

# SAFETY DATA SHEET

Lyophilized Standard

## Section 1. Identification

**Product identifier** : Lyophilized Standard  
**Product code** : Not available.  
**Other means of identification** : Not available.  
**Product type** : Powder.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Research.  
**Area of application** : Industrial applications.

**Manufacturer** : BioLegend Inc.  
 8999 BioLegend Way  
 San Diego, CA 92121 – USA  
 Tel: +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

**Supplier's details** : RSM Australia Pty Ltd – On Behalf of BioLegend, Inc.  
 Level 21, 55 Collins Street Melbourne VIC 3000  
 PO Box 248, Collins Street West VIC 8007  
 Phone: +61 (0) 3 9286 8040  
 Fax: +61 (0) 3 9286 8199

**e-mail address of person responsible for this SDS** : cs@biolegend.com

**Emergency telephone number (with hours of operation)** : +61 (0) 3 9286 8040 (24 hours)

## Section 2. Hazard(s) identification

**Classification of the substance or mixture** : H302 ACUTE TOXICITY (oral) - Category 4  
 H311 ACUTE TOXICITY (dermal) - Category 3  
 H331 ACUTE TOXICITY (inhalation) - Category 3  
 Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 49.5%  
 Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 56.4%

### GHS label elements

**Hazard pictograms** :



**Signal word** : DANGER

**Hazard statements** : H302 - Harmful if swallowed.  
 H311 + H331 - Toxic in contact with skin or if inhaled.

**Precautionary statements**

## Section 2. Hazard(s) identification

- Prevention** : P280 - Wear protective gloves and protective clothing.  
P261 - Avoid breathing dust or mist.  
P270 - Do not eat, drink or smoke when using this product.  
P264 - Wash thoroughly after handling.
- Response** : P304 + P340, P311 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor.  
P302 + P312, P352 - IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of soap and water.
- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.

**Other hazards which do not result in classification** : May form explosible dust-air mixture if dispersed.

## Section 3. Composition and ingredient information

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

| Ingredient name       | % (w/w)   | CAS number |
|-----------------------|-----------|------------|
| Albumins, blood serum | ≥30 - ≤60 | 9048-46-8  |
| sodium azide          | ≤5        | 26628-22-8 |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

## Section 4. First aid measures

**Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

**Inhalation** : Toxic if inhaled. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

**Skin contact** : Toxic in contact with skin.

**Ingestion** : Harmful if swallowed.

#### Over-exposure signs/symptoms

**Eye contact** : Adverse symptoms may include the following:  
irritation  
redness

**Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing

**Skin contact** : No specific data.

**Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical powder.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : May form explosible dust-air mixture if dispersed.

## Section 5. Firefighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide  
 nitrogen oxides  
 sulfur oxides  
 phosphorus oxides  
 halogenated compounds  
 metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Hazchem code** : 2X

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

**Small spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name | Exposure limits   |
|-----------------|---|
| sodium azide    | <b>Safe Work Australia (Australia, 12/2019).</b><br>PEAK: 0.11 ppm<br>PEAK: 0.3 mg/m <sup>3</sup> |

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

## Section 8. Exposure controls and personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Solid. [Powder.]
- Colour** : White.
- Odour** : Not available.
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : Not available.
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Flow time (ISO 2431)** : Not available.

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerisation will not occur.
- Conditions to avoid** : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
- Incompatible materials** : Reactive or incompatible with the following materials:  
oxidising materials  
Heavy metals.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name | Result                          | Species               | Dose                  | Exposure |
|-------------------------|---------------------------------|-----------------------|-----------------------|----------|
| sodium azide            | LC50 Inhalation Dusts and mists | Rat - Male,<br>Female | 0.054 to 0.52<br>mg/l | 4 hours  |
|                         | LD50 Dermal                     | Rabbit                | 20 mg/kg              | -        |
|                         | LD50 Dermal                     | Rat                   | 50 mg/kg              | -        |
|                         | LD50 Oral                       | Rat                   | 27 mg/kg              | -        |

**Conclusion/Summary** : Not available.

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : Not available.

**Eyes** : Not available.

**Respiratory** : Not available.

#### Sensitisation

##### Conclusion/Summary

**Skin** : Not available.

**Respiratory** : Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

**Conclusion/Summary** : Not available.

## Section 11. Toxicological information

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

- Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
- Inhalation** : Toxic if inhaled. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- Skin contact** : Toxic in contact with skin.
- Ingestion** : Harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
irritation  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Potential chronic health effects

- General** : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates



## Section 11. Toxicological information

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| Lyophilized Standard    | 429.3        | 285.1          | N/A                      | N/A                         | 0.63                                |
| Albumins, blood serum   | 500          | N/A            | N/A                      | N/A                         | N/A                                 |
| sodium azide            | 27           | 20             | N/A                      | N/A                         | 0.05                                |

## Section 12. Ecological information

### Toxicity

| Product/ingredient name | Result                              | Species  | Exposure |
|-------------------------|-------------------------------------|--|----------|
| sodium azide            | Acute EC50 0.348 mg/l Fresh water   | Algae - Pseudokirchneriella subcapitata        | 96 hours |
|                         | Acute EC50 6.4 mg/l Fresh water     | Crustaceans - Simocephalus serrulatus - Larvae | 48 hours |
|                         | Acute EC50 4.2 mg/l Fresh water     | Daphnia - Daphnia pulex - Larvae               | 48 hours |
|                         | Acute LC50 0.68 mg/l Fresh water    | Fish - Lepomis macrochirus                     | 96 hours |
|                         | Chronic NOEC 5600 µg/l Marine water | Algae - Macrocyctis pyrifera                   | 96 hours |

**Conclusion/Summary** : Not available.

### Persistence and degradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil







**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                                   | ADG  | ADR/RID  | IMDG  | IATA   |
|-----------------------------------|--|--|---|--|
| <b>UN number</b>                  | UN3288   | UN3288   | UN3288  | UN3288   |
| <b>UN proper shipping name</b>    | TOXIC SOLID, INORGANIC, N.O.S. (sodium azide)  | TOXIC SOLID, INORGANIC, N.O.S. (sodium azide)  | TOXIC SOLID, INORGANIC, N.O.S. (sodium azide)   | Toxic solid, inorganic, n.o.s. (sodium azide)  |
| <b>Transport hazard class(es)</b> | 6.1<br> | 6.1<br>  | 6.1<br>  | 6.1<br> |
| <b>Packing group</b>              | III  | III  | III   | III  |
| <b>Environmental hazards</b>      | Yes. The environmentally hazardous substance mark is not required.                       | Yes.   | Yes.  | Yes. The environmentally hazardous substance mark is not required.                         |

### Additional information

- ADG** : **Hazchem code** 2X  
**Special provisions** 223, 274
- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Hazard identification number** 60  
**Limited quantity** 5 kg  
**Special provisions** 274  
**Tunnel code** (E)
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Emergency schedules** F-A, S-A  
**Special provisions** 223, 274  
**IMDG Code Segregation group** SGG17 - Azides
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.  
**Quantity limitation** Passenger and Cargo Aircraft: 100 kg. Packaging instructions: 670. Cargo Aircraft Only: 200 kg. Packaging instructions: 677. Limited Quantities - Passenger Aircraft: 10 kg. Packaging instructions: Y645.  
**Special provisions** A3, A5

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AICS)** : Not determined.

### International regulations

**Date of issue/Date of revision** : 09/11/2020 **Date of previous issue** : No previous validation **Version** : 1 10/12

## Section 15. Regulatory information

### [Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

### [Montreal Protocol](#)

Not listed.

### [Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

### [Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

### [UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

## Section 16. Any other relevant information

### [History](#)

**Date of issue/Date of revision** : 09/11/2020

**Date of previous issue** : No previous validation

**Version** : 1

**Prepared by** : Sphera Solutions

**Key to abbreviations** :

- ADG = Australian Dangerous Goods
- ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SUSMP = Standard Uniform Schedule of Medicine and Poisons
- UN = United Nations

### [Procedure used to derive the classification](#)

| Classification                           | Justification      |
|--|--------------------|
| ACUTE TOXICITY (oral) - Category 4       | Calculation method |
| ACUTE TOXICITY (dermal) - Category 3     | Calculation method |
| ACUTE TOXICITY (inhalation) - Category 3 | Calculation method |

**References** :

- Work Health and Safety Regulations 2011, as ammended
- Preparation of Safety Data Sheets for Hazardous Chemicals, Code of Practice, Safe Work Australia
- Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG), National Transport Commission

✔ Indicates information that has changed from previously issued version.

### [Notice to reader](#)

## Section 16. Any other relevant information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# SAFETY DATA SHEET

Pure & Conjugated Antibodies, Recombinant Proteins, Avidin,  
and Streptavidin

## Section 1. Identification

**Product identifier** : Pure & Conjugated Antibodies, Recombinant Proteins, Avidin, and Streptavidin  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Research.  
**Area of application** : Industrial applications.

**Supplier/Manufacturer** : BioLegend Inc.  
8999 BioLegend Way  
San Diego, CA 92121 –  
USA Tel: +1-858-455-9588(7:00AM – 5:00PM PT, M-F)

**Supplier's details** : RSM Australia Pty Ltd – On Behalf of BioLegend, Inc.  
Level 21, 55 Collins Street Melbourne VIC 3000  
PO Box 248, Collins Street West VIC 8007  
Phone: +61 (0) 3 9286 8040  
Fax: +61 (0) 3 9286 8199

**e-mail address of person responsible for this SDS** : cs@biolegend.com

**Emergency telephone number (with hours of operation)** : +61 (0) 3 9286 8040 (24 hours)

## Section 2. Hazard(s) identification

**Classification of the substance or mixture** : Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.4%

### GHS label elements

**Signal word** : No signal word.  
**Hazard statements** : No known significant effects or critical hazards.  
**Precautionary statements**  
**Prevention** : Not applicable.  
**Response** : Not applicable.  
**Storage** : Not applicable.  
**Disposal** : Not applicable.  
**Supplemental label elements** : Not applicable.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition and ingredient information

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.  
**EC number** : Mixture.  
**Product code** : Not available.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
phosphorus oxides  
metal oxide/oxides  
carbon oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.



## Section 9. Physical and chemical properties

### Appearance

|   |                          |
|---|--------------------------|
| <b>Physical state</b>                               | : Liquid.                |
| <b>Colour</b>                                       | : Colourless. to Yellow. |
| <b>Odour</b>  | : Not available.         |
| <b>Odour threshold</b>                              | : Not available.         |
| <b>pH</b>   | : 7.2                    |
| <b>Melting point</b>                                | : Not available.         |
| <b>Boiling point</b>                                | : Not available.         |
| <b>Flash point</b>                                  | : Not available.         |
| <b>Evaporation rate</b>                             | : Not available.         |
| <b>Flammability (solid, gas)</b>                    | : Not applicable.        |
| <b>Lower and upper explosive (flammable) limits</b> | : Not available.         |
| <b>Vapour pressure</b>                              | : Not available.         |
| <b>Vapour density</b>                               | : Not available.         |
| <b>Relative density</b>                             | : Not available.         |
| <b>Solubility</b>                                   | : Not available.         |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available.         |
| <b>Auto-ignition temperature</b>                    | : Not available.         |
| <b>Decomposition temperature</b>                    | : Not available.         |
| <b>Viscosity</b>                                    | : Not available.         |

## Section 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | : No specific test data related to reactivity available for this product or its ingredients.  |
| <b>Chemical stability</b>                 | : The product is stable.  |
| <b>Possibility of hazardous reactions</b> | : Under normal conditions of storage and use, hazardous reactions will not occur.<br><br>Under normal conditions of storage and use, hazardous polymerisation will not occur. |
| <b>Conditions to avoid</b>                | : No specific data.   |
| <b>Incompatible materials</b>             | :   |
| <b>Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

**Conclusion/Summary** : Not available.

#### Irritation/Corrosion

##### Conclusion/Summary

**Skin** : Not available.

## Section 11. Toxicological information

**Eyes** : Not available.

**Respiratory** : Not available.

### Sensitisation

#### Conclusion/Summary

**Skin** : Not available.

**Respiratory** : Not available.

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

## Section 11. Toxicological information

|                              |   |
|------------------------------|---|
| <b>General</b>               | : No known significant effects or critical hazards. |
| <b>Carcinogenicity</b>       | : No known significant effects or critical hazards. |
| <b>Mutagenicity</b>          | : No known significant effects or critical hazards. |
| <b>Teratogenicity</b>        | : No known significant effects or critical hazards. |
| <b>Developmental effects</b> | : No known significant effects or critical hazards. |
| <b>Fertility effects</b>     | : No known significant effects or critical hazards. |

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

**Conclusion/Summary** : Not available.

### Persistence and degradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient ( $K_{oc}$ )** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

## Section 14. Transport information

|                            | ADG            | ADR/RID        | IMDG           | IATA           |
|----------------------------|----------------|----------------|----------------|----------------|
| UN number                  | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name    | -              | -              | -              | -              |
| Transport hazard class(es) | -              | -              | -              | -              |
| Packing group              | -              | -              | -              | -              |
| Environmental hazards      | No.            | No.            | No.            | No.            |
| Additional information     | -              | -              | -              | -              |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AICS)** : Not determined.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Any other relevant information

### History

|                                       |   |
|---------------------------------------|---|
| <b>Date of issue/Date of revision</b> | : 15/07/2021  |
| <b>Date of previous issue</b>         | : 19/07/2016  |
| <b>Version</b>                        | : 2   |
| <b>Prepared by</b>                    | : BioLegend   |
| <b>Key to abbreviations</b>           | : ADG = Australian Dangerous Goods<br>ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>NOHSC = National Occupational Health and Safety Commission<br>SUSMP = Standard Uniform Schedule of Medicine and Poisons<br>UN = United Nations |

### Procedure used to derive the classification

| Classification  | Justification |
|-----------------|---------------|
| Not classified. |               |

|                   |  |
|-------------------|--|
| <b>References</b> | : Work Health and Safety Regulations 2011, as ammended<br>Preparation of Safety Data Sheets for Hazardous Chemicals, Code of Practice, Safe Work Australia<br>Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG), National Transport Commission |
|-------------------|--|

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# SAFETY DATA SHEET

Stop Solution

## Section 1. Identification

**Product identifier** : Stop Solution  
**Product code** : Not available.  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Research.  
**Area of application** : Industrial applications.

**Manufacturer** : BioLegend Inc.  
 8999 BioLegend Way  
 San Diego, CA 92121 – USA  
 Tel: +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

**Supplier's details** : RSM Australia Pty Ltd – On Behalf of BioLegend, Inc.  
 Level 21, 55 Collins Street Melbourne VIC 3000  
 PO Box 248, Collins Street West VIC 8007  
 Phone: +61 (0) 3 9286 8040  
 Fax: +61 (0) 3 9286 8199

**e-mail address of person responsible for this SDS** : cs@biolegend.com

**Emergency telephone number (with hours of operation)** : +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

## Section 2. Hazard(s) identification

**Classification of the substance or mixture** : H314 SKIN CORROSION/IRRITATION - Category 1  
 H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
 H317 SKIN SENSITISATION - Category 1  
 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity:  
 5%

### GHS label elements

#### Hazard pictograms



**Signal word** : DANGER

**Hazard statements** : H314 - Causes severe skin burns and eye damage.  
 H317 - May cause an allergic skin reaction.

#### Precautionary statements

**Prevention** : P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
 P261 - Avoid breathing vapour.  
 P264 - Wash hands thoroughly after handling.  
 P272 - Contaminated work clothing should not be allowed out of the workplace.

## Section 2. Hazard(s) identification

- Response** : P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.  
P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.  
P333 + P313 - If skin irritation or rash occurs: Get medical attention.  
P305 + P351 + P338 + P310 - 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 or physician.
- Storage** : P405 - Store locked up.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.
- Other hazards which do not result in classification** : None known.

## Section 3. Composition and ingredient information

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

| Ingredient name            | % (w/w) | CAS number |
|----------------------------|---------|------------|
| Proprietary (Organic acid) | ≤10     | -          |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## Section 4. First aid measures

- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)



## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Hazchem code** : 2R

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

None.

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

#### Skin protection

## Section 8. Exposure controls and personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid. [Clear.]
- Colour** : Colourless.
- Odour** : Not available.
- Odour threshold** : Not available.
- pH** : 1.1
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : Not available.
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Flow time (ISO 2431)** : Not available.

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerisation will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.  
Reactive or incompatible with the following materials:  
alkalis
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name    | Result      | Species | Dose       | Exposure |
|----------------------------|-------------|---------|------------|----------|
| Proprietary (Organic acid) | LD50 Dermal | Rabbit  | 1560 mg/kg | -        |
|                            | LD50 Oral   | Rat     | 708 mg/kg  | -        |

**Conclusion/Summary** : Not available.

#### Irritation/Corrosion

| Product/ingredient name    | Result                 | Species | Score | Exposure            | Observation |
|----------------------------|------------------------|---------|-------|---------------------|-------------|
| Proprietary (Organic acid) | Eyes - Severe irritant | Rabbit  | -     | 2 minutes 1 Percent | -           |

#### Conclusion/Summary

**Skin** : Not available.

**Eyes** : Not available.

**Respiratory** : Not available.

#### Sensitisation

##### Conclusion/Summary

**Skin** : Not available.

**Respiratory** : Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

**Conclusion/Summary** : Not available.

#### Specific target organ toxicity (single exposure)

## Section 11. Toxicological information

| Name                       | Category   | Route of exposure | Target organs                |
|----------------------------|------------|-------------------|------------------------------|
| Proprietary (Organic acid) | Category 3 | Not applicable.   | Respiratory tract irritation |

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

## Section 11. Toxicological information

### Numerical measures of toxicity

#### Acute toxicity estimates

| Route  | ATE value     |
|--------|---------------|
| Oral   | 14211 mg/kg   |
| Dermal | 31312.3 mg/kg |

## Section 12. Ecological information

### Toxicity

| Product/ingredient name    | Result                             | Species                          | Exposure |
|----------------------------|------------------------------------|----------------------------------|----------|
| Proprietary (Organic acid) | Acute EC50 316200 µg/l Fresh water | Daphnia - Daphnia magna - Larvae | 48 hours |
|                            | Acute LC50 5000 µg/l Fresh water   | Fish - Pimephales promelas       | 96 hours |

**Conclusion/Summary** : Not available.

### Persistence and degradability

| Product/ingredient name    | Test  | Result            | Dose | Inoculum |
|----------------------------|---|-------------------|------|----------|
| Proprietary (Organic acid) | OECD 301B Ready Biodegradability - CO2 Evolution Test | 97.08 % - 28 days | -    | -        |

**Conclusion/Summary** : Not available.

| Product/ingredient name    | Aquatic half-life | Photolysis | Biodegradability |
|----------------------------|-------------------|------------|------------------|
| Proprietary (Organic acid) | -                 | -          | Readily          |

### Bioaccumulative potential

| Product/ingredient name    | LogP <sub>ow</sub> | BCF | Potential |
|----------------------------|--------------------|-----|-----------|
| Proprietary (Organic acid) | -1.3               | -   | low       |

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.





## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when

## Section 13. Disposal considerations

handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                                   | ADG  | ADR/RID  | IMDG  | IATA   |
|-----------------------------------|--|--|---|--|
| <b>UN number</b>                  | UN1789   | UN1789   | UN1789  | UN1789   |
| <b>UN proper shipping name</b>    | HYDROCHLORIC ACID solution   | HYDROCHLORIC ACID solution   | HYDROCHLORIC ACID solution  | Hydrochloric acid solution   |
| <b>Transport hazard class(es)</b> | 8<br> | 8<br>   | 8<br> | 8<br>   |
| <b>Packing group</b>              | III  | III  | III   | III  |
| <b>Environmental hazards</b>      | No.  | No.  | No.   | No.  |
| <b>Additional information</b>     | <b>Hazchem code</b> 2R<br><b>Special provisions</b> 223                                | <b>Hazard identification number</b> 80<br><b>Limited quantity</b> 5 L<br><b>Special provisions</b> 520<br><b>Tunnel code</b> (E) | <b>Emergency schedules</b> F-A, S-B<br><b>Special provisions</b> 223                    | <b>Quantity limitation</b><br>Passenger and Cargo Aircraft: 5 L.<br>Packaging instructions: 852.<br>Cargo Aircraft Only: 60 L. Packaging instructions: 856.<br>Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y841.<br><b>Special provisions</b> A3, A803 |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AICS)** : All components are listed or exempted.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

**Date of issue/Date of revision** : 24/09/2021

**Date of previous issue** : 03/04/2017

**Version** : 2

10/11

## Section 15. Regulatory information

Not listed.

### [Montreal Protocol \(Annexes A, B, C, E\)](#)

Not listed.

### [Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

### [Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

### [UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

## Section 16. Any other relevant information

### [History](#)

**Date of issue/Date of revision** : 24/09/2021

**Date of previous issue** : 03/04/2017

**Version** : 2

**Prepared by** : BioLegend

**Key to abbreviations** :

- ADG = Australian Dangerous Goods
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- NOHSC = National Occupational Health and Safety Commission
- SUSMP = Standard Uniform Schedule of Medicine and Poisons
- UN = United Nations

### [Procedure used to derive the classification](#)

| Classification   | Justification  |
|--|--|
| Skin Corr. 1, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317 | On basis of test data<br>On basis of test data<br>Calculation method |

**References** :

- Work Health and Safety Regulations 2011, as ammended
- Preparation of Safety Data Sheets for Hazardous Chemicals, Code of Practice, Safe Work Australia
- Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG), National Transport Commission

### [Notice to reader](#)

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



# SAFETY DATA SHEET

Substrate Solution C, D, E, F

## Section 1. Identification

**Product identifier** : Substrate Solution C, D, E, F  
**Product code** : Not available.  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Research.  
**Area of application** : Industrial applications.

**Manufacturer** : BioLegend Inc.  
8999 BioLegend Way  
San Diego, CA 92121 – USA  
Tel: +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

**Supplier's details** : RSM Australia Pty Ltd – On Behalf of BioLegend, Inc.  
Level 21, 55 Collins Street Melbourne VIC 3000  
PO Box 248, Collins Street West VIC 8007  
Phone: +61 (0) 3 9286 8040  
Fax: +61 (0) 3 9286 8199

**e-mail address of person responsible for this SDS** : cs@biolegend.com

**Emergency telephone number (with hours of operation)** : +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

## Section 2. Hazard(s) identification

**Classification of the substance or mixture** : Not classified.

### GHS label elements

**Signal word** : No signal word.  
**Hazard statements** : No known significant effects or critical hazards.  
**Precautionary statements**  
**Prevention** : Not applicable.  
**Response** : Not applicable.  
**Storage** : Not applicable.  
**Disposal** : Not applicable.  
**Supplemental label elements** : Not applicable.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition and ingredient information

|                                      |                  |
|--------------------------------------|------------------|
| <b>Substance/mixture</b>             | : Mixture        |
| <b>Other means of identification</b> | : Not available. |

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

|                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.   |
| <b>Inhalation</b>   | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.   |
| <b>Skin contact</b> | : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.  |
| <b>Ingestion</b>    | : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

|                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : No known significant effects or critical hazards. |
| <b>Inhalation</b>   | : No known significant effects or critical hazards. |
| <b>Skin contact</b> | : No known significant effects or critical hazards. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards. |

#### Over-exposure signs/symptoms

|                     |                     |
|---------------------|---------------------|
| <b>Eye contact</b>  | : No specific data. |
| <b>Inhalation</b>   | : No specific data. |
| <b>Skin contact</b> | : No specific data. |
| <b>Ingestion</b>    | : No specific data. |

### Indication of immediate medical attention and special treatment needed, if necessary

|                                   |   |
|-----------------------------------|---|
| <b>Notes to physician</b>         | : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| <b>Specific treatments</b>        | : No specific treatment.  |
| <b>Protection of first-aiders</b> | : No action shall be taken involving any personal risk or without suitable training.  |

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products** : No specific data.

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8).

## Section 7. Handling and storage

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

|   |  |
|---|--|
| <b>Physical state</b>                               | : Liquid. [Clear.]   |
| <b>Colour</b>                                       | : Colourless. to Blue. [Light]   |
| <b>Odour</b>  | : Not available.   |
| <b>Odour threshold</b>                              | : Not available.   |
| <b>pH</b>   | : 7.2  |
| <b>Melting point</b>                                | : Not available.   |
| <b>Boiling point</b>                                | : Not available.   |
| <b>Flash point</b>                                  | : Not available.   |
| <b>Evaporation rate</b>                             | : Not available.   |
| <b>Flammability (solid, gas)</b>                    | : Not applicable.  |
| <b>Lower and upper explosive (flammable) limits</b> | : Not available.   |
| <b>Vapour pressure</b>                              | : Not available.   |
| <b>Vapour density</b>                               | : Not available.   |
| <b>Relative density</b>                             | : Not available.   |
| <b>Solubility</b>                                   | : Easily soluble in the following materials: cold water and hot water. |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available.   |
| <b>Auto-ignition temperature</b>                    | : Not available.   |
| <b>Decomposition temperature</b>                    | : Not available.   |
| <b>Viscosity</b>                                    | : Not available.   |
| <b>Flow time (ISO 2431)</b>                         | : Not available.   |

## Section 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | : No specific test data related to reactivity available for this product or its ingredients.  |
| <b>Chemical stability</b>                 | : The product is stable.  |
| <b>Possibility of hazardous reactions</b> | : Under normal conditions of storage and use, hazardous reactions will not occur.<br>Under normal conditions of storage and use, hazardous polymerisation will not occur. |
| <b>Conditions to avoid</b>                | : Avoid high temperatures. Keep away from heat and direct sunlight.   |
| <b>Incompatible materials</b>             | : Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids and alkalis.  |
| <b>Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Conclusion/Summary : Not available.

#### Irritation/Corrosion

##### Conclusion/Summary

Skin : Not available.

Eyes : Not available.

Respiratory : Not available.

#### Sensitisation

##### Conclusion/Summary

Skin : Not available.

Respiratory : Not available.

#### Mutagenicity

Conclusion/Summary : Not available.

#### Carcinogenicity

Conclusion/Summary : Not available.

#### Reproductive toxicity

Conclusion/Summary : Not available.

#### Teratogenicity

Conclusion/Summary : Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

### Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

Potential immediate effects : Not available.

## Section 11. Toxicological information

**Potential delayed effects** : Not available.

### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

**Conclusion/Summary** : Not available.

### Persistence and degradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                            | ADG            | ADR/RID        | IMDG           | IATA           |
|----------------------------|----------------|----------------|----------------|----------------|
| UN number                  | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name    | -              | -              | -              | -              |
| Transport hazard class(es) | -              | -              | -              | -              |
| Packing group              | -              | -              | -              | -              |
| Environmental hazards      | No.            | No.            | No.            | No.            |
| Additional information     | -              | -              | -              | -              |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AICS)** : All components are listed or exempted.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.



## Section 16. Any other relevant information

### History

|                                       |   |
|---------------------------------------|---|
| <b>Date of issue/Date of revision</b> | : 17/9/2021   |
| <b>Date of previous issue</b>         | : 30/03/2017  |
| <b>Version</b>                        | : 2   |
| <b>Prepared by</b>                    | : BioLegend   |
| <b>Key to abbreviations</b>           | : ADG = Australian Dangerous Goods<br>ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>NOHSC = National Occupational Health and Safety Commission<br>SUSMP = Standard Uniform Schedule of Medicine and Poisons<br>UN = United Nations |

### Procedure used to derive the classification

| Classification  | Justification |
|-----------------|---------------|
| Not classified. |               |

|                   |  |
|-------------------|--|
| <b>References</b> | : Work Health and Safety Regulations 2011, as ammended<br>Preparation of Safety Data Sheets for Hazardous Chemicals, Code of Practice, Safe Work Australia<br>Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG), National Transport Commission |
|-------------------|--|

### Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# SAFETY DATA SHEET

Wash Buffer 20x

## Section 1. Identification

**Product identifier** : Wash Buffer 20x  
**Product code** : Not available.  
**Other means of identification** : Not available.  
**Product type** : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Research.  
**Area of application** : Industrial applications.

**Manufacturer** : BioLegend Inc.  
8999 BioLegend Way  
San Diego, CA 92121 – USA  
Tel: +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

**Supplier's details** : RSM Australia Pty Ltd – On Behalf of BioLegend, Inc.  
Level 21, 55 Collins Street Melbourne VIC 3000  
PO Box 248, Collins Street West VIC 8007  
Phone: +61 (0) 3 9286 8040  
Fax: +61 (0) 3 9286 8199

**e-mail address of person responsible for this SDS** : cs@biolegend.com

**Emergency telephone number (with hours of operation)** : +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)

## Section 2. Hazard(s) identification

**Classification of the substance or mixture** : Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 20.8%  
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 20.8%

### GHS label elements

**Signal word** : No signal word.  
**Hazard statements** : No known significant effects or critical hazards.

### Precautionary statements

**Prevention** : Not applicable.  
**Response** : Not applicable.  
**Storage** : Not applicable.  
**Disposal** : Not applicable.  
**Supplemental label elements** : Not applicable.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition and ingredient information

|                                      |                  |
|--------------------------------------|------------------|
| <b>Substance/mixture</b>             | : Mixture        |
| <b>Other means of identification</b> | : Not available. |

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

|                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.   |
| <b>Inhalation</b>   | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.   |
| <b>Skin contact</b> | : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.  |
| <b>Ingestion</b>    | : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

|                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : No known significant effects or critical hazards. |
| <b>Inhalation</b>   | : No known significant effects or critical hazards. |
| <b>Skin contact</b> | : No known significant effects or critical hazards. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards. |

#### Over-exposure signs/symptoms

|                     |                     |
|---------------------|---------------------|
| <b>Eye contact</b>  | : No specific data. |
| <b>Inhalation</b>   | : No specific data. |
| <b>Skin contact</b> | : No specific data. |
| <b>Ingestion</b>    | : No specific data. |

### Indication of immediate medical attention and special treatment needed, if necessary

|                                   |   |
|-----------------------------------|---|
| <b>Notes to physician</b>         | : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| <b>Specific treatments</b>        | : No specific treatment.  |
| <b>Protection of first-aiders</b> | : No action shall be taken involving any personal risk or without suitable training.  |

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
phosphorus oxides  
halogenated compounds  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

None.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

|   |                    |
|---|--------------------|
| <b>Physical state</b>                               | : Liquid. [Clear.] |
| <b>Colour</b>                                       | : Colourless.      |
| <b>Odour</b>  | : Not available.   |
| <b>Odour threshold</b>                              | : Not available.   |
| <b>pH</b>   | : 6.25 to 6.35     |
| <b>Melting point</b>                                | : Not available.   |
| <b>Boiling point</b>                                | : Not available.   |
| <b>Flash point</b>                                  | : Not available.   |
| <b>Evaporation rate</b>                             | : Not available.   |
| <b>Flammability (solid, gas)</b>                    | : Not applicable.  |
| <b>Lower and upper explosive (flammable) limits</b> | : Not available.   |
| <b>Vapour pressure</b>                              | : Not available.   |
| <b>Vapour density</b>                               | : Not available.   |
| <b>Relative density</b>                             | : Not available.   |
| <b>Solubility</b>                                   | : Not available.   |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available.   |
| <b>Auto-ignition temperature</b>                    | : Not available.   |
| <b>Decomposition temperature</b>                    | : Not available.   |
| <b>Viscosity</b>                                    | : Not available.   |
| <b>Flow time (ISO 2431)</b>                         | : Not available.   |

## Section 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | : No specific test data related to reactivity available for this product or its ingredients.  |
| <b>Chemical stability</b>                 | : The product is stable.  |
| <b>Possibility of hazardous reactions</b> | : Under normal conditions of storage and use, hazardous reactions will not occur.<br>Under normal conditions of storage and use, hazardous polymerisation will not occur. |
| <b>Conditions to avoid</b>                | : No specific data.   |
| <b>Incompatible materials</b>             | : No specific data.   |
| <b>Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Conclusion/Summary : Not available.

#### Irritation/Corrosion

##### Conclusion/Summary

Skin : Not available.

Eyes : Not available.

Respiratory : Not available.

#### Sensitisation

##### Conclusion/Summary

Skin : Not available.

Respiratory : Not available.

#### Mutagenicity

Conclusion/Summary : Not available.

#### Carcinogenicity

Conclusion/Summary : Not available.

#### Reproductive toxicity

Conclusion/Summary : Not available.

#### Teratogenicity

Conclusion/Summary : Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.

**Inhalation** : No specific data.

**Skin contact** : No specific data.

**Ingestion** : No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

## Section 11. Toxicological information

**Potential delayed effects** : Not available.

### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

**Conclusion/Summary** : Not available.

### Persistence and degradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.



## Section 14. Transport information

|                            | ADG            | ADR/RID        | IMDG           | IATA           |
|----------------------------|----------------|----------------|----------------|----------------|
| UN number                  | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name    | -              | -              | -              | -              |
| Transport hazard class(es) | -              | -              | -              | -              |
| Packing group              | -              | -              | -              | -              |
| Environmental hazards      | No.            | No.            | No.            | No.            |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

5

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AICS)** : All components are listed or exempted.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Any other relevant information

### History

|                                       |  |
|---------------------------------------|--|
| <b>Date of issue/Date of revision</b> | : 22/09/2021   |
| <b>Date of previous issue</b>         | : 21/04/2017   |
| <b>Version</b>                        | : 2  |
| <b>Prepared by</b>                    | : BioLegend  |
| <b>Key to abbreviations</b>           | : ADG = Australian Dangerous Goods<br>ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road<br>ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>SUSMP = Standard Uniform Schedule of Medicine and Poisons<br>UN = United Nations |

### Procedure used to derive the classification

| Classification  | Justification |
|-----------------|---------------|
| Not classified. |               |

|                   |  |
|-------------------|--|
| <b>References</b> | : Work Health and Safety Regulations 2011, as ammended<br>Preparation of Safety Data Sheets for Hazardous Chemicals, Code of Practice, Safe Work Australia<br>Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG), National Transport Commission |
|-------------------|--|

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.