

SAFETY DATA SHEET

Acidification Buffer

Section 1. Identification		
Product identifier	: Acidification Buffer	
Product code	: Not available.	
Other means of identification	: Not available.	
Product type	: Liquid.	
Relevant identified uses of t	he substance or mixture and uses advised against	
Product use	: Research.	
Area of application	: Industrial applications.	
Supplier/Manufacturer	: BioLegend Inc. 9727 Pacific Heights Blvd. San Diego, CA 92121 – USA Tel: +1-858-455-9588	
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
	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%
GHS label elements	
Hazard pictograms	
Signal word	: DANGER
Hazard statements	: H314 - Causes severe skin burns and eye damage.
Precautionary statements	
Prevention	 P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P264 - Wash hands thoroughly after handling.
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. 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.
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Section 2. Hazard(s) identification

Storage	:	Immediately call a POISON CENTER or physician. 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	:	Causes digestive tract burns.

Section 3. Composition and ingredient information

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

Ingredient name	% (w/w)	CAS number
hydrochloric acid	≤3	7647-01-0

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.
Skin contact	: Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with 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. 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.
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Section 4. First aid measures

Most important symptoms/e	cts, acute and delayed	
Potential acute health effect		
Eye contact	Causes serious eye damage.	
Inhalation	No known significant effects or critical hazards.	
Skin contact	Causes severe burns.	
Ingestion	Corrosive to the digestive tract. Causes burns.	
<u>Over-exposure signs/symp</u>	<u>15</u>	
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 med	l 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. 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: halogenated compounds
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.
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Section 5. Firefighting measures

Hazchem code

Section 6. Accidental release measures

: 2R

Personal precautions, protec	re 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 environmenta pollution (sewers, waterways, soil or air).
Methods and material for cor	inment and cleaning up
Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mor 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 handlin	g				
Protective measures	:	eyes or normal ventilati approve in use.	appropriate personal protective on skin or clothing. Do not bruse the material presents a re- ion or wear appropriate respira- ed alternative made from a con- Keep away from alkalis. Emp ardous. Do not reuse containe	reathe vapour or mist. I espiratory hazard, use o ator. Keep in the origina mpatible material, kept oty containers retain pro	Do not ingest. If during nly with adequate al container or an tightly closed when not
Advice on general occupational hygiene	:	handled eating, o equipmo	drinking and smoking should d, stored and processed. Wor drinking and smoking. Remov ent before entering eating are tion on hygiene measures.	kers should wash hand ve contaminated clothin	s and face before g and protective
Conditions for safe storage, including any incompatibilities	:	from dir materia alkalis. that hav leakage	n accordance with local regulat rect sunlight in a dry, cool and ils (see Section 10) and food a Keep container tightly closed ve been opened must be caref e. Do not store in unlabelled c nvironmental contamination.	well-ventilated area, aw and drink. Store locked and sealed until ready fully resealed and kept of	ay from incompatible up. Separate from for use. Containers upright to prevent
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Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits	
hydrochloric acid	Safe Work Australia (Australia, 1/20 TWA: 5 ppm 8 hours. TWA: 7.5 mg/m ³ 8 hours.)14).
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 we exposure to airborne contaminants below any recommended or statutory lim	
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to they comply with the requirements of environmental protection legislation. In cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.	
Individual protection meas	<u>2</u>	
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated of Wash contaminated clothing before reusing. Ensure that eyewash stations a safety showers are close to the workstation location.	clothing.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a assessment indicates this is necessary to avoid exposure to liquid splashes, gases or dusts. If contact is possible, the following protection should be worn unless the assessment indicates a higher degree of protection: chemical sp goggles and/or face shield. If inhalation hazards exist, a full-face respirator r required instead.	mists, n, lash
Skin protection		
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard be worn at all times when handling chemical products if a risk assessment in this is necessary. Considering the parameters specified by the glove manufac check during use that the gloves are still retaining their protective properties. should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consistin several substances, the protection time of the gloves cannot be accurately estimated.	ndicates acturer, . It
Body protection	 Personal protective equipment for the body should be selected based on the being performed and the risks involved and should be approved by a special 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 shou approved by a specialist before handling this product.	
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that mee appropriate standard or certification. Respirators must be used according to respiratory protection program to ensure proper fitting, training, and other im aspects of use.	a

Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	: Liquid. [Clear.]
Colour	: Colourless.
Odour	: Not available.
Odour threshold	: Not available.
рН	: 0.7
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

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
hydrochloric acid	Skin - Mild irritant	Human	-	24 hours 4 Percent	-
Conclusion/Summary					
Skin	: Not available.				
Eyes	: Not available.				
Respiratory	: Not available.				
<u>Sensitisation</u>					
Conclusion/Summary					
Skin	: Not available.				
Respiratory	: Not available.				
<u>Mutagenicity</u>					
Conclusion/Summary	: Not available.				
Carcinogenicity					
Conclusion/Summary	: Not available.				
Reproductive toxicity					
Conclusion/Summary	: Not available.				
Teratogenicity					
Conclusion/Summary	: Not available.				
<u>Specific target organ toxici</u>	ity (single exposure)				
Namo		Category	Rout	te of T	arget organs

Name		Route of exposure	Target organs
hydrochloric acid	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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

Potential acute health effects

Eye contact	: Causes serious eye damage.	
Inhalation	: No known significant effects or critical hazards.	
Skin contact	: Causes severe burns.	
Ingestion	: Corrosive to the digestive tract. Causes burns.	

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse s pain watering redness	symptoms may include the	following:		
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Section 11. Toxicological information

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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 effect	<u>cts</u>	as well as chronic effects from short and long-term exposure
Short term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	1	Not available.
Long term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	:	Not available.
Potential chronic health eff	<u>ect</u>	<u>s</u>
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

Product/ingredient name	Result	Species	Exposure
hydrochloric acid	Acute LC50 240000 µg/l Marine water	Crustaceans - Carcinus maenas - Adult	48 hours
	Acute LC50 282 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
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Conclusion/Summary : N

: Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

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Section 12. Ecological information

Soil/water partition coefficient (Koc)

: 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
UN number	UN1789	UN1789	UN1789	UN1789
UN proper shipping name	HYDROCHLORIC ACID solution	HYDROCHLORIC ACID solution	HYDROCHLORIC ACID solution	Hydrochloric acid solution
Transport hazard class(es)	8 CORROSIVE 8	8	8	8
Packing group	111	111	111	
Environmental hazards	No.	No.	No.	No.
Additional information	Hazchem code 2R Special provisions 223	Hazard identification number 80Limited quantity 5 LSpecial provisions 520Tunnel code (E)	Emergency schedules (EmS) F-A, S-B Special provisions 223	Passenger and Cargo AircraftQuantity limitation: 5 L Packaging instructions: 852Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 856Packaging instructions: 856Limited Quantities - Passenger Aircraft Quantity limitation: 1 L Packaging instructions: Y841Special provisions A3, A803

Section 14. Transport 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 : Not available. to Annex II of Marpol and the IBC Code

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

<u>Chemical Weapon Convention List Schedules I, II & III Chemicals</u> 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

<u>History</u>	
Date of issue/Date of revision	: 05/04/2017
Date of previous issue	: No previous validation
Version	: 1
Prepared by	: Sphera Solutions
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 = Internediate 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 t	he classification

Procedure used to derive the classification

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Section 16. Any other relevant information

	Classification	Justification
Skin Corr. 1, H314 Eye Dam. 1, H318		On basis of test data On basis of test data
References	Preparation of Safety Dat Work Australia	Regulations 2011, as ammended a Sheets for Hazardous Chemicals, Code of Practice, Safe ransport of Dangerous Goods by Road and Rail (ADG),

National Transport Commission

V Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed 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

Avidin HRP 1000X

Section 1. Identification	
Product identifier	: Avidin HRP 1000X
Product code	: Not available.
Other means of identification	: Not available.
Product type	: Liquid.
Relevant identified uses of t	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

Substance/mixture

Other means of identification

- : Mixture
- : 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 healt	h 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.	
<u>Over-exposure signs</u>	s/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.	

See toxicological information (Section 11)

Protection of first-aiders

: No action shall be taken involving any personal risk or without suitable training.

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Section 5. Firefighting measures

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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.
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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures		
For non-emergency personnel	o action shall be taken involving any personal risk or without suitable training vacuate surrounding areas. Keep unnecessary and unprotected personnel f ntering. Do not touch or walk through spilt material. Put on appropriate pers rotective equipment.	rom
For emergency responders	specialised clothing is required to deal with the spillage, take note of any formation in Section 8 on suitable and unsuitable materials. See also the formation in "For non-emergency personnel".	
Environmental precautions	void dispersal of spilt material and runoff and contact with soil, waterways, du nd sewers. Inform the relevant authorities if the product has caused environ ollution (sewers, waterways, soil or air).	
Methods and material for cor	nent and cleaning up	
Small spill	top leak if without risk. Move containers from spill area. Dilute with water ar p if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry naterial and place in an appropriate waste disposal container. Dispose of via censed waste disposal contractor.	, .
Large spill	top leak if without risk. Move containers from spill area. Prevent entry into s rater courses, basements or confined areas. Wash spillages into an effluent eatment plant or proceed as follows. Contain and collect spillage with non- ombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous nd place in container for disposal according to local regulations (see Section ispose of via a licensed waste disposal contractor. Note: see Section 1 for mergency contact information and Section 13 for waste disposal.	earth

Section 7. Handling and storage

Precautions for safe handling

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Protective measures : Put on appropriate personal protective equipment (see Section 8).
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Date of issue/Date of revision	: 17/09/2021	Date of previous issue	:06/04/201

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.

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

: Liquid. [Clear.]
: Yellow./ Brown.
: Not available.
: Not available.
: 7.2
: Not available.
: Not applicable.
: Not available.
: Not available.
Not available.
: Not available.
: Not available.
: Not available.
: Not available.
: Not available.
: Not available.
: 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	: No specific data.
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

Information on toxicological	en	
Acute toxicity		
Conclusion/Summary	1	Not available.
Irritation/Corrosion		
Conclusion/Summary		
Skin	1	Not available.
Eyes	1	Not available.
Respiratory	1	Not available.
Sensitisation		
Conclusion/Summary		
Skin	:	Not available.
Respiratory	:	Not available.
Mutagenicity		
Conclusion/Summary	1	Not available.
Carcinogenicity		
Conclusion/Summary	1	Not available.
Reproductive toxicity		
Conclusion/Summary	:	Not available.
Teratogenicity		
Conclusion/Summary	:	Not available.
Specific target organ toxicit	<u>y (</u>	<u>single exposure)</u>
Not available.		
Specific target organ toxicit	v (repeated exposure)
Not available.	-	
Aspiration hazard		
Not available.		
-	:	Not available.
of exposure		Not available.
of exposure Potential acute health effects	5	
of exposure <u>Potential acute health effects</u> Eye contact	5	No known significant effects or critical hazards
of exposure <u>Potential acute health effects</u> Eye contact Inhalation	2 : :	No known significant effects or critical hazards No known significant effects or critical hazards
	2 :	No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards
of exposure <u>Potential acute health effects</u> Eye contact Inhalation	2 :	No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards
of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion	2 :	No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards
of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion <u>Symptoms related to the phy</u>	2 : : : :	No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards
of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion	<u>è</u> : : : : :	No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards cal, chemical and toxicological characteristic No specific data.
of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion <u>Symptoms related to the phy</u> Eye contact	2 : : : : : :	No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards

Delayed and immediate effects as well as chronic effects from short and long-term exposure Short term exposure Potential immediate : Not available. effects

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Section 11. Toxicological information

		-
Potential delayed effects	1	Not available.
Long term exposure		
Potential immediate effects	1	Not available.
Potential delayed effects	:	Not available.
Potential chronic health eff	ect	<u>s</u>
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	1	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information		
<u>Toxicity</u>		
Conclusion/Summary	: Not available.	
Persistence and degradab	<u>ility</u>	
Conclusion/Summary	: Not available.	
Bioaccumulative potential		
Not available.		
Mobility in soil		
Soil/water partition coefficient (Koc)	: Not available.	
Other adverse effects	: No known significant effects or critical hazards.	

Section 13. Disposal considerations

retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.	Disposal methods	
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Section 14. Transport information

	ADG	ADR/RID	IMDG	ΙΑΤΑ
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 : Not available. to Annex II of Marpol and the IBC Code

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

: Not determined. Australia inventory (AICS)

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.

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Section 16. Any other relevant information

<u>History</u>	
Date of issue/Date of revision	: 17/09/2021
Date of previous issue	: 06/04/2017
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 = Internediate 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	
Not classified.			
References	Preparation of Safety Dat Work Australia	Regulations 2011, as ammended a Sheets for Hazardous Chemicals, Code of Practice, Safe ransport of Dangerous Goods by Road and Rail (ADG), hission	

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed 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.

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SAFETY DATA SHEET

Lyophilized Standard

: Lyophilized Standard
: Not available.
: Not available.
: Powder.
e substance or mixture and uses advised against
: Research.
: Industrial applications.
: BioLegend Inc. 8999 BioLegend Way San Diego, CA 92121 – USA Tel: +1-858-455-9588 (7:00AM – 5:00PM PT, M-F)
 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
: cs@biolegend.com
: +61 (0) 3 9286 8040 (24 hours)

Classification of the substance or mixture	: H302ACUTE TOXICITY (oral) - Category 4H311ACUTE TOXICITY (dermal) - Category 3H331ACUTE 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	

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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 hezerde which do not		May form avalagible dust air mixture if dispersed

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

result in classification

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 necessa	ary 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.

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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.

otential acute health	
Eye contact	 Exposure to airborne concentrations above statutory or recommended exposur 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.
<u> Over-exposure signs</u>	/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.

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.

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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, protec	:tiv	<u>e equipment and emergency procedures</u>
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 cor	<u>nta</u>	inment 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.

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Section 7. Handling and storage

Description of the second second second				
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	Safe Work Australia (Australia, 12/2019). PEAK: 0.11 ppm PEAK: 0.3 mg/m ³

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 measure	
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.

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Section 8. Exposure controls and personal protection

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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	l	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	9	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	i	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

Appearance		
Physical state	:	Solid. [Powder.]
Colour	:	White.
Odour	:	Not available.
Odour threshold	:	Not available.
рН	:	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	1	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.

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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	toxi	icity
/ 10 410	U	Ulty

Product/ingredient name	Result	Species	Dose	Exposure
sodium azide	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.054 to 0.52 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.			
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Section 11. Toxicological information

Specific target organ toxici	ty (single exposure)
Not available.	
Specific target organ toxici	<u>ty (repeated exposure)</u>
Not available.	
Aspiration hazard Not available.	
Information on likely routes of exposure	: Routes of entry anticipated: Oral, Dermal, Inhalation.
Potential acute health effects	<u>S</u>
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.
	<u>ysical, chemical and toxicological characteristics</u>
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.
Short term exposure	cts as well as chronic effects from short and long-term exposure
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
<u>Long term exposure</u>	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	<u>ects</u>
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 toxic	sity

Numerical measures of toxicity

Acute toxicity estimates

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Section 11. Toxicological information

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

Section 12. Ecological information

<u>Toxicity</u>			
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 - Macrocystis pyrifera	96 hours
Conclusion/Summary	: Not available.	•	

Persistence and degradability

Conclusion/Summary	v :	Not available.
o o no a o no a o a na a a	, .	not available.

Bioaccumulative potential

Not available.

<u>Mobility in soil</u>	
Soil/water partition coefficient (Koc)	: 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.

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Section 14. Transport information

r		-		
	ADG	ADR/RID	IMDG	ΙΑΤΑ
UN number	UN3288	UN3288	UN3288	UN3288
UN proper shipping name	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)
Transport hazard class(es)	6.1	6.1	6.1	6.1
Packing group	Ш	111	111	=
Environmental hazards	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 $\leq 5 \text{ L}$ or $\leq 5 \text{ kg}$. 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 ΙΑΤΑ : 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

Transport in bulk according : Not available. to IMO instruments

Section 15. Regulatory information

:09/11/2020

3	, ,
Standard for the Uniform Sch	neduling of Medicines and Poisons
Not regulated.	
Model Work Health and Safe	ty Regulations - Scheduled Substances
No listed substance	
Australia inventory (AICS)	: Not determined.
International regulations	

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: No previous validation

the event of an accident or spillage.

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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

<u>History</u>	
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 = Internediate 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 abovenamed 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.

Date of issue/Date of revision : 0

:09/11/2020



SAFETY DATA SHEET

Matrix A-F

Section 1. Identification			
Product identifier	: Matrix A-F		
Product code	: Not available.		
Other means of dentification	: Not available.		
Product type	: Solid.		
Relevant identified uses of t	he 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)		

Classification of the substance or mixture	: H312 H332	ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4
GHS label elements		
Hazard pictograms	:	
Signal word	: WARNING	
Hazard statements	: H312 + H332	- Harmful in contact with skin or if inhaled.
Precautionary statements		
Prevention		protective gloves and protective clothing. breathing dust.
Response		- IF INHALED: Call a POISON CENTER or doctor if you feel unwell.- IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell.

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Version :1

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Date of issue/Date of revision

:08/07/2021

Section 2. Hazard(s) identification

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 : None known. result in classification

Section 3. Composition and ingredient information

Substance/mixture

Other means of identification

: Mixture

: Not available.

Ingredient name	% (w/w)	CAS number	
sodium azide	≤1.3	26628-22-8	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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 eyelids. Check for minutes. Get med	and remove any	contact lenses. Con		
Inhalation	mask or self-conta or if respiratory arr personnel. It may resuscitation. Get If necessary, call a position and get m tight clothing such decomposition pro	at fumes are still j ined breathing ap est occurs, provid be dangerous to t medical attention poison center or edical attention im as a collar, tie, be ducts in a fire, syn	at rest in a position present, the rescuer paratus. If not breat e artificial respiration he person providing if adverse health eff physician. If uncons mediately. Maintair It or waistband. In con ptoms may be dela surveillance for 48 h	should wear an a hing, if breathing or oxygen by tra aid to give mouth fects persist or an acious, place in re an open airway. case of inhalation yed. The expose	appropriate is irregular ained n-to-mouth e severe. ecovery Loosen of
Skin contact	gloves. Continue the alth effects pers	d clothing thoroug o rinse for at leasi ist or are severe.	Remove contamina hly with water befor 10 minutes. Get m If necessary, call a shoes thoroughly be	e removing it, or edical attention if poison center or p	wear f adverse
Ingestion	drink. Stop if the e induce vomiting ur the head should be attention if adverse mouth to an uncor	exposed person i xposed person fe less directed to de kept low so that health effects pe scious person. If	e dentures if any. If s conscious, give sr els sick as vomiting o so by medical pers vomit does not enter rsist or are severe. unconscious, place tain an open airway	nall quantities of may be dangerou connel. If vomitin r the lungs. Get r Never give anyth in recovery positi	water to us. Do not g occurs, medical ing by ion and get
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Matrix A-F

Section 4. First aid measures

as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects			
Eye contact	: No known significant effects or critical hazards.		
Inhalation	: Harmful if inhaled.		
Skin contact	: Harmful in contact with skin.		
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	: 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.

Section 5. Firefighting measures

See toxicological information (Section 11)

Ŭ	5
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	: No specific fire or explosion hazard.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: nitrogen oxides 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.
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Section 6. Accidental release measures

Personal precautions, protect	tiv	e 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. 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 cor	ntai	inment and cleaning up
Small spill	:	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	:	Move containers from spill area. 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. 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 ingest. Avoid contact with eyes, skin and clothing. 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. 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. 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.

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Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name		Exposure limits		
sodium azide		Safe Work Australia (Australia, 12/2019). PEAK: 0.11 ppm PEAK: 0.3 mg/m ³		
Appropriate engineering controls	ventilation or other engir	ventilation. Use process enclosures, local exhaust neering controls to keep worker exposure to airborne recommended or statutory limits.		
Environmental exposure controls	they comply with the req cases, fume scrubbers,	missions from ventilation or work process equipment should be checked to ensure ey comply with the requirements of environmental protection legislation. In some ases, fume scrubbers, filters or engineering modifications to the process quipment will be necessary to reduce emissions to acceptable levels.		
Individual protection meas	<u>ures</u>			
Hygiene measures	eating, smoking and usin Appropriate techniques s Wash contaminated clot	and face thoroughly after handling chemical products, before ng the lavatory and at the end of the working period. should be used to remove potentially contaminated clothing. hing before reusing. Ensure that eyewash stations and to the workstation location.		
Eye/face protection	assessment indicates th gases or dusts. If conta	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	be worn at all times whe this is necessary. Consi check during use that the should be noted that the different for different glov	ervious gloves complying with an approved standard should n handling chemical products if a risk assessment indicates dering the parameters specified by the glove manufacturer, e gloves are still retaining their protective properties. It time to breakthrough for any glove material may be we manufacturers. In the case of mixtures, consisting of protection time of the gloves cannot be accurately		
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		
Other skin protection	: Appropriate footwear an selected based on the ta	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 appropriate standard or	d potential for exposure, select a respirator that meets the certification. Respirators must be used according to a ogram to ensure proper fitting, training, and other important		

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: Solid. [Cake.]
Colour	: White.
Odour	: Not available.
Odour threshold	: Not available.
рН	: Not available.
Melting point	: Not available.
Boiling point, initial boiling point, and boiling range	: Not available.
Flash point	: Not applicable.
Evaporation rate	: Not available.
Flammability	: Not available.
Lower and upper explosion limit/flammability limit	: Not applicable.
Vapour pressure	: Not available.
Relative vapour density	: Not applicable.
Relative density	: Not available.
Solubility	: Not available.
Partition coefficient: n- octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Not applicable.
Flow time (ISO 2431)	: Not available.
Particle characteristics	
Median particle size	: Not available.
Additional information	
Physical/chemical properties comments	: No additional information.

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.

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Section 10. Stability and reactivity

Incompatible materials

: Reactive or incompatible with the following materials: oxidising materials and metals.

Hazardous decomposition	: Under normal conditions of storage and use, hazardous decomposition products
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		0.054 to 0.52	4 hours
	LD50 Dermal	Female Rabbit	mg/l 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.			
Specific target organ toxici	<u>ty (single exposure)</u>			
Not available.				
Specific target organ toxici	t <u>y (repeated exposure)</u>			
Not available.				
Aspiration hazard				
Not available.				
nformation on likely routes	: Routes of entry anticipated: Or	al Dermal Inha	lation	
of exposure				

Potential acute health effects

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Matrix A-F	
Section 11. Toxico	ological information
Eye contact	: No known significant effects or critical hazards.
Inhalation	: Harmful if inhaled.
Skin contact	: Harmful in contact with skin.
Ingestion	: No known significant effects or critical hazards.
Symptoms related to the phy	vsical, chemical and toxicological characteristics
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.
· · · · · ·	ts as well as chronic effects from short and long-term exposure
Short term exposure Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
<u>Long term exposure</u>	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	<u>ects</u>
General	: No known significant effects or critical hazards.
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

Product/ingredient name	Oral (mg/ kg)	Dermal (mg/kg)	(gases)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Matrix A-F	2036.4	1508.4	N/A	N/A	4.1
sodium azide	27	20	N/A	N/A	0.054

Section 12. Ecological information

Toxicity

Matrix A-F

Section 12. Ecological information

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 - Macrocystis pyrifera	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Not available.

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	ΙΑΤΑ
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
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Matrix A-F						
Section 14. Transport information						
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 : Not available. to IMO instruments

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 (AIIC) : Not determined.

International regulations

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

<u>History</u>				
Date of issue/Date of revision	: 08/07/202	21		
Date of previous issue	: 08/07/202	21		
Version	: 1			
Prepared by	: Sphera S	olutions		
Key to abbreviations	ADR = TH Dangerou ATE = Ac BCF = Bi GHS = G	ustralian Dangerous Goods ne European Agreement co us Goods by Road sute Toxicity Estimate oconcentration Factor lobally Harmonized System ternational Air Transport As	oncerning the Interna	Ŭ
Date of issue/Date of revision	: 08/07/2021	Date of previous issue	: 08/07/2021	Version : 1 10/11

Matrix A-F

Section 16. Any other relevant information

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 (dermal) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	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

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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.

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SAFETY DATA SHEET

Neutralization Buffer

Section 1. Identification						
Product identifier	: Neutralization Buffer					
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.					
Supplier/Manufacturer	: BioLegend Inc. 9727 Pacific Heights Blvd. San Diego, CA 92121 – USA Tel: +1-858-455-9588					
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 oral toxicity: 5% Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 3% 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.

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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	1	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	:	Causes severe digestive tract burns.

result in classification

Section 3. Composition and ingredient information

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

Ingredient name	% (w/w)	CAS number
4-(2-hydroxyethyl)piperazin-1-ylethanesulphonic acid	≤5	7365-45-9
sodium hydroxide	≤3	1310-73-2

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. 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.

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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 effect	<u>ts</u>	
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	:	Severely corrosive to the digestive tract. Causes severe burns.
Over-exposure signs/symp	ton	<u>15</u>
Eye contact	:	Adverse symptoms may include the following: pain watering redness
Inhalation	1	No specific data.
Skin contact	:	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	1	Adverse symptoms may include the following: stomach pains
Indication of immediate med	<u>ica</u>	l 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 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 nitrogen oxides sulfur oxides 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.
Hazchem code	: 2X

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

	<u>e equipment and emergency procedures</u>
:	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.
:	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".
:	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).
<u>nta</u>	inment and cleaning up
:	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.
:	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). 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.
	: : <u>nta</u> i

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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 acids. 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 acids. 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 hydroxide			Safe Work Austra TWA: 2 mg/m ³ 8		1/2014)).
Appropriate engineering controls	enclosure	erations generate dust, fur s, local exhaust ventilation to airborne contaminants	n or other engineering	controls to kee	ep worke	er
Environmental exposure controls	they com cases, fui	s from ventilation or work p oly with the requirements on me scrubbers, filters or eng at will be necessary to redu	of environmental prote gineering modificatior	ection legislations to the proces	n. In so	
Individual protection meas	<u>sures</u>					
Hygiene measures	eating, sn Appropria Contamin contamin	nds, forearms and face the noking and using the lavate te techniques should be us ated work clothing should ated clothing before reusin are close to the workstation	ory and at the end of sed to remove potent not be allowed out of g. Ensure that eyewa	the working pen ially contamina the workplace.	riod. ted cloth Wash	hing.
Eye/face protection	assessme gases or unless the	ewear complying with an a ent indicates this is necess dusts. If contact is possibl e assessment indicates a h ind/or face shield. If inhala nstead.	ary to avoid exposure le, the following prote higher degree of prote	e to liquid splas ction should be ection: chemica	hes, mis worn, al splasł	sts, h
Skin protection	1					
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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

<u>Appearance</u>		
Physical state	:	Liquid. [Clear.]
Colour	:	Colourless. to Pink. [Light]
Odour	:	Not available.
Odour threshold	:	Not available.
рН	:	>13
Melting point	:	Not available.
Boiling point	:	Not available.
Flash point	1	Not available.
Evaporation rate	1	Not available.
Flammability (solid, gas)	1	Not applicable.
Lower and upper explosive (flammable) limits	1	Not available.
Vapour pressure	1	Not available.
Vapour density	:	Not available.
Relative density	1	Not available.
Solubility	1	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n- octanol/water	1	Not available.
Auto-ignition temperature	1	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Not available.
Flow time (ISO 2431)	:	Not available.

:03/04/2017

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 high temperatures. Keep away from heat and direct sunlight.
Incompatible materials	: Reactive or incompatible with the following materials: acids
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 hydroxide	LD50 Dermal	Rabbit	1350 mg/kg	-

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
sodium hydroxide	Eyes - Mild irritant	Rabbit	-	400	-
2				Micrograms	
	Eyes - Severe irritant	Rabbit	-	24 hours 50	-
				Micrograms	
	Eyes - Severe irritant	Rabbit	-	1 Percent	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes	-
				1 milligrams	
	Skin - Severe irritant	Rabbit	-	24 hours 500	-
				milligrams	

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		

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Section 11. Toxicological information

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name		Route of exposure	Target organs
4-(2-hydroxyethyl)piperazin-1-ylethanesulphonic acid	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure) Not available.

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	1	No known significant effects or critical hazards.
Skin contact	1	Causes severe burns. May cause an allergic skin reaction.
Ingestion	:	Severely corrosive to the digestive tract. Causes severe burns.

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 av	vailable.		
Potential delayed effects	: Not av	vailable.		
Long term exposure				
Potential immediate effects	: Not av	vailable.		
Potential delayed effects	: Not av	vailable.		
Potential chronic health ef	<u>ifects</u>			
Not available.				
General		e sensitized, a severe allergic ry low levels.	reaction may occur who	en subsequently exposed
Carcinogenicity	: No kn	nown significant effects or crit	ical hazards.	
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Section 11. Toxicological information

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

Route	ATE value
Dermal	67500 mg/kg

Section 12. Ecological information

<u>Toxicity</u>			
Product/ingredient name	Result	Species	Exposure
sodium hydroxide	Acute EC50 40.38 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 125 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
Conclusion/Summary	: Not available.		
Persistence and degradabil	lity		
Conclusion/Summary	: Not available.		
Bioaccumulative potential			
Not available.			
Mobility in soil			
Soil/water partition coefficient (Koc)	: Not available.		
Other adverse effects	: No known significant effects or criti	cal hazards.	
Section 13. Dispo	osal considerations		
Disposal methods	: The generation of waste should be Disposal of this product, solutions a with the requirements of environme and any regional local authority req recyclable products via a licensed v disposed of untreated to the sewer all authorities with jurisdiction. Was landfill should only be considered w its container must be disposed of ir	and any by-products should at all tir ental protection and waste disposal uirements. Dispose of surplus and waste disposal contractor. Waste s unless fully compliant with the requ ste packaging should be recycled. /hen recycling is not feasible. This	nes comply legislation non- hould not be irements of Incineration of material and 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	ΙΑΤΑ
UN number	UN3267	UN3267	UN3267	UN3267
UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N. O.S. (sodium hydroxide)	CORROSIVE LIQUID, BASIC, ORGANIC, N. O.S. (sodium hydroxide)	CORROSIVE LIQUID, BASIC, ORGANIC, N. O.S. (sodium hydroxide)	Corrosive liquid, basic, organic, n.o.s. (sodium hydroxide)
Transport hazard class(es)	8	8	8	8
Packing group	Ш	111	111	111
Environmental hazards	No.	No.	No.	No.
Additional information	Hazchem code 2X Special provisions 223, 274	Hazard identification number 80 Limited quantity 5 L Special provisions 274 Tunnel code (E)	Emergency schedules F-A, S-B Special provisions 223, 274	Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 852. Cargo Aircraft Only: 60 L. Packaging instructions: 856. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y841. Special provisions 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 : Not available. to Annex II of Marpol and the IBC Code

Section 15. Regulatory information

U					
Standard Uniform Schedu	le of Medicine a	ind Poisons			
5					
Model Work Health and Sa	afety Regulation	s - Scheduled Substance	<u>s</u>		
No listed substance					
Australia inventory (AICS)	: All compo	nents are listed or exempte	ed.		
International regulations					
Chemical Weapon Conve	ention List Sche	dules I, II & III Chemicals			
Not listed.					
Montreal Protocol (Anne)	<u>xes A, B, C, E)</u>				
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Section 15. Regulatory information

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

<u>History</u>	
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Version	: 1.01
Prepared by	: Sphera Solutions
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 = Internediate 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
Eye Dam. 1, H318	On basis of test data On basis of test data 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

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed 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 t	he 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.

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Section 3. Composition and ingredient information

Substance/mixture Other means of identification

: Mixture

: Not available.

CAS number/other identifiers

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/sympto	oms
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.

Ingestion : No specific data.

Indication of immediate me	dical 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)

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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	o action shall be taken involving any personal risk or without suitable training. vacuate surrounding areas. Keep unnecessary and unprotected personnel fr ntering. Do not touch or walk through spilt material. Put on appropriate perso rotective equipment.	om		
For emergency responders	specialised clothing is required to deal with the spillage, take note of any formation in Section 8 on suitable and unsuitable materials. See also the formation in "For non-emergency personnel".			
Environmental precautions	void dispersal of spilt material and runoff and contact with soil, waterways, dra nd sewers. Inform the relevant authorities if the product has caused environn ollution (sewers, waterways, soil or air).			
Methods and material for con	nent and cleaning up			
Small spill	top leak if without risk. Move containers from spill area. Dilute with water and p if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry laterial and place in an appropriate waste disposal container. Dispose of via a censed waste disposal contractor.			
Large spill	top leak if without risk. Move containers from spill area. Prevent entry into se ater courses, basements or confined areas. Wash spillages into an effluent eatment plant or proceed as follows. Contain and collect spillage with non- ombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous nd place in container for disposal according to local regulations (see Section ispose of via a licensed waste disposal contractor. Note: see Section 1 for mergency contact information and Section 13 for waste disposal.	earth		

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Section 7. Handling and storage

Precautions for safe handling	g	
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.

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Section 9. Physical and chemical properties

<u>Appearance</u>		
Physical state	:	Liquid.
Colour	:	Colourless. to Yellow.
Odour	:	Not available.
Odour threshold	:	Not available.
рН	:	7.2
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.

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	:
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicologic	cal effects				
Acute toxicity Conclusion/Summary	: Not availa	able.			
Irritation/Corrosion Conclusion/Summary					
Skin	: Not availa	able.			
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Section 11. Toxicological information

Eyes	: Not available.
Respiratory	: Not available.
Sensitisation	
Conclusion/Summary	
Skin	: Not available.
Respiratory	: Not available.
<u>Mutagenicity</u>	
Conclusion/Summary	: Not available.
Carcinogenicity	
Conclusion/Summary	: Not available.
Reproductive toxicity	
Conclusion/Summary	: Not available.
<u>Teratogenicity</u>	
Conclusion/Summary	: Not available.
Specific target organ toxici	ty (single exposure)
Not available.	
Specific target organ toxici	ty (repeated exposure)
Not available.	ty (repeated exposure)
Aspiration hazard	
Not available.	
Information on likely routes of exposure 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 phy	vsical, chemical and toxicological characteristics
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.
Balanced as 11 and 11 and 11	
	cts as well as chronic effects from short and long-term exposure
Short term exposure	A later second and the
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
<u>Long term exposure</u>	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	ects
Not available.	
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Section 11. Toxicological information

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

<u>Toxicity</u> Conclusion/Summary	lot available.	
Persistence and degradabilit Conclusion/Summary	lot available.	
Bioaccumulative potential Not available.		
Mobility in soil Soil/water partition coefficient (Koc)	lot available.	
Other adverse effects	lo known significant effects or critical hazards.	
Section 13. Dispo	considerations	
Disposal methods	he generation of waste should be avoided or minimised wherever possible. bisposal of this product, solutions and any by-products should at all times con- rith the requirements of environmental protection and waste disposal legislat nd any regional local authority requirements. Dispose of surplus and non- ecyclable products via a licensed waste disposal contractor. Waste should r isposed of untreated to the sewer unless fully compliant with the requirement Il authorities with jurisdiction. Waste packaging should be recycled. Inciner andfill should only be considered when recycling is not feasible. This materials s container must be disposed of in a safe way. Empty containers or liners me etain some product residues. Avoid dispersal of spilt material and runoff and ontact with soil, waterways, drains and sewers.	mply tion not be nts of ration or al and nay

Section 14. Transport information

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

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 : Not available. to Annex II of Marpol and the IBC Code

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

<u>History</u>	
Date of issue/Date of revision	: 15/07/2021
Date of previous issue	: 19/07/2016
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 = Internediate 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	
Not classified.			
References	Preparation of Safety Dat Work Australia	Regulations 2011, as ammended a Sheets for Hazardous Chemicals, Code of Practice, Safe ransport of Dangerous Goods by Road and Rail (ADG), hission	

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed 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. Identifi	cation
Product identifier	: Stop Solution
Product code	: Not available.
Other means of identification	: Not available.
Product type	: Liquid.
Relevant identified uses of t	he 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

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.

5%

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

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Section 2. Hazard(s) identification

	 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. P303 + 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.
	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 : None known. result in classification

Section 3. Composition and ingredient information

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

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 eff	ects
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/sym	iptoms
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 me	edical 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 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)

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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 con	ta	inment 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 spill product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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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

<u>Appearance</u>		
Physical state	:	Liquid. [Clear.]
Colour	1	Colourless.
Odour	:	Not available.
Odour threshold	:	Not available.
рН	1	1.1
Melting point	1	Not available.
Boiling point	1	Not available.
Flash point	1	Not available.
Evaporation rate	1	Not available.
Flammability (solid, gas)	1	Not applicable.
Lower and upper explosive	:	Not available.
(flammable) limits		
Vapour pressure	÷	Not available.
Vapour density	4	Not available.
Relative density	1	Not available.
Solubility	1	Not available.
Partition coefficient: n-	:	Not available.
octanol/water		
Auto-ignition temperature	÷	Not available.
Decomposition temperature	÷	Not available.
Viscosity	1	Not available.
Flow time (ISO 2431)	:	Not available.

Date of issue/Date of revision : 2

: 24/09/2021

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

Section 11. Toxicological information

should not be produced.

Information on toxicological effects

Hazardous decomposition

products

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

: Under normal conditions of storage and use, hazardous decomposition products

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.				
<u>Mutagenicity</u>					
Conclusion/Summary	: Not available.				
Carcinogenicity					
Conclusion/Summary	: Not available.				
Reproductive toxicity					
Conclusion/Summary	: Not available.				
Teratogenicity					
Conclusion/Summary	: Not available.				
Specific target organ toxici	ity (single exposure)				

Specific target organ toxicity (single exposure)

Date of issue/Date of revision

: 24/09/2021

Date of previous issue : 03

:03/04/2017

Section 11. Toxicological information

Name		Category	Route of exposure	Target organs
Proprietary (Organic acid)		Category 3	Not applicable.	Respiratory tract irritation
Specific target organ toxic Not available.	ity (repeated ex	<u>posure)</u>		
Aspiration hazard				
Not available.				
nformation on likely routes of exposure	: Routes of e	ntry anticipated: Oral, Dermal,	, Inhalation.	
Potential acute health effect	S			
Eye contact		ious eye damage.		
Inhalation		significant effects or critical ha	zards.	
Skin contact		vere burns. May cause an alle		
Ingestion		significant effects or critical ha	-	
Symptoms related to the ph	vsical, chemica	I and toxicological characte	ristics	
Eye contact		mptoms may include the follow		
	pain watering redness		0	
Inhalation	: No specific	data.		
Skin contact	-	mptoms may include the follov ation	ving:	
Ingestion	-	mptoms may include the follow	ving:	
Delayed and immediate effe	cts as well as c	hronic effects from short an	ıd long-term exposı	Ire
Short term exposure				
Potential immediate effects	: Not availab	le.		
Potential delayed effects	: Not availab	le.		
Long term exposure				
Potential immediate effects	: Not availab	le.		
Potential delayed effects	: Not availab	le.		
Potential chronic health eff	<u>fects</u>			
Not available.				
General	: Once sensi to very low	tized, a severe allergic reactio levels.	n may occur when su	ubsequently exposed
Carcinogenicity	-	significant effects or critical ha	zards.	
Mutagenicity		significant effects or critical ha		
Teratogenicity		significant effects or critical ha		
Developmental effects		significant effects or critical ha		
Fertility effects		significant effects or critical ha		

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

Т	oxi	c	itv
_			

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	S	Biodegradability
Proprietary (Organic acid)	-		-		Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Proprietary (Organic acid)	-1.3	-	low

Mobility in soil

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

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

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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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

•				
	ADG	ADR/RID	IMDG	IATA
UN number	UN1789	UN1789	UN1789	UN1789
UN proper shipping name	HYDROCHLORIC ACID solution	HYDROCHLORIC ACID solution	HYDROCHLORIC ACID solution	Hydrochloric acid solution
Transport hazard class(es)	8	8	8	8
Packing group	111	Ш	ш	
Environmental hazards	No.	No.	No.	No.
Additional information	Hazchem code 2R Special provisions 223	Hazard identification number 80 Limited quantity 5 L Special provisions 520 Tunnel code (E)	Emergency schedules F-A, S-B Special provisions 223	Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 852. Cargo Aircraft Only: 60 L. Packaging instructions: 856. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y841. Special provisions 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 : Not available. to Annex II of Marpol and the IBC Code

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons	
Not regulated.	
Model Work Health and Safety Regulations - Schedule	d Substances
No listed substance	
Australia inventory (AICS) : All components are list	ed or exempted.
International regulations Chemical Weapon Convention List Schedules I, II & I	II Chemicals

Date of issue/Date of revision	: 24/09/2021	Date of previous issue	:03/04/2017	Version : 2	10/11
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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

<u>History</u>

motory	
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 = Internediate 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 Eye Dam. 1, H318 Skin Sens. 1, H317		On basis of test data On basis of test data Calculation method
References	: Work Health and Safety Regulations 2011, as ammended Preparation of Safety Data Sheets for Hazardous Chemicals, Code of Practice, Sa 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 abovenamed 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.

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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 t	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

Substance/mixture

Other means of identification

- : Mixture
- : 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 fire	<u>st aid measures</u>
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 healt	<u>n effects</u>
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 immediat	e 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.

See toxicological information (Section 11)

Protection of first-aiders

: No action shall be taken involving any personal risk or without suitable training.

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	ate surrounding areas. Kee	any personal risk or without suitable training. ep unnecessary and unprotected personnel from ough spilt material. Put on appropriate personal		
For emergency responders		to deal with the spillage, take note of any le and unsuitable materials. See also the y personnel".		
Environmental precautions	wers. Inform the relevant a on (sewers, waterways, soil	nd runoff and contact with soil, waterways, drains authorities if the product has caused environmental or air).		
Methods and material for cor	and cleaning up			
Small spill	ater-soluble. Alternatively,	ntainers from spill area. Dilute with water and mop or if water-insoluble, absorb with an inert dry ate waste disposal container. Dispose of via a r.		
Large spill	courses, basements or con ent plant or proceed as folk stible, absorbent material e ace in container for disposa se of via a licensed waste di	ntainers from spill area. Prevent entry into sewers, fined areas. Wash spillages into an effluent ows. Contain and collect spillage with non- e.g. sand, earth, vermiculite or diatomaceous earth I according to local regulations (see Section 13). (sposal contractor. Note: see Section 1 for ad Section 13 for waste disposal.		

Section 7. Handling and storage

Precautions for safe handling

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Protective measures : Put on appropriate personal protective equipment (see Section 8).
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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 limit None.	<u>its</u>	
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 measured	<u>res</u>	
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	
Physical state	: Liquid. [Clear.]
Colour	: Colourless. to Blue. [Light]
Odour	: Not available.
Odour threshold	: Not available.
рН	: 7.2
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	: Not available.
(flammable) limits	
Vapour pressure	: Not available.
Vapour density	: Not available.
Relative density	: Not available.
Solubility	: Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	
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 high temperatures. Keep away from heat and direct sunlight.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids and alkalis.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Information on toxicological effects

Information on toxicological	
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.
<u>Mutagenicity</u>	
Conclusion/Summary	: Not available.
Carcinogenicity	
Conclusion/Summary	: Not available.
Reproductive toxicity	
Conclusion/Summary	: Not available.
Terreterenisity	
<u>Teratogenicity</u>	
Conclusion/Summary	: Not available.
Conclusion/Summary Specific target organ toxici Not available.	<u>ty (single exposure)</u>
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard	<u>ty (single exposure)</u>
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available.	t <u>y (single exposure)</u> t <u>y (repeated exposure)</u>
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available.	ty (single exposure) ty (repeated exposure) : Not available.
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects	t <u>y (single exposure)</u> t <u>y (repeated exposure)</u> : Not available. <u>S</u>
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact	ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards.
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation	ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards. : No known significant effects or critical hazards.
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation Skin contact	ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards. : No known significant effects or critical hazards. : No known significant effects or critical hazards. : No known significant effects or critical hazards.
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation	ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards. : No known significant effects or critical hazards.
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion	 ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards.
Conclusion/Summary Specific target organ toxicit Not available. Specific target organ toxicit Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion Symptoms related to the phy Eye contact	 ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards. ysical, chemical and toxicological characteristics : No specific data.
Conclusion/Summary Specific target organ toxici Not available. Specific target organ toxici Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion Symptoms related to the phy Eye contact Inhalation	 ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards.
Conclusion/Summary Specific target organ toxicit Not available. Specific target organ toxicit Not available. Aspiration hazard Not available. Information on likely routes of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion Symptoms related to the phy Eye contact	 ty (single exposure) ty (repeated exposure) : Not available. S : No known significant effects or critical hazards. ysical, chemical and toxicological characteristics : No specific data.

Short term exposure		
Potential immediate	: Not available.	
effects		

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Potential delayed effects	1	Not available.
Long term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	1	Not available.
Potential chronic health eff	ect	<u>S</u>
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	1	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 degradab	<u>ility</u>	
Conclusion/Summary	: Not available.	
Bioaccumulative potential		
Not available.		
Mobility in soil		
Soil/water partition coefficient (Koc)	: Not available.	
Other adverse effects	: No known significant effects or critical hazards.	
Section 13. Disp	osal 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.

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Section 14. Transport information

	ADG	ADR/RID	IMDG	ΙΑΤΑ
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 : Not available. to Annex II of Marpol and the IBC Code

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

<u>History</u>	
Date of issue/Date of revision	: 17/9/2021
Date of previous issue	: 30/03/2017
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 = Internediate 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	
Not classified.			
References	Preparation of Safety Dat Work Australia	Regulations 2011, as ammended a Sheets for Hazardous Chemicals, Code of Practice, Safe ransport of Dangerous Goods by Road and Rail (ADG), hission	

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed 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.

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SAFETY DATA SHEET

Wash Buffer 20x

Section 1. Identifie	cation
Product identifier	: Wash Buffer 20x
Product code	: Not available.
Other means of identification	: Not available.
Product type	: Liquid.
Relevant identified uses of t	he 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 8%	•
	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxi 20.8%	City.
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.	
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Section 3. Composition and ingredient information

Substance/mixture

Other means of identification

- : Mixture
- : 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 fi	rst 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 healt	<u>n effects</u>
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 immediat	e 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.

See toxicological information (Section 11)

Protection of first-aiders

: No action shall be taken involving any personal risk or without suitable training.

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, protect	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 con	ta	inment 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	g	
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 contaminants.	ventilation should be sufficient to control worker exposure to airborne
Environmental exposure controls	hey comply w ases, fume s	m ventilation or work process equipment should be checked to ensure ith the requirements of environmental protection legislation. In some crubbers, filters or engineering modifications to the process 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.		
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Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	: Liquid. [Clear.]
Colour	: Colourless.
Odour	: Not available.
Odour threshold	: Not available.
рН	: 6.25 to 6.35
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	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Information on toxicological effects

Acute toxicity Conclusion/Summary	
Conclusion/Summany	
Conclusion/Summary	: Not available.
Irritation/Corrosion	
Conclusion/Summary	
Skin	: Not available.
Eyes	: Not available.
Respiratory	: Not available.
<u>Sensitisation</u>	
Conclusion/Summary	
Skin	: Not available.
Respiratory	: Not available.
<u>Mutagenicity</u>	
Conclusion/Summary	: Not available.
Carcinogenicity	
Conclusion/Summary	: Not available.
Reproductive toxicity	
Conclusion/Summary	: Not available.
Teratogenicity	
Conclusion/Summary	: Not available.
Specific target organ toxicity	<u>y (single exposure)</u>
Not available.	
Specific target organ toxicity Not available. Aspiration hazard	
Not available.	
Information on likely routes	: Routes of entry anticipated: Oral, Dermal, Inhalation.
nformation on likely routes of exposure	: Routes of entry anticipated: Oral, Dermal, Inhalation.
nformation on likely routes of exposure	 Routes of entry anticipated: Oral, Dermal, Inhalation. No known significant effects or critical hazards.
nformation on likely routes of exposure Potential acute health effects	
Information on likely routes of exposure <u>Potential acute health effects</u> Eye contact	: No known significant effects or critical hazards.
Information on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation	No known significant effects or critical hazards.No known significant effects or critical hazards.
nformation on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion	 No known significant effects or critical hazards.
nformation on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion <u>Symptoms related to the phys</u> Eye contact	 No known significant effects or critical hazards.
nformation on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion	 No known significant effects or critical hazards. Sical, chemical and toxicological characteristics No specific data. No specific data.
nformation on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion <u>Symptoms related to the phys</u> Eye contact	 No known significant effects or critical hazards.
nformation on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion <u>Symptoms related to the phys</u> Eye contact Inhalation	 No known significant effects or critical hazards. Sical, chemical and toxicological characteristics No specific data. No specific data.
Information on likely routes of exposure Potential acute health effects Eye contact Inhalation Skin contact Ingestion Symptoms related to the phys Eye contact Inhalation Skin contact Inhalation Skin contact Ingestion	 No known significant effects or critical hazards.
Information on likely routes of exposure <u>Potential acute health effects</u> Eye contact Inhalation Skin contact Ingestion <u>Symptoms related to the phys</u> Eye contact Inhalation Skin contact Inhalation Skin contact Ingestion	 No known significant effects or critical hazards. Sical, chemical and toxicological characteristics No specific data. No specific data. No specific data. No specific data.

	-
Potential delayed effects	: Not available.
Long term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	<u>ects</u>
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		
<u>Toxicity</u>		
Conclusion/Summary	: Not available.	
Persistence and degrada	bility	
Conclusion/Summary	: Not available.	
Bioaccumulative potentia	<u>al</u>	
Not available.		
Mobility in soil		
Soil/water partition coefficient (Koc)	: 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.
	contact with soil, waterways, drains and sewers.

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Section 14. Transport information

	ADG	ADR/RID	IMDG	ΙΑΤΑ
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 : Not available. to Annex II of Marpol and the IBC Code

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

N		
<u>History</u>		
Date of issue/Date of revision	22/09/2021	
Date of previous issue	: 21/04/2017	
Version	: 2	
Prepared by	: BioLegend	
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 = International Air Transport Association IBC = 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) SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations 	

Procedure used to derive the classification

Classification		Justification	
Not classified.			
References	Preparation of Safety Dat Work Australia	Regulations 2011, as ammended a Sheets for Hazardous Chemicals, Code of Practice, Safe ransport of Dangerous Goods by Road and Rail (ADG), hission	

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed 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.

Date of issue/Date of revision	: 22/09/2021	Date of previous issue	: 21/04/2017	Version : 2 9/9