

Page 1/7

# Safety Data Sheet acc. to OSHA HCS

Printing date 05/18/2021

Revision date 05/18/2021

# **1** Identification

#### Product identifier

- Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate
- Synonym ÿ
- · Article number: 400004\_400006, 022955
- · Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.

- 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
- Classification system:
- NFPA ratings (scale 0 4)



· HMIS-ratings (scale 0 - 4)

HEALTH 0	Health = 0
	Fire = 0
REACTIVITY 0	Reactivity = 0

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

(Contd. on page 2)

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 1)

#### **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.
- Information for doctor:
- **Most important symptoms and effects, both acute and delayed** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
- · Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- Protective Action Criteria for Chemicals
- · PAC-1:

Substance is not listed.

· PAC-2:

Substance is not listed.

(Contd. on page 3)

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Printing date 05/18/2021

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

(Contd. from page 2)

PAC-3:

Substance is not listed.

# 7 Handling and storage

- · Handling:
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities Keep container tightly closed.
- Store in accordance with information listed on the product insert.
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

- 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
- · 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.

# 9 Physical and chemical properties

- Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form:

Solid

(Contd. on page 4)

US ·

Printing date 05/18/2021

Revision date 05/18/2021

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

	(Contd. from page 3
Color:	According to product specification
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not applicable.
<sup>.</sup> Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Product is not flammable.
<sup>·</sup> Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Soluble.
· Partition coefficient (n-octanol/wa	ter): Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 %
Solids content:	100.0 %
· Other information	No further relevant information available.

# 10 Stability and reactivity

· Reactivity No further relevant information available.

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

(Contd. on page 5)

US

Printing date 05/18/2021

Revision date 05/18/2021

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

(Contd. from page 4)

### **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.

· 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.

# **12 Ecological information**

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

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

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

- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

# **13 Disposal considerations**

- · Waste treatment methods
- Recommendation: 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.

(Contd. on page 6)

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 5)

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

· Chemicals known to cause developmental toxicity:

Substance is not listed.

Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

(Contd. on page 7)

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Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 6)

# 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 preparation / last revision 05/18/2021 / -

 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.



Page 1/7

# Safety Data Sheet acc. to OSHA HCS

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# **1** Identification

#### Product identifier

- Trade name: Precoated (Mouse Anti-Rabbit IgG) ELISA 96-Well Strip Plate
- Synonym ÿ
- · Article number: 400004\_400006, 022955
- · Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.

- 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
- Classification system:
- NFPA ratings (scale 0 4)



· HMIS-ratings (scale 0 - 4)

HEALTH 0	Health = 0
	Fire = 0
REACTIVITY 0	Reactivity = 0

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

(Contd. on page 2)

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 1)

#### **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.
- Information for doctor:
- **Most important symptoms and effects, both acute and delayed** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
- · Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- Protective Action Criteria for Chemicals
- · PAC-1:

Substance is not listed.

· PAC-2:

Substance is not listed.

(Contd. on page 3)

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Printing date 05/18/2021

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

(Contd. from page 2)

PAC-3:

Substance is not listed.

# 7 Handling and storage

- · Handling:
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities Keep container tightly closed.
- Store in accordance with information listed on the product insert.
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

- 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
- · 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.

# 9 Physical and chemical properties

- Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form:

Solid

(Contd. on page 4)

US ·

Printing date 05/18/2021

Revision date 05/18/2021

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

	(Contd. from page 3
Color:	According to product specification
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not applicable.
<sup>.</sup> Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Product is not flammable.
<sup>·</sup> Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Soluble.
· Partition coefficient (n-octanol/wa	ter): Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 %
Solids content:	100.0 %
· Other information	No further relevant information available.

# 10 Stability and reactivity

· Reactivity No further relevant information available.

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

(Contd. on page 5)

US

Printing date 05/18/2021

Revision date 05/18/2021

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

(Contd. from page 4)

### **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.

· 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.

# **12 Ecological information**

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

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

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

- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

# **13 Disposal considerations**

- · Waste treatment methods
- Recommendation: 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.

(Contd. on page 6)

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 5)

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

· Chemicals known to cause developmental toxicity:

Substance is not listed.

Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

(Contd. on page 7)

JS

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 6)

# 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 preparation / last revision 05/18/2021 / -

 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.



Printing date 10/05/2021

Revision date 10/05/2021

Page 1/7

#### **1** Identification

- Product identifier
- · Trade name: Polysorbate 20
- Article number: 400035
- CAS Number: 9005-64-5
- NLP Number: 500-018-3

#### · Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.

- · 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
- · Classification system:
- NFPA ratings (scale 0 4)

Health = 0 Fire = 1 Reactivity = 0

(Contd. on page 2)

US -

Printing date 10/05/2021

Revision date 10/05/2021

#### Trade name: Polysorbate 20

(Contd. from page 1)

#### · HMIS-ratings (scale 0 - 4)



#### · Other hazards

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

#### **3 Composition/information on ingredients**

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

### **4 First-aid measures**

- Description of first aid measures
- · General information: No special measures required.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed

May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

(Contd. on page 3)

Printing date 10/05/2021

Revision date 10/05/2021

(Contd. from page 2)

#### Trade name: Polysorbate 20

Reference to other sections
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

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

# 7 Handling and storage

- · Handling:
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- · Specific end use(s) No further relevant information available.

# 8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- 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
- Personal protective equipment:
- · General protective and hygienic measures:
- The usual precautionary measures for handling chemicals should be followed.
- Breathing equipment: Not required.
- Protection of hands:

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

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

• Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

• Penetration time of glove material

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

Eye protection: Goggles recommended during refilling.

(Contd. on page 4)

US

Printing date 10/05/2021

Revision date 10/05/2021

#### Trade name: Polysorbate 20

(Contd. from page 3)

9 Physical and chemical prope	erties	
· Information on basic physical and	chemical properties	
· General Information		
· Appearance:		
Form:	Liquid	
Color:	Not determined.	
· Odor: · Odor threshold:	Characteristic	
· Odor threshold:	Not determined.	
· pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	Undetermined.	
· Flash point:	275 °C (527 °F)	
<ul> <li>Flammability (solid, gaseous):</li> </ul>	Not applicable.	
<ul> <li>Decomposition temperature:</li> </ul>	Not determined.	
· Auto igniting:	Not determined.	
<ul> <li>Danger of explosion:</li> </ul>	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
· Vapor pressure:	Not determined.	
· Density:	Not determined.	
Relative density	Not determined.	
· Vapor density	Not determined.	
· Evaporation rate	Not determined.	
<ul> <li>Solubility in / Miscibility with</li> </ul>		
Water:	Not determined.	
· Partition coefficient (n-octanol/wa	ter): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
• Other information	No further relevant information available.	

# 10 Stability and reactivity

· Reactivity No further relevant information available.

- · Chemical stability
- Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

- Possibility of hazardous reactions No dangerous reactions known.
- Conditions to avoid No further relevant information available.
- · Incompatible materials: strong oxidizing agents

(Contd. on page 5)

US

Printing date 10/05/2021

Revision date 10/05/2021

(Contd. from page 4)

Trade name: Polysorbate 20

· Hazardous decomposition products: carbon oxides

# **11 Toxicological information**

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevan	nt for classification:
-----------------------------------	------------------------

- Oral LD50 >33 g/kg (mouse)
  - LD50 36,700 µL/kg (rat) Intraperitoneal LD50 3,850 mg/kg (rat)
  - Intraperitoneal LD50 3,850 mg/kg (rat)
- 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.

- · 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.

# **12 Ecological information**

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

Water hazard class 1 (Assessment by list): slightly hazardous for water

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

- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- **vPvB:** Not applicable.
- · Other adverse effects No further relevant information available.

# **13 Disposal considerations**

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

(Contd. on page 6)

US -

Printing date 10/05/2021

Revision date 10/05/2021

(Contd. from page 5)

### Trade name: Polysorbate 20

· Uncleaned packagings:

• **Recommendation:** Disposal must be made according to official regulations.

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

# **15 Regulatory information**

- Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): ACTIVE
- Hazardous Air Pollutants Substance is not listed.
- · Proposition 65
- · Chemicals known to cause cancer: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- · Chemicals known to cause developmental toxicity: Substance is not listed.
- · Carcinogenic categories
- · EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- $\cdot$  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

(Contd. on page 7)

US

Printing date 10/05/2021

Revision date 10/05/2021

# Trade name: Polysorbate 20

(Contd. from page 6) these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.
<ul> <li>Department issuing SDS: Environment protection department.</li> <li>Contact: -</li> <li>Date of preparation / last revision 10/05/2021 / -</li> <li>Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPVB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety &amp; Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit * Data compared to the previous version altered.</li></ul>



Page 1/7

# Safety Data Sheet acc. to OSHA HCS

Printing date 05/18/2021

Revision date 05/18/2021

### **1** Identification Product identifier · Trade name: Wash Buffer Concentrate (400X) · Article number: 400062, 025478 · Application of the substance / the mixture This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications. · Details of the supplier of the safety data sheet Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 USA · Information department: Product safety department · Emergency telephone number: During normal opening times: +1 (734) 971-3335 US/CANADA: 800-424-9300 Outside US/CANADA: 703-741-5970 2 Hazard(s) identification · Classification of the substance or mixture The product is not classified, according to the Globally Harmonized System (GHS). · Label elements · GHS label elements None · Hazard pictograms None · Signal word None · Hazard statements None · Classification system: • NFPA ratings (scale 0 - 4) Health = 0Fire = 0Reactivity = 0 · HMIS-ratings (scale 0 - 4) HEALTH 0 Health = 0 0 Fire = 0 FIRE REACTIVITY 0 Reactivity = 0 Other hazards Results of PBT and vPvB assessment • **PBT:** Not applicable. · vPvB: Not applicable.

(Contd. on page 2)

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 1)

#### **3** Composition/information on ingredients

#### · Chemical characterization: Mixtures

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

#### · Dangerous components: None

<ul> <li>Other ingre</li> </ul>	edients
---------------------------------	---------

• Other ingredients		
CAS: 7758-11-4 RTECS: TC5580000	Potassium phosphate, dibasic	53.0%
CAS: 7732-18-5 RTECS: ZC0110000	Water	34.1%
CAS: 7778-77-0 RTECS: TC6615500	Potassium phosphate, Monobasic	12.9%

### **4 First-aid measures**

- Description of first aid measures
- · General information: No special measures required.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
- 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.

(Contd. on page 3)

Printing date 05/18/2021

Revision date 05/18/2021

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

· Protective Action Criteria for Chemicals	(Contd. from page 2
· PAC-1:	
7758-11-4 Potassium phosphate, dibasic	13 mg/m³
7778-77-0 Potassium phosphate, Monobasic	9.6 mg/m³
· PAC-2:	
7758-11-4 Potassium phosphate, dibasic	140 mg/m³
7778-77-0 Potassium phosphate, Monobasic	110 mg/m³
· PAC-3:	
7758-11-4 Potassium phosphate, dibasic	830 mg/m³
7778-77-0 Potassium phosphate, Monobasic	630 mg/m³

# 7 Handling and storage

- · Handling:
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities Keep container tightly closed.
- Store in accordance with information listed on the product insert.
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

# 8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- Personal protective equipment:
- · General protective and hygienic measures:
- The usual precautionary measures for handling chemicals should be followed.
- Breathing equipment: Not required.
- Protection of hands:

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

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

• Material of gloves

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

(Contd. on page 4)

Printing date 05/18/2021

Revision date 05/18/2021

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

• 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.

# 9 Physical and chemical properties

General Information	
<ul> <li>Appearance:</li> <li>Form:</li> <li>Color:</li> <li>Odor:</li> <li>Odor threshold:</li> <li>Formulation</li> </ul>	Liquid Colorless Characteristic Not determined. Concentrated wash buffer (4 M phosphate, pH 7.4)
PH-value at 20 °C (68 °F):	7.4
Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 100 °C (212 °F)
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not determined.
Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits: Lower: Upper:	Not determined. Not determined.
<sup>.</sup> Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
<sup>·</sup> Density at 20 °C (68 °F):	1.159 g/cm³ (9.67186 lbs/gal)
<ul> <li>Bulk density:</li> <li>Relative density</li> <li>Vapor density</li> <li>Evaporation rate</li> </ul>	1,159 kg/m³ Not determined. Not applicable. Not applicable.
<ul> <li>Solubility in / Miscibility with Water:</li> </ul>	Soluble.
· Partition coefficient (n-octanol/wate	er): Not determined.
<sup>·</sup> Viscosity: Dynamic: Kinematic:	Not applicable. Not applicable.
Solvent content: Water: VOC content:	34.1 % 0.00 %

(Contd. from page 3)

Printing date 05/18/2021

Revision date 05/18/2021

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

(Contd. from page 4)

• Other information

No further relevant information available.

#### **10 Stability and reactivity**

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

# 11 Toxicological information

· Information on toxicological effects

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

The product is not subject to classification according to internally approved calculation methods for preparations:

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

#### · Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

#### · NTP (National Toxicology Program)

None of the ingredients is listed.

#### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

# **12 Ecological information**

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

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.

(Contd. on page 6)

US -

Printing date 05/18/2021

Revision date 05/18/2021

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

(Contd. from page 5)

# · Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- · vPvB: Not applicable.

• Other adverse effects No further relevant information available.

# **13 Disposal considerations**

- · Waste treatment methods
- Recommendation: 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.

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

# **15 Regulatory information**

- Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

- Section 313 (Specific toxic chemical listings):
- None of the ingredients is listed.
- TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

# · Hazardous Air Pollutants

None of the ingredients is listed.

(Contd. on page 7)

US

Printing date 05/18/2021

#### Revision date 05/18/2021

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

(Contd. from page 6)

· Proposition 65
· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value)

None of the ingredients is listed.

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

None of the ingredients is listed.

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

# **16 Other information**

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

· Department issuing SDS: Environment protection department.

Contact: -

- · Date of preparation / last revision 05/18/2021 / -
- Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety **OSHA: Occupational Safety & Health** TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit \* \* Data compared to the previous version altered.



Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2020

Revision date 05/03/2020

### **1** Identification

- Product identifier
- · Trade name: TMB Substrate Solution
- · Article number: 400074, 008155
- · Application of the substance / the mixture For research use only not for human or veterinary 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

Repr. 1B

H360 May damage fertility or the unborn child.

GHS07

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

· Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).  $\cdot$  Hazard pictograms



- · Signal word Danger
- **Hazard-determining components of labeling:** N-Methyl-2-pyrrolidone
- Hazard statements
   Causes skin irritation.
   Causes serious eye irritation.
   May damage fertility or the unborn child.

(Contd. on page 2)

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: TMB Substrate Solution

		(Contd. from page
	ary statements	
	cial instructions before use.	
	the until all safety precautions have been read and understood	00.
	ughly after handling.	-
	ctive gloves/protective clothing/eye protection/face protection /ash with plenty of water.	11.
	Rinse cautiously with water for several minutes. Remove co	ntact lenses if present and eas
to do. Contir		maet lenses, il present and eac
	or concerned: Get medical advice/attention.	
	atment (see on this label).	
	ntaminated clothing and wash it before reuse.	
	ion occurs: Get medical advice/attention.	
	on persists: Get medical advice/attention.	
Store locked		
	contents/container in accordance with local/regional/nationa	l/international regulations.
Classificati		
NFPA raung	gs (scale 0 - 4)	
	Health = 2	
	Fire = 1	
<b>20</b>	Reactivity = 0	
HMIS-rating	gs (scale 0 - 4)	
HEALTH *2	<sup>2</sup> Health = *2	
FIRE 1		
REACTIVITY 0		
Other haza		
	PBT and vPvB assessment	
PBT: Not ap		
vPvB: Not a		
Composit	tion/information on ingredients	

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

· Dangerous compon	ents:	
CAS: 872-50-4 RTECS: UY5790000	N-Methyl-2-pyrrolidone	1–5%
· Other ingredients		
	TMB Substrate Solution	94.5%
CAS: 124-43-6 RTECS: YT4850000	Urea peroxide	0.5%

# **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.

(Contd. on page 3)

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: TMB Substrate Solution

• After eye contact:

(Contd. from page 2)

- Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- Most important symptoms and effects, both acute and delayed
- May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

# **5 Fire-fighting measures**

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

# 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures 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 item 13.
- Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

N-Methyl-2-pyrrolidone	30 ppm
Urea peroxide	1.2 mg/m <sup>3</sup>
N-Methyl-2-pyrrolidone	32 ppm
Urea peroxide	13 mg/m³
	190 ppm
Urea peroxide	79 mg/m³
	N-Methyl-2-pyrrolidone Urea peroxide N-Methyl-2-pyrrolidone Urea peroxide N-Methyl-2-pyrrolidone Urea peroxide

# 7 Handling and storage

- · Handling:
- Precautions for safe handling Open and handle receptacle with care.

(Contd. on page 4)

US

Printing date 05/03/2020

Revision date 05/03/2020

(Contd. from page 3)

#### Trade name: TMB Substrate Solution

• **Information about protection against explosions and fires:** Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities Keep container tightly closed.

Store in accordance with information listed on the product insert.

- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.

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

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters

#### · Components with limit values that require monitoring at the workplace:

872-50-4	N-Methyl-2-pyrrolidone

TLV BEI

WEEL Long-term value: 10 ppm Skin

#### · Ingredients with biological limit values:

#### 872-50-4 N-Methyl-2-pyrrolidone

BEI 100 mg/L Medium: urine Time: end of shift Parameter: 5-Hydroxy-N-methyl-2-pyrrolidone

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

#### Exposure controls

- · Personal protective equipment:
- General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the eyes and skin.
- Breathing equipment: Not required.
- Protection of hands:
- 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

(Contd. on page 5)

<sup>-</sup> ÚS

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: TMB Substrate Solution

(Contd. from page 4)

- 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

<ul> <li>General Information</li> <li>Appearance: <ul> <li>Form:</li> <li>Color:</li> <li>Odor:</li> <li>Odor threshold:</li> </ul> </li> <li>pH-value at 20 °C (68 °F):</li> <li>Change in condition <ul> <li>Melting point/Melting range:</li> <li>Boiling point/Boiling range:</li> </ul> </li> <li>Flash point: <ul> <li>Flammability (solid, gaseous):</li> </ul> </li> <li>Ignition temperature:</li> </ul>	Liquid Not determined. Characteristic Not determined. 5.9 Undetermined. 202 °C (395.6 °F) 93 °C (199.4 °F) Not applicable.
Form:         Color:         Odor:         Odor threshold:         PH-value at 20 °C (68 °F):         Change in condition         Melting point/Melting range:         Boiling point/Boiling range:         Flash point:         Flammability (solid, gaseous):	Not determined. Characteristic Not determined. 5.9 Undetermined. 202 °C (395.6 °F) 93 °C (199.4 °F)
Color: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition Melting point/Melting range: Boiling point/Boiling range: • Flash point: • Flammability (solid, gaseous):	Not determined. Characteristic Not determined. 5.9 Undetermined. 202 °C (395.6 °F) 93 °C (199.4 °F)
<ul> <li>Odor:</li> <li>Odor threshold:</li> <li>pH-value at 20 °C (68 °F):</li> <li>Change in condition Melting point/Melting range: Boiling point/Boiling range:</li> <li>Flash point:</li> <li>Flammability (solid, gaseous):</li> </ul>	Characteristic Not determined. 5.9 Undetermined. 202 °C (395.6 °F) 93 °C (199.4 °F)
<ul> <li>Odor threshold:</li> <li>pH-value at 20 °C (68 °F):</li> <li>Change in condition Melting point/Melting range: Boiling point/Boiling range:</li> <li>Flash point:</li> <li>Flammability (solid, gaseous):</li> </ul>	Not determined.           5.9           Undetermined.           202 °C (395.6 °F)           93 °C (199.4 °F)
<ul> <li>Change in condition Melting point/Melting range: Boiling point/Boiling range:</li> <li>Flash point:</li> <li>Flammability (solid, gaseous):</li> </ul>	Undetermined. 202 °C (395.6 °F) 93 °C (199.4 °F)
Melting point/Melting range: Boiling point/Boiling range: · Flash point: · Flammability (solid, gaseous):	202 °C (395.6 °F) 93 °C (199.4 °F)
Boiling point/Boiling range: · Flash point: · Flammability (solid, gaseous):	202 °C (395.6 °F) 93 °C (199.4 °F)
<ul> <li>Flash point:</li> <li>Flammability (solid, gaseous):</li> </ul>	93 °C (199.4 °F)
Flammability (solid, gaseous):	
	Not applicable.
· Ignition temperature:	
5 1	270 °C (518 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	0.25018–3.65333 g/cm <sup>3</sup> (2.08775–30.48704 lbs/gal)
· Bulk density:	250–3,653 kg/m³
Relative density	Not determined.
Vapor density	Not determined.
· Evaporation rate	Not determined.
<ul> <li>Solubility in / Miscibility with</li> </ul>	
Water:	Fully miscible.
· Partition coefficient (n-octanol/water)	Not determined.
<ul> <li>Viscosity: Dynamic:</li> </ul>	Not determined.

Printing date 05/03/2020

Revision date 05/03/2020

### Trade name: TMB Substrate Solution

		(Contd. from page
Kinematic:	Not determined.	
<ul> <li>Solvent content: Organic solvents: VOC content:</li> </ul>	1–5 % 1–5 % 12.5–182.7 g/l / 0.1–1.52 lb/gal	
Solids content: · Other information	0.5 % No further relevant information available.	

# **10 Stability and reactivity**

· Reactivity No further relevant information available.

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

	o <mark>logical informati</mark> tion on toxicologica oxicity:	
	•	evant for classification:
ATE (Ac	ute Toxicity Estimat	te)
Oral	LD50	78,280–391,400 mg/kg (rat)
872-50-4	4 N-Methyl-2-pyrrolic	lone
Oral	LD50	3,914 mg/kg (rat)
Dermal	LD50	8,000 mg/kg (rabbit)
	Intraperitoneal LD50	2,472 mg/kg (rat)
	Subcutaneous LD50	>2 g/kg (rat)
• on the s • on the e • Sensitiz • Additior	eye: Irritating effect. ation: No sensitizing nal toxicological info duct shows the follo	
	genic categories	
		for Research on Cancer)
None of	the ingredients is liste	ed.
· NTP (Na	ntional Toxicology P	rogram)
None of	the ingredients is liste	
		(Contd. on page 7)

Printing date 05/03/2020

Revision date 05/03/2020

Trade name: TMB Substrate Solution

(Contd. from page 6)

# · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

# **12 Ecological information**

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

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

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

- Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- Other adverse effects No further relevant information available.

# **13 Disposal considerations**

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

UN-Number		
DOT, IMDG, IATA	not regulated	
UN proper shipping name		
DOT, IMDG, IATA	not regulated	
Transport hazard class(es)		
DOT, ADN, IMDG, IATA		
Class	not regulated	
Packing group		
DOT, IMDG, IATA	not regulated	
Environmental hazards:	Not applicable.	
Special precautions for user	Not applicable.	

Printing date 05/03/2020

Revision date 05/03/2020

Trade name: TMB Substrate Solution

(Contd. from page 7)

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable. · UN "Model Regulation": not regulated

# **15 Regulatory information**

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

<ul> <li>Section 355 (extremely hazardous substances):</li> </ul>	
None of the ingredients is listed.	
· Section 313 (Specific toxic chemical listings):	
872-50-4 N-Methyl-2-pyrrolidone	
TSCA (Toxic Substances Control Act):	
872-50-4 N-Methyl-2-pyrrolidone	ACTIV
124-43-6 Urea peroxide	ACTIV
· Hazardous Air Pollutants	
None of the ingredients is listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
872-50-4 N-Methyl-2-pyrrolidone	
Carcinogenic categories	
· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	
· TLV (Threshold Limit Value established by ACGIH)	
None of the ingredients is listed.	
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
· GHS label elements	
The product is closeified and labeled according to the Clobally Harmonized System	

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

Hazard pictograms



· Signal word Danger

(Contd. on page 9)

US

Printing date 05/03/2020

Revision date 05/03/2020

(Contd. from page 8)

### Trade name: TMB Substrate Solution

· Hazard-determining components of labeling: N-Methyl-2-pyrrolidone · Hazard statements Causes skin irritation. Causes serious eye irritation. May damage fertility or the unborn child. · Precautionary statements Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Specific treatment (see on this label). Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. • Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### **16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Environment protection department.
- · Contact: -
- · Date of preparation / last revision 05/03/2020 / - Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists 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 Skin Irrit. 2: Skin corrosion/irritation - Category 2 Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A Repr. 1B: Reproductive toxicity - Category 1B

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Page 1/8

## Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2020

Revision date 05/03/2020

#### **1** Identification

- Product identifier
- · Trade name: Immunoassay Buffer D Concentration (5X)
- · Article number: 400108, 024717
- Application of the substance / the mixture For research use only not for human or veterinary use.
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 USA
- · Information department: Product safety department
- Emergency telephone number: During normal opening times: +1 (734) 971-3335 US/CANADA: 800-424-9300 Outside US/CANADA: 703-741-5970

### 2 Hazard(s) identification

• **Classification of the substance or mixture** The product is not classified, according to the Globally Harmonized System (GHS).

- · Label elements
- · GHS label elements None
- · Hazard pictograms None
- · Signal word None
- · Hazard statements None
- · Classification system:
- NFPA ratings (scale 0 4)



#### · HMIS-ratings (scale 0 - 4)

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

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

## **3 Composition/information on ingredients**

#### · Chemical characterization: Mixtures

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

US

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: Immunoassay Buffer D Concentration (5X)

		(Contd. from page 1)
· Dangerous compon	ents:	
CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	11.7%
CAS: 7758-11-4 RTECS: TC5580000	Potassium phosphate, dibasic	6.6%
· Other ingredients		
CAS: 7732-18-5 RTECS: ZC0110000	Water	74.408%
CAS: 9048-46-8 RTECS: MT6446000	Albumin, bovine	5.5%
CAS: 7778-77-0 RTECS: TC6615500	Potassium phosphate, Monobasic	1.6%
CAS: 194491-31-1	EDTA, tetrasodium salt, hydrate	0.19%
CAS: 2682-20-4 RTECS: NX8157080	2-Methyl-4-isothiazolin-3-one	<0.001%
CAS: 26172-55-4 RTECS: NX8156850	5-Chloro-2-methyl-4-isothiazolin-3-one	0.001%

#### **4 First-aid measures**

- Description of first aid measures
- General information: No special measures required.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed

May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.

(Contd. on page 3)

US

Printing date 05/03/2020

Revision date 05/03/2020

### Trade name: Immunoassay Buffer D Concentration (5X)

• Methods ar Absorb with • Reference to See Section See Section See Section	to enter sewers/ surface or ground water. ad material for containment and cleaning up: liquid-binding material (sand, diatomite, acid binders, universal binders, o other sections 7 for information on safe handling. 8 for information on personal protection equipment. 13 for disposal information. Action Criteria for Chemicals	(Contd. from page 2) sawdust).
· PAC-1:		
	Potassium phosphate, dibasic	13 mg/m <sup>3</sup>
	Potassium phosphate, Monobasic	9.6 mg/m <sup>3</sup>
26172-55-4	5-Chloro-2-methyl-4-isothiazolin-3-one	0.6 mg/m <sup>3</sup>
· PAC-2:		
7758-11-4	Potassium phosphate, dibasic	140 mg/m <sup>3</sup>
7778-77-0	Potassium phosphate, Monobasic	110 mg/m <sup>3</sup>
26172-55-4	5-Chloro-2-methyl-4-isothiazolin-3-one	6.6 mg/m³
· PAC-3:		
7758-11-4	Potassium phosphate, dibasic	830 mg/m³
7778-77-0	Potassium phosphate, Monobasic	630 mg/m³
26172-55-4	5-Chloro-2-methyl-4-isothiazolin-3-one	40 mg/m³
		· · · · · · · · · · · · · · · · · · ·

## 7 Handling and storage

- · Handling:
- Precautions for safe handling No special measures required.
- Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities Keep container tightly closed.

Store in accordance with information listed on the product insert.

· Storage:

- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

## 8 Exposure controls/personal protection

• Additional information about design of technical systems: No further data; see item 7.

Control parameters

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

7647-14-5 Sodium chloride
PEL Long-term value: 10 ppm

TLV Long-term value: 10 mg/m<sup>3</sup>, 10 ppm

7758-11-4 Potassium phosphate, dibasic

PEL Short-term value: 10 mg/m<sup>3</sup>

Long-term value: 10 ppm аэрозоль

(Contd. on page 4)

US

Printing date 05/03/2020

Revision date 05/03/2020

## Trade name: Immunoassay Buffer D Concentration (5X)

TLV Short-term value: 10 mg/m <sup>3</sup>	(Contd. from page 3
Long-term value: 10 ppm	
аэрозоль	
Additional information: The lists that	at were valid during the creation were used as basis.
· Exposure controls	
<ul> <li>Personal protective equipment:</li> <li>General protective and hygienic m</li> </ul>	easures:
The usual precautionary measures for	or handling chemicals should be followed.
• Breathing equipment: Not required.	
• Protection of hands: The glove material has to be imperme	eable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommen	ndation to the glove material can be given for the product/ the
preparation/ the chemical mixture.	popularation of the population times, rates of diffusion and the
degradation	consideration of the penetration times, rates of diffusion and the
<ul> <li>Material of gloves</li> </ul>	
	does not only depend on the material, but also on further marks or rer to manufacturer. As the product is a preparation of severa
substances, the resistance of the glo	by the material can not be calculated in advance and has therefore t
be checked prior to the application.	
Penetration time of glove material	be found out by the manufacturer of the protective gloves and be
The exact break through time has to	be found out by the manufacturer of the protective gloves and ha
to be observed.	
	ded during refilling.
to be observed.	ded during refilling.
to be observed.	
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope	erties
to be observed. • Eye protection: Goggles recommen	erties
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance:	erties chemical properties
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form:	chemical properties
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance:	erties chemical properties
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color:	chemical properties Liquid Not determined.
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor:	chemical properties Liquid Not determined. Characteristic
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition	chemical properties Liquid Not determined. Characteristic Not determined. 7.4
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition Melting point/Melting range:	chemical properties Liquid Not determined. Characteristic Not determined. 7.4 Undetermined.
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition Melting point/Melting range: Boiling point/Boiling range:	chemical properties Liquid Not determined. Characteristic Not determined. 7.4 Undetermined. 100 °C (212 °F)
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition Melting point/Melting range: Boiling point/Boiling range: • Flash point:	crties         chemical properties         Liquid         Not determined.         Characteristic         Not determined.         7.4         Undetermined.         100 °C (212 °F)         Not applicable.
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition Melting point/Melting range: Boiling point/Boiling range: • Flash point: • Flammability (solid, gaseous):	crties         chemical properties         Liquid         Not determined.         Characteristic         Not determined.         7.4         Undetermined.         100 °C (212 °F)         Not applicable.         Not applicable.
<ul> <li>to be observed.</li> <li>Eye protection: Goggles recommen</li> <li>9 Physical and chemical properiod</li> <li>9 Information on basic physical and</li> <li>9 General Information</li> <li>Appearance:     <ul> <li>Form:</li> <li>Color:</li> <li>Odor:</li> <li>Odor threshold:</li> <li>pH-value at 20 °C (68 °F):</li> </ul> </li> <li>Change in condition     <ul> <li>Melting point/Melting range:</li> <li>Boiling point/Boiling range:</li> <li>Flash point:</li> <li>Flammability (solid, gaseous):</li> <li>Decomposition temperature:</li> </ul> </li> </ul>	Prties         chemical properties         Liquid         Not determined.         Characteristic         Not determined.         7.4         Undetermined.         100 °C (212 °F)         Not applicable.         Not determined.         Not applicable.         Not determined.
to be observed. • Eye protection: Goggles recommen 9 Physical and chemical prope • Information on basic physical and • General Information • Appearance: Form: Color: • Odor: • Odor: • Odor threshold: • pH-value at 20 °C (68 °F): • Change in condition Melting point/Melting range: Boiling point/Boiling range: • Flash point: • Flammability (solid, gaseous):	crties         chemical properties         Liquid         Not determined.         Characteristic         Not determined.         7.4         Undetermined.         100 °C (212 °F)         Not applicable.         Not applicable.

Not determined.

Not determined.

Danger of explosion:
 Explosion limits:
 Lower:
 Upper:

(Contd. on page 5)

US

Printing date 05/03/2020

Revision date 05/03/2020

Trade name: Immunoassay Buffer D Concentration (5X)

		(Contd. from page 4
<sup>.</sup> Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
<sup>·</sup> Density at 20 °C (68 °F):	1 g/cm³ (8.345 lbs/gal)	
· Bulk density:	1,000 kg/m³	
· Relative density	Not determined.	
· Vapor density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Fully miscible.	
· Partition coefficient (n-octanol/wate	er): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Water:	74.4 %	
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	25.4 %	
· Other information	No further relevant information available.	

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

· Chemical stability

• Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

- Possibility of hazardous reactions No dangerous reactions known.
- Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

#### **11 Toxicological information**

- · Information on toxicological effects
- Acute toxicity:

. . . . . .

ATE (Acute Toxicity Estim	ate)	
Oral LD50	25,641 mg/kg (rat)	
7647-14-5 Sodium chlorid	9	
Oral LDLO	1,000 mg/kg (man)	
TDLO	650 ml/kg (man)	
LD50	4,000 mg/kg (mouse)	
	3,000 mg/kg (rat)	
LD50	4 g/kg (mouse)	
Inhalative LC50	320 mg/m <sup>3</sup> (mouse)	

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: Immunoassay Buffer D Concentration (5X)

		(Contd. from page 5)
	TCLO	0.63 mg/m³ (hmn)
	LCLO	29,300 mg/m³/7h (mouse)
Irritation of skin	Irritation	500 mg/24h (rabbit)
Irritation of eyes	Irritation	100 mg/24h (rabbit)
	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 (hmn)
	Subcutaneous LD50	3 g/kg (mouse)

#### · Primary irritant effect:

• on the skin: No irritant effect.

· on the eye: No irritating effect.

• Sensitization: No sensitizing effects known.

• Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

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

#### · Carcinogenic categories

IARC (International Agency for Research on Cancer)
 None of the ingredients is listed.
 NTP (National Toxicology Program)
 None of the ingredients is listed.
 OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

## **12** Ecological information

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

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

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

- Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- Other adverse effects No further relevant information available.

(Contd. on page 7)

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: Immunoassay Buffer D Concentration (5X)

(Contd. from page 6)

## **13 Disposal considerations**

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

## 14 Transport information

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

## **15 Regulatory information**

 $^{\rm \cdot}$  Safety, health and environmental regulations/legislation specific for the substance or mixture  $^{\rm \cdot}$  Sara

· Section 355 (extremely hazardous substances):			
None of the ingredients is listed.			
· Section 313	· Section 313 (Specific toxic chemical listings):		
None of the	None of the ingredients is listed.		
· TSCA (Toxi	c Substances Control Act):		
7732-18-5	Water	ACTIVE	
7647-14-5	Sodium chloride	ACTIVE	
7758-11-4	Potassium phosphate, dibasic	ACTIVE	
9048-46-8	Albumin, bovine	ACTIVE	
	Potassium phosphate, Monobasic	ACTIVE	
2682-20-4	2-Methyl-4-isothiazolin-3-one	ACTIVE	
26172-55-4	26172-55-4 5-Chloro-2-methyl-4-isothiazolin-3-one ACTIVE		
	(Conto	d. on page 8)	

Printing date 05/03/2020

Revision date 05/03/2020

#### Trade name: Immunoassay Buffer D Concentration (5X)

(Contd. from page 7)

None of the ingredients is listed.

· Hazardous Air Pollutants

#### · Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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

None of the ingredients is listed.

· GHS label elements None

· Hazard pictograms None

Signal word None

· Hazard statements None

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

## **16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Environment protection department.

Contact: -

- Date of preparation / last revision 05/03/2020 / -
- Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

IMDG: International Maritime Code for Dangerous DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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, ÉU)

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



Printing date 10/15/2021

Revision date 10/15/2021

Page 1/11

### **1** Identification

- · Product identifier
- · Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent
- Article number: 502181
- Application of the substance / the mixture This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.
- 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
GHS0	8 Health hazard
STOT RE 2	H373 May cause damage to organs through prolonged or repeated exposure.
GHS0	5 Corrosion
Eye Dam. 1	H318 Causes serious eye damage.
С С С Н SO	7
$\sim$	
Acute Tox. 4	H302 Harmful if swallowed.
Skin Irrit. 2	H315 Causes skin irritation.
Skin Sens. 1	H317 May cause an allergic skin reaction.
STOT SE 3	H335 May cause respiratory irritation.
	(Contd. on page 2)

Printing date 10/15/2021

Revision date 10/15/2021

## Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

	(Contd.	from page 1)
Aquatic Acute 3	H402 Harmful to aquatic life.	
	3 H412 Harmful to aquatic life with long lasting effects.	
• Label elements • GHS label eleme The product is cla • Hazard pictogra	<b>ents</b> lassified and labeled according to the Globally Harmonized System (GHS).	
GHS05 GHS07	07 GHS08	
· Signal word Dar	nger	
	ning components of labeling:	
Potassium phosp		
Sodium chloride		
Methylchloroisoth	hiazolinone	
Albumin, bovine Methylisothiazolir	nono	
· Hazard stateme		
H302 Harmful if s		
H315 Causes ski		
	erious eye damage.	
	e an allergic skin reaction.	
	e respiratory irritation.	
	e damage to organs through prolonged or repeated exposure.	
H402 Harmful to		
H412 Harmful to	aquatic life with long lasting effects.	
• Precautionary s	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.	
P272	Contaminated work clothing must not be allowed out of the workplace.	
P273	Avoid release to the environment.	
P280	Wear protective gloves / eye protection / face protection.	
P301+P312 P302+P352	If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water.	
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breath	ina
	38 If in eyes: Rinse cautiously with water for several minutes. Remove contact	
1000110011100	present and easy to do. Continue rinsing.	x 1011303, 11
P310	Immediately call a poison center/doctor.	
P321	Specific treatment (see on this label).	
P314	Get medical advice/attention if you feel unwell.	
P330	Rinse mouth.	
P362+P364	Take off contaminated clothing and wash it before reuse.	
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.	
P363	Wash contaminated clothing before reuse.	
P403+P233	Store in a well-ventilated place. Keep container tightly closed.	
P405	Store locked up.	1
P501	Dispose of contents/container in accordance with local/regional/national/in	ternational
	regulations.	d. on page 3)
	(Com	.u. on page 3)

Printing date 10/15/2021

Revision date 10/15/2021

(Contd. from page 2)

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

· Classification system:

• NFPA ratings (scale 0 - 4)

300

Health = 3 Fire = 0 Reactivity = 0

#### · HMIS-ratings (scale 0 - 4)

HEALTH\*3Health = \*3FIRE0Fire = 0REACTIVITY0Reactivity = 0

#### · Other hazards

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- vPvB: Not applicable.

### **3 Composition/information on ingredients**

· Chemical characterization: Mixtures

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

· Dangerous components:			
CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	45.718%	
CAS: 7758-11-4 RTECS: TC5580000	Potassium phosphate dibasic	25.79%	
CAS: 9048-46-8 RTECS: AY9296000	Albumin, bovine	21.492%	
CAS: 7778-77-0 RTECS: TC6615500	Potassium phosphate, Monobasic	6.251%	
CAS: 26172-55-4 RTECS: NX8156850	Methylchloroisothiazolinone	0.004%	
	Methylisothiazolinone	≥0.0015–<0.025%	
· Other ingredients			
194491-31-1 EDTA, tetrasodium salt hydrate		0.742%	
Recombinant SARS-CoV-2 Spike Protein		0.001%	

· 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.

(Contd. on page 4)

ÚS -

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

#### • After inhalation:

Supply fresh air and to be sure call for a 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: Immediately call a doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed
- May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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. Wear protective equipment. Keep unprotected persons away.
   Environmental precautions: Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.
   Methods and material for containment and cleaning up: Use neutralizing agent. Dispose contaminated material as waste according to item 13.
- Ensure adequate ventilation.
  Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

· PAC-1:		
7758-11-4	Potassium phosphate dibasic	13 mg/m³
7778-77-0	Potassium phosphate, Monobasic	9.6 mg/m <sup>3</sup>
26172-55-4	Methylchloroisothiazolinone	0.6 mg/m <sup>3</sup>
· PAC-2:		
	Potassium phosphate dibasic	140 mg/m³
7778-77-0	Potassium phosphate, Monobasic	110 mg/m³
		(Contd. on page 5)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

		(Contd. from page 4)
26172-55-4	Methylchloroisothiazolinone	6.6 mg/m <sup>3</sup>
PAC-3:		
7758-11-4	Potassium phosphate dibasic	830 mg/m³
	Potassium phosphate, Monobasic	630 mg/m³
26172-55-4	Methylchloroisothiazolinone	40 mg/m <sup>3</sup>

### 7 Handling and storage

#### · Handling:

#### · Precautions for safe handling

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- Personal protective equipment:
- General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately.
- Avoid contact with the 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. (Contd. on page 6)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

(Contd. from page 5) Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

### • Material of gloves

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

#### Penetration time of glove material

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

#### • Eye protection:



Tightly sealed goggles

#### **9** Physical and chemical properties Information on basic physical and chemical properties · General Information · Appearance: Form: lyophilized Color: Not determined. · Odor: Characteristic · Odor threshold: Not determined. · pH-value: Not applicable. · Change in condition Melting point/Melting range: Undetermined. **Boiling point/Boiling range:** Undetermined. · Flash point: Not applicable. · Flammability (solid, gaseous): Not determined. Decomposition temperature: Not determined. · Auto igniting: Product is not selfigniting. Danger of explosion: Product does not present an explosion hazard. · Explosion limits: Not determined. Lower: Upper: Not determined. · Vapor pressure: Not applicable. · Densitv: Not determined. · Relative density Not determined. · Vapor density Not applicable. · Evaporation rate Not applicable. (Contd. on page 7)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

		Contd. from page 6)
<ul> <li>Solubility in / Miscibility with Water:</li> </ul>	Soluble.	
· Partition coefficient (n-octanol/w	vater): Not determined.	
· Viscosity:		
Dynamic:	Not applicable.	
Kinematic:	Not applicable.	
· Solvent content:		
VOC content:	0.00 %	
Solids content:	100.0 %	
· Other information	No further relevant information available.	

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

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

## 11 Toxicological information

- · Information on toxicological effects
- Acute toxicity:

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

Oral	LD50	1,057 mg/kg	
7647-14-5 Sodiu	um chloride		
Oral	LDLO	1,000 mg/kg (man)	
	TDLO	650 ml/kg (man)	
	LD50	4,000 mg/kg (mouse)	
		3,000 mg/kg (rat)	
	LD50	4 g/kg (mouse)	
Inhalative	LC50	320 mg/m³ (mouse)	
	TCLO	0.63 mg/m³ (hmn)	
	LCLO	29,300 mg/m³/7h (mouse)	
Irritation of skin	Irritation	500 mg/24h (rabbit)	
Irritation of eyes	Irritation	100 mg/24h (rabbit)	
	Intraperitoneal LD50	2,602 mg/kg (mouse)	
	Subcutaneous LD50	31.6 mg/kg (rat)	
	Intravenous LD50	59.5 mg/kg (rat)	

- US

Printing date 10/15/2021

Revision date 10/15/2021

### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

		(Contd. from page 7)
	Data	15 mg/3D (hmn)
	Subcutaneous LD50	3 g/kg (mouse)
9048-46-8 Albu	min, bovine	
	Intraperitoneal TDLO	0.2 pph (mouse)
7778-77-0 Pota	ssium phosphate, Mo	nobasic
Oral	LDLO	4,640 mg/kg (rat)
<ul> <li>on the eye: Str</li> <li>Sensitization:</li> <li>Additional toxi</li> <li>The product sh preparations: Harmful Irritant</li> <li>Carcinogenic of</li> <li>IARC (Internati</li> <li>None of the ing</li> <li>NTP (National</li> <li>None of the ing</li> <li>OSHA-Ca (Occ</li> </ul>	itant to skin and mucou ong irritant with the dan Sensitization possible th <b>cological information</b> lows the following dan	ger of severe eye injury. hrough skin contact. gers according to internally approved calculation methods fo <b>arch on Cancer</b> )
2 Ecological i	nformation	
<ul> <li>Toxicity</li> <li>Aquatic toxicit</li> </ul>	<b>y:</b> No further relevant in	nformation available.
		ther relevant information available.
· Behavior in en	vironmental systems:	
		relevant information available.
• Mobility in soil No further relevant information available.		
· Ecotoxical effects: · Remark: Harmful to fish		
· Additional ecological information:		
· General notes:		
Water hazard class 2 (Self-assessment): hazardous for water		
		, vater, water course or sewage system.
	bodies of water or drain	
Must not reach bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even small quantities leak into the ground.		
		quantities leak into the ground.
Harmful to aqua		· · ·

- Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- Other adverse effects No further relevant information available.

(Contd. on page 9)

US

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

(Contd. from page 8)

### **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	
<ul> <li>· UN proper shipping name</li> <li>· DOT, IMDG, IATA</li> </ul>	not regulated	
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
<ul> <li>Packing group</li> <li>DOT, IMDG, IATA</li> </ul>	not regulated	
· Environmental hazards:	Not applicable.	
<ul> <li>Special precautions for user</li> </ul>	Not applicable.	
<ul> <li>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</li> <li>Not applicable.</li> </ul>		
· 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	· Section 355 (extremely hazardous substances):		
None of the	None of the ingredients is listed.		
· Section 313	(Specific toxic chemical listings):		
None of the	ngredients is listed.		
· TSCA (Toxi	c Substances Control Act):		
7647-14-5	Sodium chloride	ACTIVE	
7758-11-4	Potassium phosphate dibasic	ACTIVE	
9048-46-8	Albumin, bovine	ACTIVE	
7778-77-0	Potassium phosphate, Monobasic	ACTIVE	
26172-55-4	Methylchloroisothiazolinone	ACTIVE	
	Methylisothiazolinone	ACTIVE	
	(Cc	ontd. on page 10)	

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

(Contd. from page 9)

• Hazardous Air Pollutants None of the ingredients is listed.

#### Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value)

None of the ingredients is listed.

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

None of the ingredients is listed.

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

### **16 Other information**

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

· Department issuing SDS: Environment protection department.

- Contact: -
- · Date of preparation / last revision 10/15/2021 / -
- 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

(Contd. on page 11)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: SARS-CoV-2 B.1.1.7 Spike Reagent

(Contd. from page 10)

Acute Tox. 4: Acute toxicity – Category 4 Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Dam. 1: Serious eye damage/eye irritation – Category 1 Skin Sens. 1: Skin sensitisation – Category 1 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 STOT RE 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

US



Printing date 10/15/2021

Revision date 10/15/2021

Page 1/11

### **1** Identification

- · Product identifier
- · Trade name: ACE2-HRP Conjugate
- Article number: 502182
- Application of the substance / the mixture This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.
- 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	· Classification of the substance or mixture		
сны	8 Health hazard		
STOT RE 2	H373 May cause damage to organs through prolonged or repeated exposure.		
GHSC	5 Corrosion		
Eye Dam. 1	H318 Causes serious eye damage.		
GHSC	7		
Acute Tox. 4	H302 Harmful if swallowed.		
Skin Irrit. 2	H315 Causes skin irritation.		
Skin Sens. 1	H317 May cause an allergic skin reaction.		
STOT SE 3	H335 May cause respiratory irritation.		
	(Contd. on page 2)		

US

Printing date 10/15/2021

Revision date 10/15/2021

## Trade name: ACE2-HRP Conjugate

	(Contd. from page 1)
Aquatic Acute 3	H402 Harmful to aquatic life.
•	3 H412 Harmful to aquatic life with long lasting effects.
Label elements	
· GHS label eleme	
	assified and labeled according to the Globally Harmonized System (GHS).
Hazard pictogra	IIIS
GHS05 GHS07	7 GHS08
· Signal word Dar	nger
• Hazard-determine	ning components of labeling:
Potassium phosp	
Sodium chloride	
Methylchloroisoth	niazolinone
Albumin, bovine	
Methylisothiazolir	
<ul> <li>Hazard statement</li> <li>H302 Harmful if s</li> </ul>	
H315 Causes ski	
	rious eye damage.
	an allergic skin reaction.
	respiratory irritation.
	damage to organs through prolonged or repeated exposure.
H402 Harmful to	
	aquatic life with long lasting effects.
· Precautionary s	
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264 P270	Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
P270 P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves / eye protection / face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P302+P352	If on skin: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P33	8 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if
D210	present and easy to do. Continue rinsing.
P310 P321	Immediately call a poison center/doctor. Specific treatment (see on this label).
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P362+P364	Take off contaminated clothing and wash it before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
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. (Contd. on page 3)

Printing date 10/15/2021

Revision date 10/15/2021

(Contd. from page 2)

#### Trade name: ACE2-HRP Conjugate

Classification system:

· NFPA ratings (scale 0 - 4)

300 F

Health = 3 Fire = 0 Reactivity = 0

### · HMIS-ratings (scale 0 - 4)

HEALTH\*3Health = \*3FIRE0Fire = 0REACTIVITY0Reactivity = 0

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

## **3 Composition/information on ingredients**

· Chemical characterization: Mixtures

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

<ul> <li>Dangerous competition</li> </ul>	onents:	
CAS: 7647-14-5 RTECS: VZ472500	Sodium chloride 0	45.718%
CAS: 7758-11-4 RTECS: TC558000	Potassium phosphate dibasic	25.79%
CAS: 9048-46-8 RTECS: AY929600	Albumin, bovine 0	21.492%
CAS: 7778-77-0 RTECS: TC661550	Potassium phosphate, Monobasic	6.251%
CAS: 26172-55-4 RTECS: NX815685	Methylchloroisothiazolinone	0.004%
	Methylisothiazolinone	≥0.0015–<0.025%
· Other ingredients		
194491-31-1 EDT	A, tetrasodium salt hydrate	0.742%
ACE	2-HRP	0.001%

· 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.

(Contd. on page 4)

US

Printing date 10/15/2021

#### Revision date 10/15/2021

#### Trade name: ACE2-HRP Conjugate

#### · After inhalation:

Supply fresh air and to be sure call for a 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: Immediately call a doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed
- May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
 Wear protective equipment. Keep unprotected persons away.
 Environmental precautions: Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.
 Methods and material for containment and cleaning up: Use neutralizing agent. Dispose contaminated material as waste according to item 13

Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

- Reference to other sections
   See Section 7 for information on safe handling.
   See Section 8 for information on personal protection equipment.
   See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

· PAC-1:		
7758-11-4	Potassium phosphate dibasic	13 mg/m³
7778-77-0	Potassium phosphate, Monobasic	9.6 mg/m <sup>3</sup>
26172-55-4	Methylchloroisothiazolinone	0.6 mg/m <sup>3</sup>
PAC-2:		
	Potassium phosphate dibasic	140 mg/m³
7778-77-0	Potassium phosphate, Monobasic	110 mg/m³
		(Contd. on page 5

Printing date 10/15/2021

Revision date 10/15/2021

Trade name: ACE2-HRP Conjugate

26172-55-4	Methylchloroisothiazolinone	(Contd. from page 4) 6.6 mg/m <sup>3</sup>
· PAC-3:		
7758-11-4	Potassium phosphate dibasic	830 mg/m³
7778-77-0	Potassium phosphate, Monobasic	630 mg/m³
26172-55-4	Methylchloroisothiazolinone	40 mg/m <sup>3</sup>

## 7 Handling and storage

- · Handling:
- · Precautions for safe handling
- Thorough dedusting.
- Ensure good ventilation/exhaustion at the workplace.
- Information about protection against explosions and fires:
- Keep respiratory protective device available.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the 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. (Contd. on page 6)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: ACE2-HRP Conjugate

(Contd. from page 5) Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

### • Material of gloves

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

#### Penetration time of glove material

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

#### • Eye protection:



Tightly sealed goggles

#### **9** Physical and chemical properties Information on basic physical and chemical properties · General Information · Appearance: Form: lyophilized Color: Not determined. · Odor: Characteristic · Odor threshold: Not determined. · pH-value: Not applicable. · Change in condition Melting point/Melting range: Undetermined. **Boiling point/Boiling range:** Undetermined. · Flash point: Not applicable. · Flammability (solid, gaseous): Not determined. Decomposition temperature: Not determined. · Auto igniting: Product is not selfigniting. Danger of explosion: Product does not present an explosion hazard. · Explosion limits: Not determined. Lower: Upper: Not determined. · Vapor pressure: Not applicable. · Densitv: Not determined. · Relative density Not determined. · Vapor density Not applicable. · Evaporation rate Not applicable. (Contd. on page 7)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: ACE2-HRP Conjugate

	(Contd. from p	bage 6)
<ul> <li>Solubility in / Miscibility with Water:</li> </ul>	Soluble.	
· Partition coefficient (n-octanol/wa	ater): Not determined.	
· Viscosity:		
Dynamic:	Not applicable.	
Kinematic:	Not applicable.	
· Solvent content:		
VOC content:	0.00 %	
Solids content:	100.0 %	
· Other information	No further relevant information available.	

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

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

## **11 Toxicological information**

- · Information on toxicological effects
- Acute toxicity:

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

Oral	LD50	1,057 mg/kg	
7647-14-5 Sodiu	um chloride		
Oral	LDLO	1,000 mg/kg (man)	
	TDLO	650 ml/kg (man)	
	LD50	4,000 mg/kg (mouse)	
		3,000 mg/kg (rat)	
	LD50	4 g/kg (mouse)	
Inhalative	LC50	320 mg/m³ (mouse)	
	TCLO	0.63 mg/m³ (hmn)	
	LCLO	29,300 mg/m³/7h (mouse)	
Irritation of skin	Irritation	500 mg/24h (rabbit)	
Irritation of eyes	Irritation	100 mg/24h (rabbit)	
	Intraperitoneal LD50	2,602 mg/kg (mouse)	
	Subcutaneous LD50	31.6 mg/kg (rat)	
	Intravenous LD50	59.5 mg/kg (rat)	

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Printing date 10/15/2021

Revision date 10/15/2021

Trade name: ACE2-HRP Conjugate

	-	(Contd. from page
	Data	15 mg/3D (hmn)
	Subcutaneous LD50	3 g/kg (mouse)
9048-46-8 Albu		
	Intraperitoneal TDLO	
	ssium phosphate, Mo	
Oral • Primary irritant	LDLO	4,640 mg/kg (rat)
<ul> <li>Sensitization: S</li> <li>Additional toxic</li> <li>The product sh preparations:</li> <li>Harmful</li> <li>Irritant</li> <li>Carcinogenic c</li> </ul>	Sensitization possible the cological information ows the following dam ategories onal Agency for Rese	: ngers according to internally approved calculation methods f
<b>U</b>	oxicology Program)	
None of the ingr	edients is listed.	
· OSHA-Ca (Occi	upational Safety & He	ealth Administration)
None of the ingr	edients is listed.	
2 Ecological ir	formation	
<ul> <li>Persistence and</li> <li>Behavior in environmentation</li> <li>Bioaccumulation</li> <li>Bioaccumulation</li> <li>Bioaccumulation</li> <li>Bioaccumulation</li> <li>Mobility in soil</li> <li>Ecotoxical effect</li> <li>Remark: Harmfet</li> <li>Additional ecol</li> <li>General notes:</li> <li>Water hazard cla</li> <li>Do not allow product of the second sec</li></ul>	vironmental systems: ve potential No further No further relevant info cts: ul to fish ogical information: ass 2 (Self-assessmen duct to reach ground w bodies of water or drair ng water if even small tic organisms and vPvB assessme	rther relevant information available. r relevant information available. ormation available. ht): hazardous for water vater, water course or sewage system. hage ditch undiluted or unneutralized. quantities leak into the ground.
<ul> <li>• PBT: Not application</li> <li>• vPvB: Not applied</li> </ul>		
vPvB: Not applicable.		

• Other adverse effects No further relevant information available.

(Contd. on page 9)

US

Printing date 10/15/2021

Revision date 10/15/2021

### Trade name: ACE2-HRP Conjugate

(Contd. from page 8)

## **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.

4.4.		· · · · · · · · · · · · · · · · · · ·	
14 Trans	bort in	normal	Ion
i i i ano		onnac	

r i manoport information	
· UN-Number · DOT, IMDG, IATA	not regulated
<ul> <li>· UN proper shipping name</li> <li>· DOT, IMDG, IATA</li> </ul>	not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA · Class	not regulated
<ul> <li>Packing group</li> <li>DOT, IMDG, IATA</li> </ul>	not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
<ul> <li>Transport in bulk according to Annex II o MARPOL73/78 and the IBC Code</li> </ul>	of 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	ngredients is listed.	
· Section 313	(Specific toxic chemical listings):	
None of the	ngredients is listed.	
· TSCA (Toxi	c Substances Control Act):	
7647-14-5	Sodium chloride	ACTIVE
7758-11-4	Potassium phosphate dibasic	ACTIVE
9048-46-8	Albumin, bovine	ACTIVE
7778-77-0	Potassium phosphate, Monobasic	ACTIVE
26172-55-4	Methylchloroisothiazolinone	ACTIVE
	Methylisothiazolinone	ACTIVE
	(Cc	ontd. on page 10)

Printing date 10/15/2021

Revision date 10/15/2021

Trade name: ACE2-HRP Conjugate

(Contd. from page 9)

• Hazardous Air Pollutants None of the ingredients is listed.

#### Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value)

None of the ingredients is listed.

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

None of the ingredients is listed.

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

### **16 Other information**

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

· Department issuing SDS: Environment protection department.

- · Contact: -
- · Date of preparation / last revision 10/15/2021 / -
- 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** 

(Contd. on page 11)

Printing date 10/15/2021

Revision date 10/15/2021

#### Trade name: ACE2-HRP Conjugate

(Contd. from page 10)

Acute Tox. 4: Acute toxicity – Category 4 Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Dam. 1: Serious eye damage/eye irritation – Category 1 Skin Sens. 1: Skin sensitisation – Category 1 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 STOT RE 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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Printing date 10/08/2021

Revision date 10/08/2021

Page 1/11

### **1** Identification

- · Product identifier
- · Trade name: SARS-CoV-2 Neutralizing Antibody Standard
- Article number: 502223
- Application of the substance / the mixture This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.
- 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		
GHS0	8 Health hazard	
STOT RE 2	H373 May cause damage to organs through prolonged or repeated exposure.	
GHS0	5 Corrosion	
Eye Dam. 1	H318 Causes serious eye damage.	
GHS0	7	
Acute Tox. 4	H302 Harmful if swallowed.	
Skin Irrit. 2	H315 Causes skin irritation.	
Skin Sens. 1	H317 May cause an allergic skin reaction.	
STOT SE 3	H335 May cause respiratory irritation.	
	(Contd. on page 2)	

US

### Safety Data Sheet acc. to OSHA HCS

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard (Contd. from page 1) 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). · Hazard pictograms GHS05 GHS07 GHS08 · Signal word Danger · Hazard-determining components of labeling: Potassium phosphate dibasic Sodium chloride Methylchloroisothiazolinone Albumin, bovine Methylisothiazolinone · Hazard statements H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation. H373 May cause damage to organs through prolonged or repeated exposure. H402 Harmful to aquatic life. 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. Use only outdoors or in a well-ventilated area. P271 Contaminated work clothing must not be allowed out of the workplace. P272 P273 Avoid release to the environment. P280 Wear protective gloves / eye protection / face protection. If swallowed: Call a poison center/doctor if you feel unwell. P301+P312 If on skin: Wash with plenty of water. P302+P352 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. Immediately call a poison center/doctor. P310 P321 Specific treatment (see on this label). P314 Get medical advice/attention if you feel unwell. P330 Rinse mouth. P362+P364 Take off contaminated clothing and wash it before reuse. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. P363 Store in a well-ventilated place. Keep container tightly closed. P403+P233 Store locked up. P405 Dispose of contents/container in accordance with local/regional/national/international P501 regulations. (Contd. on page 3)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

(Contd. from page 2)





Health = 3 Fire = 0 Reactivity = 0

#### · HMIS-ratings (scale 0 - 4)

HEALTH\*3Health = \*3FIRE0Fire = 0REACTIVITY0Reactivity = 0

#### · Other hazards

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- vPvB: Not applicable.

### **3 Composition/information on ingredients**

· Chemical characterization: Mixtures

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

<sup>·</sup> Dangerous components:			
CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	45.7%	
CAS: 7758-11-4 RTECS: TC5580000	Potassium phosphate dibasic	25.79%	
CAS: 9048-46-8 RTECS: AY9296000	Albumin, bovine	21.491%	
CAS: 7778-77-0 RTECS: TC6615500	Potassium phosphate, Monobasic	6.251%	
CAS: 26172-55-4 RTECS: NX8156850	Methylchloroisothiazolinone	0.004%	
	Methylisothiazolinone	≥0.0015–<0.025%	
· Other ingredients			
194491-31-1 EDTA,	tetrasodium salt hydrate	0.742%	
Anti-SA	Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1 0.02%		

#### 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.

(Contd. on page 4)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

#### · After inhalation:

Supply fresh air and to be sure call for a 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: Immediately call a doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed
- May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
   Wear protective equipment. Keep unprotected persons away.
   Environmental precautions: Do not allow product to reach sewage system or any water course.
   Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.
   Methods and material for containment and cleaning up: Use neutralizing agent. Dispose contaminated material as waste according to item 13.
- Ensure adequate ventilation.
- Reference to other sections
   See Section 7 for information on safe handling.
   See Section 8 for information on personal protection equipment.
   See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

· PAC-1:			
7758-11-4	Potassium phosphate dibasic	13 mg/m³	
7778-77-0	Potassium phosphate, Monobasic	9.6 mg/m³	
26172-55-4	Methylchloroisothiazolinone	0.6 mg/m <sup>3</sup>	
· PAC-2:	· PAC-2:		
7758-11-4	Potassium phosphate dibasic	140 mg/m³	
7778-77-0	Potassium phosphate, Monobasic	110 mg/m³	
		(Contd. on page 5)	

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

26172-55-4	Methylchloroisothiazolinone	(Contd. from page 4) 6.6 mg/m <sup>3</sup>
· PAC-3:		
7758-11-4	Potassium phosphate dibasic	830 mg/m³
7778-77-0	Potassium phosphate, Monobasic	630 mg/m³
26172-55-4	Methylchloroisothiazolinone	40 mg/m <sup>3</sup>

## 7 Handling and storage

#### · Handling:

#### · Precautions for safe handling

Thorough dedusting.

- Ensure good ventilation/exhaustion at the workplace.
- Information about protection against explosions and fires:

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the 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. (Contd. on page 6)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

(Contd. from page 5) 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

Information on basic physical and General Information	chemical properties
Appearance:	
Form:	Lyophilized powder
Color:	Not determined.
Odor:	Characteristic
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not determined.
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not applicable.
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

	(Contd. fro	m page 6)
<ul> <li>Solubility in / Miscibility with Water:</li> </ul>	Soluble.	
· Partition coefficient (n-octanol/	/water): Not determined.	
· Viscosity: Dynamic: Kinematic:	Not applicable. Not applicable.	
<ul> <li>Solvent content: VOC content:</li> </ul>	0.00 %	
Solids content:	100.0 %	
• Other information	No further relevant information available.	

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

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

## 11 Toxicological information

- · Information on toxicological effects
- Acute toxicity:

· LD/LC50 values that	re relevant for	classification:
-----------------------	-----------------	-----------------

Oral	LD50	1,058 mg/kg	
7647-14-5 Sodiu	um chloride		
Oral	LDLO	1,000 mg/kg (man)	
	TDLO	650 ml/kg (man)	
	LD50	4,000 mg/kg (mouse)	
		3,000 mg/kg (rat)	
	LD50	4 g/kg (mouse)	
Inhalative	LC50	320 mg/m³ (mouse)	
	TCLO	0.63 mg/m³ (hmn)	
	LCLO	29,300 mg/m³/7h (mouse)	
Irritation of skin	Irritation	500 mg/24h (rabbit)	
Irritation of eyes	Irritation	100 mg/24h (rabbit)	
	Intraperitoneal LD50	2,602 mg/kg (mouse)	
	Subcutaneous LD50	31.6 mg/kg (rat)	
	Intravenous LD50	59.5 mg/kg (rat)	

- US

Printing date 10/08/2021

Revision date 10/08/2021

### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

		(Contd. from page 7)
	Data	15 mg/3D (hmn)
	Subcutaneous LD50	3 g/kg (mouse)
9048-46-8 Alt	bumin, bovine	
	Intraperitoneal TDLO	0.2 pph (mouse)
7778-77-0 Po	tassium phosphate, Mo	nobasic
Oral	LDLO	4,640 mg/kg (rat)
• on the eye: S • Sensitization • Additional to	-	ger of severe eye injury. nrough skin contact.
-	ational Agency for Rese	arch on Cancer)
	igredients is listed.	
	<u> </u>	
•	al Toxicology Program) ngredients is listed.	
	<u> </u>	
•	ccupational Safety & He	alth Administration)
None of the in	ngredients is listed.	
2 Ecological	information	
Persistence a Behavior in e Bioaccumula Mobility in so Ecotoxical ef Remark: Han Additional ec General note	environmental systems: ative potential No further oil No further relevant info ffects: mful to fish cological information:	ther relevant information available. relevant information available. ormation available.
		i): nazardous for water /ater, water course or sewage system.
Do not allow p		aler, water ourse of sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even small quantities leak into the ground. Harmful to aquatic organisms

- Results of PBT and vPvB assessment
- · PBT: Not applicable.
- **vPvB:** Not applicable.
- Other adverse effects No further relevant information available.

(Contd. on page 9)

US

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

(Contd. from page 8)

## **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**

14 Hanopolt Information	
· UN-Number · DOT, IMDG, IATA	not regulated
<ul> <li>· UN proper shipping name</li> <li>· DOT, IMDG, IATA</li> </ul>	not regulated
<ul> <li>Transport hazard class(es)</li> </ul>	
· DOT, ADN, IMDG, IATA · Class	not regulated
<ul> <li>Packing group</li> <li>DOT, IMDG, IATA</li> </ul>	not regulated
· Environmental hazards:	Not applicable.
<ul> <li>Special precautions for user</li> </ul>	Not applicable.
<ul> <li>Transport in bulk according to Annex II o MARPOL73/78 and the IBC Code</li> </ul>	f 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 (Toxi	c Substances Control Act):	
7647-14-5	Sodium chloride	ACTIVE
7758-11-4	Potassium phosphate dibasic	ACTIVE
9048-46-8	Albumin, bovine	ACTIVE
7778-77-0	Potassium phosphate, Monobasic	ACTIVE
26172-55-4	Methylchloroisothiazolinone	ACTIVE
	Methylisothiazolinone	ACTIVE
		(Contd. on page 10)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

(Contd. from page 9)

• Hazardous Air Pollutants None of the ingredients is listed.

### Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

#### · Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value)

None of the ingredients is listed.

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

None of the ingredients is listed.

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

#### **16 Other information**

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

· Department issuing SDS: Environment protection department.

- Contact: -
- · Date of preparation / last revision 10/08/2021 / -
- 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

(Contd. on page 11)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Standard

(Contd. from page 10)

Acute Tox. 4: Acute toxicity – Category 4 Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Dam. 1: Serious eye damage/eye irritation – Category 1 Skin Sens. 1: Skin sensitisation – Category 1 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 STOT RE 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.

110



Printing date 10/08/2021

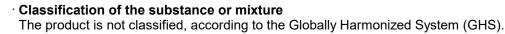
Revision date 10/08/2021

Page 1/7

#### **1** Identification

- · Product identifier
- · Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control
- · Article number: 502224
- **Application of the substance / the mixture** This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.
- 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



- · Label elements
- · GHS label elements None
- · Hazard pictograms None
- · Signal word None
- · Hazard statements None
- · Classification system:
- NFPA ratings (scale 0 4)



· HMIS-ratings (scale 0 - 4)



(Contd. on page 2)

Printing date 10/08/2021

Revision date 10/08/2021

(Contd. from page 1)

99.999%

0.001%

#### Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control

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

#### **3** Composition/information on ingredients

· Chemical characterization: Mixtures

- **Description:** Mixture of the substances listed below with nonhazardous additions.
- · Dangerous components: None
- · Other ingredients
- **Dilute Human Plasma**

Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1

## **4 First-aid measures**

- Description of first aid measures
- · General information: No special measures required.
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
- 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.

(Contd. on page 3)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control

(Contd. from page 2)

Protective Action Criteria for Chemicals

· PAC-1:

None of the ingredients is listed.

· PAC-2:

None of the ingredients is listed.

· PAC-3:

None of the ingredients is listed.

## 7 Handling and storage

- · Handling:
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

## 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures:
- The usual precautionary measures for handling chemicals should be followed.
- Breathing equipment: Not required.
- Protection of hands:

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

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

Material of gloves

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

Penetration time of glove material

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

(Contd. on page 4)

US

Printing date 10/08/2021

Revision date 10/08/2021

(Contd. from page 3)

## Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control

• Eye protection: Not required.

Information on basic physical and chemical properties         General Information         Appearance:         Form:       Lyophilized powder         Color:       Not determined.         Odor:       Characteristic         Odor threshold:       Not determined.         'pH-value:       Not applicable.         'Change in condition       Undetermined.         Meiting point/Boiling range:       Undetermined.         Boiling point/Boiling range:       Undetermined.         'Flash point:       Not applicable.         'Flash point:       Not determined.         'Decomposition temperature:       Not determined.         'Auto igniting:       Product is not selfigniting.         'Danger of explosion:       Product does not present an explosion hazard.         'Explosion limits:       Lower:         Lower:       Not determined.         'Vapor pressure:       Not determined.         'Vapor density       Not determined.         'Vapor density<	9 Physical and chemical prope	erties
Appearance:       Lyophilized powder         Form:       Lyophilized powder         Color:       Not determined.         Odor:       Characteristic         Odor threshold:       Not determined.         ' pH-value:       Not applicable.         ' Change in condition       Undetermined.         Melting point/Melting range:       Undetermined.         Boiling point/Boiling range:       Undetermined.         ' Flash point:       Not applicable.         ' Flash point:       Not determined.         ' Decomposition temperature:       Not determined.         ' Auto igniting:       Product is not selfigniting.         ' Danger of explosion:       Product does not present an explosion hazard.         ' Explosion limits:       Lower:         Lower:       Not determined.         ' Upper:       Not determined.         ' Vapor pressure:       Not determined.         ' Vapor pressure:       Not determined.         ' Vapor density       N		chemical properties
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Color:       Not determined.         Odor:       Characteristic         Odor threshold:       Not determined.         PH-value:       Not applicable.         Change in condition       Melting point/Melting range:       Undetermined.         Boiling point/Boiling range:       Undetermined.         Boiling point/Boiling range:       Undetermined.         Flash point:       Not applicable.         Flammability (solid, gaseous):       Not determined.         Decomposition temperature:       Not determined.         Obscinne:       Product is not selfigniting.         Danger of explosion:       Product does not present an explosion hazard.         Explosion limits:       Lower:         Lower:       Not determined.         Upper:       Not determined.         Vapor pressure:       Not determined.         Vapor pressure:       Not determined.         Vapor density       Not determined.         Vapor density       Not applicable.         Solubility in / Miscibility with       Not applicable.         Vapor density       Not applicable.         Solubility in / Miscibility with       Not applicable.         Viscosity:       Dynamic:         Dynamic:       Not applicable.	••	l vonhilized powder
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• pH-value:       Not applicable.         • Change in condition Melting point/Boiling range:       Undetermined.         Boiling point/Boiling range:       Undetermined.         • Flash point:       Not applicable.         • Flash point:       Not determined.         • Decomposition temperature:       Not determined.         • Decomposition temperature:       Not determined.         • Auto igniting:       Product is not selfigniting.         • Danger of explosion:       Product does not present an explosion hazard.         • Explosion limits:       Lower:         Lower:       Not determined.         • Upper:       Not determined.         • Vapor pressure:       Not applicable.         • Density:       Not determined.         • Vapor density       Not determined.         • Viscosity:       Soluble.         • Partition coefficient (n-octanol/water): Not determined.         • Viscosity:       Dynamic:       Not app	· Odor:	Characteristic
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Flammability (solid, gaseous):       Not determined.         Decomposition temperature:       Not determined.         Auto igniting:       Product is not selfigniting.         Danger of explosion:       Product does not present an explosion hazard.         Explosion limits:       Lower:         Lower:       Not determined.         Upper:       Not determined.         Vapor pressure:       Not determined.         Vapor pressure:       Not determined.         Pelative density       Not determined.         Vapor density       Not applicable.         Evaporation rate       Not applicable.         Solubility in / Miscibility with       Water:         Solubility in / Miscibility with       Soluble.         Viscosity:       Dynamic:         Dynamic:       Not applicable.         Viscosity:       Not applicable.         Solvent content:       0.00 %	Boiling point/Boiling range:	Undetermined.
• Decomposition temperature:       Not determined.         • Auto igniting:       Product is not selfigniting.         • Danger of explosion:       Product does not present an explosion hazard.         • Explosion limits:       Lower:         Lower:       Not determined.         Upper:       Not determined.         • Vapor pressure:       Not applicable.         • Density:       Not determined.         • Vapor density       Not determined.         • Vapor density       Not determined.         • Vapor density       Not applicable.         • Evaporation rate       Not applicable.         • Solubility in / Miscibility with       Water:         • Solubil:       Not determined.         • Viscosity:       Dynamic:         Dynamic:       Not applicable.         • Viscosity:       Dynamic:         Oynamic:       Not applicable.         • Solvent content:       Not applicable.	· Flash point:	Not applicable.
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Danger of explosion:       Product does not present an explosion hazard.         Explosion limits:       Lower:       Not determined.         Upper:       Not determined.         Vapor pressure:       Not applicable.         Density:       Not determined.         Relative density       Not determined.         Vapor density       Not applicable.         Evaporation rate       Not applicable.         Solubility in / Miscibility with       Soluble.         Viscosity:       Dynamic:         Dynamic:       Not applicable.         Kinematic:       Not applicable.         Solvent content:       0.00 %	· Decomposition temperature:	Not determined.
Explosion limits:       Not determined.         Lower:       Not determined.         Upper:       Not determined.         ' Vapor pressure:       Not applicable.         ' Density:       Not determined.         ' Relative density       Not determined.         ' Vapor density       Not determined.         ' Vapor density       Not applicable.         ' Evaporation rate       Not applicable.         ' Solubility in / Miscibility with       Soluble.         ' Partition coefficient (n-octanol/water): Not determined.       Viscosity:         Dynamic:       Not applicable.         Kinematic:       Not applicable.         ' Solvent content:       0.00 %	· Auto igniting:	Product is not selfigniting.
Lower:Not determined.Upper:Not determined.Vapor pressure:Not applicable.Density:Not determined.Relative densityNot determined.Vapor densityNot applicable.Evaporation rateNot applicable.Solubility in / Miscibility with Water:Soluble.Partition coefficient (n-octanol/water):Not determined.Viscosity: Dynamic: Kinematic:Not applicable.Solvent content: VOC content:0.00 %	<ul> <li>Danger of explosion:</li> </ul>	Product does not present an explosion hazard.
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· Evaporation rate       Not applicable.         · Solubility in / Miscibility with       Soluble.         · Water:       Soluble.         · Partition coefficient (n-octanol/water): Not determined.         · Viscosity:       Not applicable.         Dynamic:       Not applicable.         Kinematic:       Not applicable.         · Solvent content:       0.00 %		
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· Partition coefficient (n-octanol/water): Not determined.         · Viscosity:         Dynamic:       Not applicable.         Kinematic:       Not applicable.         · Solvent content:       0.00 %	•	
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Kinematic:     Not applicable.       Solvent content:     0.00 %		
Solvent content:     0.00 %		
<b>VOC content:</b> 0.00 %	Kinematic:	Not applicable.
• <b>Other information</b> No further relevant information available.	VOC content:	0.00 %
	· Other information	No further relevant information available.

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

(Contd. on page 5)

US -

Printing date 10/08/2021

Revision date 10/08/2021

(Contd. from page 4)

#### Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control

· Chemical stability

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

### **11 Toxicological information**

- · Information on toxicological effects
- · Acute toxicity:
- Primary irritant effect:
- on the skin: No irritant effect.
- · on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

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

#### · Carcinogenic categories

#### · IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

#### • NTP (National Toxicology Program)

None of the ingredients is listed.

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

None of the ingredients is listed.

## **12 Ecological information**

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

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

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

- Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- Other adverse effects No further relevant information available.

(Contd. on page 6)

Printing date 10/08/2021

Revision date 10/08/2021

## Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control

(Contd. from page 5)

(Contd. on page 7)

US

## **13 Disposal considerations**

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

## **14 Transport information**

not regulated
not regulated
not regulated
not regulated
Not applicable.
Not applicable.
of Not applicable.
not regulated

## **15 Regulatory information**

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

<ul> <li>Section 355 (extremely hazardous substances):</li> </ul>
None of the ingredients is listed.
· Section 313 (Specific toxic chemical listings):
None of the ingredients is listed.
· TSCA (Toxic Substances Control Act):
None of the ingredients is listed.
· Hazardous Air Pollutants
None of the ingredients is listed.
· Proposition 65
· Chemicals known to cause cancer:
None of the ingredients is listed.

Printing date 10/08/2021

Revision date 10/08/2021

Trade name: SARS-CoV-2 Neutralizing Antibody Positive Control

(Contd. from page 6)

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value)

None of the ingredients is listed.

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

None of the ingredients is listed.

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

#### **16 Other information**

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

- · Department issuing SDS: Environment protection department.
- · Contact: -
- · Date of preparation / last revision 10/08/2021 / -

• Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit

\* Data compared to the previous version altered.



Printing date 10/08/2021

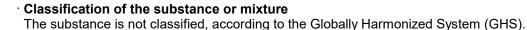
Revision date 10/08/2021

Page 1/7

#### **1** Identification

- · Product identifier
- · Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control
- Article number: 502225
- **Application of the substance / the mixture** This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.
- 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



- · Label elements
- · GHS label elements None
- · Hazard pictograms None
- · Signal word None
- · Hazard statements None
- · Classification system:
- NFPA ratings (scale 0 4)



· HMIS-ratings (scale 0 - 4)



(Contd. on page 2)

Printing date 10/08/2021

Revision date 10/08/2021

(Contd. from page 1)

#### Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control

· Other hazards

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

#### **3 Composition/information on ingredients**

- · Chemical characterization: Substances
- · CAS No. Description
- Dilute Human Plasma

#### 4 First-aid measures

- Description of first aid measures
- · General information: No special measures required.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- Information for doctor:
- **Most important symptoms and effects, both acute and delayed** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.
- $\cdot$  Methods and material for containment and cleaning up: Pick up mechanically.
- <sup>·</sup> Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

· PAC-1:

#### Substance is not listed.

(Contd. on page 3)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control

(Contd. from page 2)

- · PAC-2:
- Substance is not listed.
- · PAC-3:
- Substance is not listed.

## 7 Handling and storage

- · Handling:
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

#### 8 Exposure controls/personal protection

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

(Contd. on page 4)

Printing date 10/08/2021

#### Revision date 10/08/2021

### Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control

(Contd. from page 3)

9 Physical and chemical prope	erties
· Information on basic physical and	chemical properties
· General Information	
· Appearance:	
Form:	Lyophilized powder
Color:	Not determined.
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Product is not flammable.
· Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
• Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water:	Soluble.
· Partition coefficient (n-octanol/wat	ter): Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 %
Solids content:	100.0 %
· Other information	No further relevant information available.

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

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

(Contd. on page 5)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control

(Contd. from page 4)

· Hazardous decomposition products: No dangerous decomposition products known.

#### **11 Toxicological information**

- · Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
- on the skin: No irritant effect.
- · on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- · Additional toxicological information:

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.

· 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.

### **12 Ecological information**

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:
- Water hazard class 1 (Self-assessment): slightly hazardous for water

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

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

• Other adverse effects No further relevant information available.

### **13 Disposal considerations**

- · Waste treatment methods
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- · Uncleaned packagings:
- **Recommendation:** Disposal must be made according to official regulations.

(Contd. on page 6)

US

Printing date 10/08/2021

Revision date 10/08/2021

(Contd. from page 5)

#### Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control

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

4 Transport information		
· UN-Number · DOT, IMDG, IATA	not regulated	
<ul> <li>UN proper shipping name</li> <li>DOT, IMDG, IATA</li> </ul>	not regulated	
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	not regulated	
<ul> <li>Packing group</li> <li>DOT, IMDG, IATA</li> </ul>	not regulated	
· Environmental hazards:	Not applicable.	
· Special precautions for user	Not applicable.	
<ul> <li>Transport in bulk according to Anne MARPOL73/78 and the IBC Code</li> </ul>	ex II of 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.
- · Chemicals known to cause developmental toxicity:
- Substance is not listed.

(Contd. on page 7)

Printing date 10/08/2021

Revision date 10/08/2021

#### Trade name: SARS-CoV-2 Neutralizing Antibody Negative Control

(Contd. from page 6)

- 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 preparation / last revision 10/08/2021 / -
- 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.



Printing date 07/15/2021

Revision date 07/15/2021

Page 1/10

### **1 Identification**

- Product identifier
- Trade name: HRP Stop Solution
- · Article number: 10011355, 007104
- · Application of the substance / the mixture For research use only, not for human or veterinary use.

#### · Details of the supplier of the safety data sheet

Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108 USA

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

## 2 Hazard(s) identification

#### · Classification of the substance or mixture



**GHS05** Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

· Label elements

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



- · Signal word Danger
- · Hazard statements
- H314 Causes severe skin burns and eye damage.
- · Precautionary statements
- P260 Do not breathe dusts or mists.
- P264 Wash thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2) US

Printing date 07/15/2021

Revision date 07/15/2021

Trade name: HRP Stop Solution

<ul> <li>P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.</li> <li>P303+P361+P353 If on skin (or hair): Take off immediately all contaminated cloth water/shower.</li> <li>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable</li> <li>P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove present and easy to do. Continue rinsing.</li> <li>P310 Immediately call a poison center/doctor.</li> <li>P321 Specific treatment (see on this label).</li> <li>P363 Wash contaminated clothing before reuse.</li> <li>P405 Store locked up.</li> <li>P501 Dispose of contents/container in accordance with local/regional/regulations.</li> <li>Classification system:</li> <li>NFPA ratings (scale 0 - 4)</li> <li>Health = 3</li> <li>Fire = 0</li> <li>Reactivity = 0</li> <li>HMIS-ratings (scale 0 - 4)</li> <li>Health = 3</li> <li>Fire = 0</li> <li>Reactivity = 0</li> </ul>	(Contd. from page 1)
water/shower. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remo- present and easy to do. Continue rinsing. P310 Immediately call a poison center/doctor. P321 Specific treatment (see on this label). P363 Wash contaminated clothing before reuse. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/ regulations. Classification system: NFPA ratings (scale 0 - 4) Health = 3 Fire = 0 Reactivity = 0 HMIS-ratings (scale 0 - 4) HEALTH 3 Health = 3 Fire = 0 Fire = 0 Health = 3 Fire = 0 Fire = 0	
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remo present and easy to do. Continue rinsing. P310 Immediately call a poison center/doctor. P321 Specific treatment (see on this label). P363 Wash contaminated clothing before reuse. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/ regulations. Classification system: NFPA ratings (scale 0 - 4) Health = 3 Fire = 0 Reactivity = 0 HMIS-ratings (scale 0 - 4) Health = 3 Fire = 0 Health = 3 Fire = 0 Health = 3 Fire = 0	ng. Rinse skin with
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remo present and easy to do. Continue rinsing. P310 Immediately call a poison center/doctor. P321 Specific treatment (see on this label). P363 Wash contaminated clothing before reuse. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/ regulations. Classification system: NFPA ratings (scale 0 - 4) Health = 3 Fire = 0 Reactivity = 0 HMIS-ratings (scale 0 - 4) HEALTH 3 Health = 3 Fire = 0 Health = 3 Fire = 0	or breathing.
P310 Immediately call a poison center/doctor. P321 Specific treatment (see on this label). P363 Wash contaminated clothing before reuse. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/ regulations. • Classification system: • NFPA ratings (scale 0 - 4) Health = 3 Fire = 0 Reactivity = 0 • HMIS-ratings (scale 0 - 4) HEALTH 3 FIRE 0 Fire = 0 Fire = 0	
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<ul> <li>Classification system:</li> <li>NFPA ratings (scale 0 - 4)</li> <li>Health = 3 Fire = 0 Reactivity = 0</li> <li>HMIS-ratings (scale 0 - 4)</li> <li>HEALTH 3 FIRE 0 Fire = 0 Health = 3 Fire = 0</li> </ul>	ational/international
Health = 3 Fire = 0 Reactivity = 0 HMIS-ratings (scale 0 - 4) HEALTH 3 FIRE 0 Fire = 0 Health = 3 Fire = 0	
HEALTH I Health = 3 FIRE I Fire = 0	
FIRE $\bigcirc$ Fire = 0	
REACTIVITY Reactivity = 0	
· Other hazards	
Results of PBT and vPvB assessment	
· <b>PBT:</b> Not applicable.	
vPvB: Not applicable.	

· Chemical characterization: Mixtures

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

### · Dangerous components:

CAS: 7664-93-9 Sulfuric acid RTECS: WS5600000

#### · Other ingredients

CAS: 7732-18-5 Water RTECS: ZC0110000

#### **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. Then consult a doctor.
- After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.

(Contd. on page 3)

2.8%

97.2%

Printing date 07/15/2021

Revision date 07/15/2021

(Contd. from page 2)

#### Trade name: HRP Stop Solution

- Information for doctor:
   Most important symptoms and effects, both acute and delayed May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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

<ul> <li>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.         Methods and material for containment and cleaning up:         Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, saw         Use neutralizing agent.         Dispose contaminated material as waste according to item 13.         Ensure adequate ventilation.         Reference to other sections         See Section 7 for information on safe handling.         See Section 8 for information on personal protection equipment.         See Section 13 for disposal information.         Protective Action Criteria for Chemicals     </li> </ul>	/dust).
· PAC-1:	
7664-93-9 Sulfuric acid	0.20 mg/m <sup>3</sup>
PAC-2:	
7664-93-9 Sulfuric acid	8.7 mg/m <sup>3</sup>
· PAC-3:	
7664-93-9 Sulfuric acid	160 mg/m <sup>3</sup>

## 7 Handling and storage

- · Handling:
- Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.

(Contd. on page 4)

US -

Printing date 07/15/2021

Revision date 07/15/2021

(Contd. from page 3)

#### Trade name: HRP Stop Solution

• **Information about protection against explosions and fires:** Keep respiratory protective device available.

• Conditions for safe storage, including any incompatibilities Keep container tightly closed.

Store in accordance with information listed on the product insert.

- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.

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

### 8 Exposure controls/personal protection

• Additional information about design of technical systems: No further data; see item 7.

Control parameters

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

#### 7664-93-9 Sulfuric acid

PEL Long-term value: 1 mg/m<sup>3</sup>

- REL Long-term value: 1 mg/m<sup>3</sup>
- TLV Long-term value: 0.2\* mg/m<sup>3</sup>
  - \*as thoracic fraction, A2

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

#### · Exposure controls

- Personal protective equipment:
- General protective and hygienic measures:
- Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

• Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air. **Protection of hands:** 



Protective gloves

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

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

#### • Material of gloves

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

#### Penetration time of glove material

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

(Contd. on page 5)

Printing date 07/15/2021

Revision date 07/15/2021

(Contd. from page 4)

## Trade name: HRP Stop Solution

· Eye protection:



\*

Tightly sealed goggles

Physical and chemical prope	
Information on basic physical and	chemical properties
General Information	
Appearance:	
Form:	Liquid
Color:	Clear
Odor: Structural Formula	Characteristic H2 O
Molecular Weight	18 g/mol
Odor threshold:	Not determined.
Formulation	0.5 M H2SO4
pH-value:	Not determined.
•	
Change in condition Melting point/Melting range:	0 °C (32 °F)
Boiling point/Boiling range:	100 °C (212 °F)
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	i
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
Density at 20 °C (68 °F):	1.04119 g/cm³ (8.68873 lbs/gal)
Relative density Vapor density	Not determined. Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
	-
Partition coefficient (n-octanol/wat	er): Not determined.
Viscosity:	
Dynamic at 20 °C (68 °F):	0.952 mPas
Kinematic:	Not determined.
Solvent content:	
Water:	97.2 %

Printing date 07/15/2021

Revision date 07/15/2021

Trade name: HRP Stop Solution

		(Contd. from page 5)
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal	
Solids content:	0.0 %	
· Other information	No further relevant information available.	

## **10 Stability and reactivity**

· Reactivity No further relevant information available.

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

### **11 Toxicological information**

- · Information on toxicological effects
- Acute toxicity:

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

7664-93-9 Sulfu		
Oral	LD50	2,140 mg/kg (rat)
Inhalative	LC50	2,140 mg/kg (rat) 320 mg/m³ (mouse)
	TCLO	0.63 mg/m³ (hmn)
	TCLO	0.63 (hmn)
Irritation of eyes	Irritation	5 mg/30s (rabbit)

#### Primary irritant effect:

- on the skin: Strong caustic effect on skin and mucous membranes.
- · on the eye: Strong caustic effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:

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

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

#### · Carcinogenic categories

<ul> <li>IARC (International Agency for Research on Cancer)</li> </ul>	
7664-93-9 Sulfuric acid	1
· NTP (National Toxicology Program)	
7664-93-9 Sulfuric acid	K
· OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients is listed.	

(Contd. on page 7)

Printing date 07/15/2021

Revision date 07/15/2021

#### Trade name: HRP Stop Solution

(Contd. from page 6)

### **12 Ecological information**

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · **Bioaccumulative potential** No further relevant information available.
- Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:
- Not hazardous for water.

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

- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.
- Other adverse effects No further relevant information available.

### **13 Disposal considerations**

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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

#### **14 Transport information** · UN-Number · DOT, IMDG, IATA UN3264 · UN proper shipping name · DOT Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid) ·IMDG CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID) Corrosive liquid, acidic, inorganic, n.o.s. (SULPHURIC · IATA ACID) Transport hazard class(es) · DOT · Class 8 Corrosive substances (Contd. on page 8) US

Printing date 07/15/2021

Revision date 07/15/2021

Trade name: HRP Stop Solution

	(Contd. from page
Label	8
IMDG, IATA	
0	
Class	8 Corrosive substances
Label	8
Packing group	
DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Corrosive substances
Hazard identification number (Kemler cod	
EMS Number:	F-A,S-B
Segregation groups	Strong acids
Stowage Category	B SC26 Stow "apparented from" SCC18 olkelia
Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
Transport in bulk according to Annex II of	
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT	
Quantity limitations	On passenger aircraft/rail: 5 L
-	On cargo aircraft only: 60 L
IMDG	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
ΙΑΤΑ	
Remarks:	When sold in quantities of less than or equal to 1 m
	or 1 g, with an Excepted Quantity Code of
	E1, E2, E4, or E5, this item meets the De Minim
	Quantities exemption, per IATA 2.6.10.
	Therefore packaging does not have to be labeled a
	Dangerous Goods/Excepted Quantity.
UN "Model Regulation":	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANI
	N.O.S. (SULPHURIC ACID), 8, III

## **15 Regulatory information**

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

· Sara

· Section 355 (extremely hazardous substances):

7664-93-9 Sulfuric acid

(Contd. on page 9)

US -

Printing date 07/15/2021

Revision date 07/15/2021

Trade name: HRP Stop Solution

· Section 212 (Specific toxic chemical lictings):	(Contd. from page
Section 313 (Specific toxic chemical listings):     7664-93-9 Sulfuric acid	
• TSCA (Toxic Substances Control Act):	
All components have the value ACTIVE.	
· Hazardous Air Pollutants	
None of the ingredients is listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
· Carcinogenic categories	
· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	
· TLV (Threshold Limit Value)	
7664-93-9 Sulfuric acid	A
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	

### **16 Other information**

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

- · Department issuing SDS: Environment protection department.
- · Contact: -
- · Date of preparation / last revision 07/15/2021 / -
- 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

(Contd. on page 10)

Printing date 07/15/2021

Revision date 07/15/2021

#### Trade name: HRP Stop Solution

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 Corr. 1A: Skin corrosion/irritation – Category 1A

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

(Contd. from page 9)

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