **Water:**	69.8 %
· **VOC content:**	0.00 % 0.0 g/l / 0.00 lb/gal
· **Solids content:**	30.2 %
· **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

· **RTECS Number**

77-86-1	Tris Base	TY2900000

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

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

77-86-1 Tris Base

Oral	TDLO	3,000 mg/kg (mouse)
	LD50	5,500 mg/kg (mouse)
		5,900 mg/kg (rat)
	Intraperitoneal LD50	3,350 mg/kg (mouse)
	Intrapritoneal LD50	3,350 mg/kg (mouse)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **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:
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.

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· **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.

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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.

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· **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.

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.

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· **Department issuing SDS:** Environment protection department.
· **Contact:** -
· **Date of previous version** 01/20/2021
· **Date of preparation** 07/24/2025
· **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
Skin irritation 2: Skin corrosion/irritation – Category 2
Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3
· *** Data compared to the previous version altered.**