



Akadeum Life Sciences, Inc.

Title	GHS SDS Calcium Chloride 1.0 M Solution
Document type	Safety Data Sheet (5.0)
Document ID	SDS-20
Author	Angela Pinkston
Owner	Angela Pinkston
Reviewer(s)	Nadia Petlakh <i>reviewed at 2023-09-21 15:21 (UTC -0400)</i> Ryan Chandler <i>reviewed at 2023-10-30 09:48 (UTC -0400)</i> Vanessa Kelchner <i>reviewed at 2023-11-01 12:46 (UTC -0400)</i>
Approver(s)	Vanessa Kelchner <i>approved at 2023-11-05 08:00 (UTC -0500)</i>
Approval date	Nov 05 2023
Effective date	Nov 05 2023
Next periodic review date	Oct 23 2027

1. Identification

Product Identifier	
Trade Name	Calcium Chloride 1.0 M Solution
Synonym(s)	Calcium Chloride, Calcium Dichloride
SKU Number(s)	11510-211

Relevant identified uses of substance or mixture and uses advised against	No further relevant information available.
Application of the substance/the preparation	Laboratory chemicals

Details of the supplier of the Safety Data Sheet

Manufacturer/Supplier Details	Akadeum Life Sciences, Inc. 674 S. Wagner Rd. Ste 30 Ann Arbor, MI 48103
Emergency Contact Information	Chemtrec Toll Free: 1-800-424-9300

Catalog Number(s)	11510-211
Recommended use of the chemical and restrictions on use	For research use only. Not intended for human or animal diagnostic or therapeutic area.

2. Hazard Identification

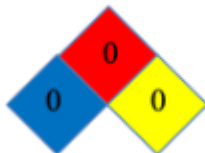
Classification of the substance/mixture

Not a hazardous substance or mixture
Classification according to Regulation (EC) No 1272/2008. The product is not classified according to the CLP regulation.

GHS Label elements, including precautionary statements

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

Hazard Statements	None
Signal word	Danger

Precautionary Statements	None						
NFPA Ratings (Scale 0-4)							
HMIS Ratings (Scale 0-4)	<table> <tr> <td>HEALTH</td><td>1</td></tr> <tr> <td>FIRE</td><td>0</td></tr> <tr> <td>REACTIVITY</td><td>0</td></tr> </table>	HEALTH	1	FIRE	0	REACTIVITY	0
HEALTH	1						
FIRE	0						
REACTIVITY	0						

Other hazards**Results of PBT and vPvB assessment**

PBT	Not applicable
vPvB	Not applicable

3. Composition / Information on Ingredients

<u>Chemical Characterization</u>	Mixtures
Description	Calcium chloride

Chemical Name	Identifiers	Hazardous	Composition (wt. %)
Calcium chloride	10032-04-8	Nonhazardous	10-12% w/w
Water	7732-18-5	Nonhazardous	88-89% w/w

Additional Information

Any concentration shown as a range or Not Applicable is to protect confidentiality or is due to batch variation. For the wording of the listed risk phrases refer to Section 16.

4. First Aid Measures

Description of first aid measures

After inhalation	Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
After skin contact	Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing.
After eye contact	Rinse opened eye for several minutes under running water.
After ingestion	Rinse mouth. Seek medical attention if you feel unwell.

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

In case of accident, seek medical advice immediately and show the label and the SDS where possible

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing agents	Non-combustible. Use a fire fighting agent suitable for surrounding fire.
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Special hazards arising from the substance or mixture

No further relevant information available.

Advice for firefighters

Protective equipment	Wear self-contained respiratory protective device. Do not inhale explosion gases or combustion gases. Wear fully protective suit.
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6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Wear protective clothing.
Environmental precautions	Avoid release to the environment.

Methods and material for containment and cleaning up	Collect as much of the spilled material as possible. Absorb with liquid-binding material (absorbing paper or cloth). Dispose of absorbing material in regular laboratory trash as long as it's not contaminated with other hazardous or biohazardous substances. Ensure adequate ventilation.
Reference to other sections	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment.. See Section 13 for disposal information.

7. Handling and Storage

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Not for consumer sale or use. Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling.

Information about fire and explosion protection

No special measures required.

Conditions for safe storage, including and incompatibilities

Keep away from heat, sources of ignition and incompatibles such as oxidizing agents.

Storage

CaCl₂ 1.0M is to be stored frozen but that's for the integrity of the product

Specific end use(s)

No further relevant information available.

8. Exposure Controls / Personal Protection

Additional information about design of technical facilities: No further data; Reference Section 7.

Control parameters

Ingredients with limit values that require monitoring at the workplace:

Occupational exposure limits

Ingredient	C.A.S. no.	Agency	Limit Type
N/A	N/A	N/A	N/A
ACGIH: American Conference of Governmental Industrial Hygienists NIOSH: National Institute for Occupational Safety and Health			
Appropriate Engineering Controls		Safety shower and eye wash. Ensure adequate ventilation.	
Additional information		This product does not contain any hazardous materials with occupational exposure limits.	

Exposure controls

Personal protective equipment	The usual precautionary measures are to be adhered to when handling chemicals.
General protective and hygienic measures	Change contaminated clothing. Wash hands after working with product.
Respiratory protection	In case of brief exposure or low pollution, use respiratory filter device. In case of intensive or longer exposure, use self-contained respiratory protective device.
Protection of hands	The glove material has to be impermeable and resistant to the product. Change gloves upon contamination with product or structural damage to the glove (e.g., tearing).
Material of gloves	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material	The exact break through time is to be determined by the protective glove manufacturer.
Eye protection	Safety glasses, at minimum, or goggles.

9. Physical and Chemical Properties

Information on basic physical and chemical properties**General Information****Appearance**

Form	Clear liquid; Clear solution, liquid at RT
Color	Clear
Odor	No odor
Odor threshold	Not determined
pH-value	Not applicable
Change in condition	
Melting point/freezing point	Not determined
Initial boiling point and boiling range	Not determined
Flash point	Not applicable
Flammability (solid, gas)	Not applicable
Ignition temperature	
Decomposition temperature	Not determined
Auto-ignition temperature	Product is not self-igniting
Explosive properties	Product does not present an explosion hazard.
Explosion limits	
Lower	Not determined
Upper	Not determined
Vapor pressure	Not determined
Density	Not determined
Relative density	Not determined
Vapor density	Not determined
Evaporation rate	Not determined
Relative density (water)	No data available
Solubility in/Miscibility with water	Partial Miscibility
Partition coefficient: n-octanol/water	Not determined
Viscosity	
Dynamic	Not determined

Kinematic	Not determined
Other information	No further relevant information available

10. Stability and Reactivity

<u>Reactivity</u>	No further relevant information available.
<u>Chemical stability</u>	Stable. Avoid strong oxidizing agents.
<u>Thermal decomposition/conditions to be avoided</u>	No decomposition if used according to specifications.
<u>Possibility of hazardous reactions</u>	No dangerous reactions known.
<u>Conditions to avoid</u>	No further relevant information available.
<u>Incompatible materials</u>	No further relevant information available.
<u>Hazardous decomposition products</u>	No dangerous decomposition products known.

11. Toxicological Information

<u>Information on toxicological effects</u>	
Acute toxicity	Based on available data, the classification criteria are not met.
Primary irritant effect	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	Based on available data, the classification criteria are not met.
CMR effects (Carcinogenetic, mutagenicity and toxicity for reproduction)	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.

Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

12. Ecological Information

Aquatic toxicity	No further relevant information available
Persistence and degradability	No further relevant information available
Bioaccumulative potential	No further relevant information available
Mobility in soil	No further relevant information available
Additional ecological information	
General notes	Generally not hazardous for water
Results of PBT and vPvB assessment	
PBT	Not applicable
vPVB	Not applicable
Other adverse effects	No further relevant information available
Aquatic toxicity	No further relevant information available

13. Disposal Considerations

<u>Waste treatment methods</u>	
Recommendation	Smaller quantities can be disposed of with household waste.
Uncleaned packaging	All waste must be handled in accordance with local, state, and federal regulations. This material and its container must be disposed of in a safe way.
Recommended cleansing agents	Water and, if necessary, cleansing agents.

14. Transport Information

UN-Number • DOT, ADR, ADN, IMDG, IATA	Void
UN proper shipping name: • DOT, ADR, ADN, IMDG, IATA	Void
Transport hazard class(es): • DOT, ADR, ADN, IMDG, IATA • Class	Void
Packing group: • DOT, ADR, IMDG, IATA	Void
Environmental hazards: • Marine pollutant:	Not Applicable
Special precautions for user:	Not Applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not Applicable

15. Regulatory Information

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

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

SARA	
Section 355 (Extremely hazardous substances)	This product is not regulated by SARA
Section 313 (Specific toxic chemical listings)	This product is not regulated by SARA
TSCA	
TSCA (Toxic Substances Control Act)	None of the ingredients listed.
Proposition 65	

Chemicals known to cause cancer	None of the ingredients listed.
Chemicals known to cause reproductive toxicity for females	None of the ingredients listed.
Chemicals known to cause reproductive toxicity for males	None of the ingredients listed.
Chemicals known to cause developmental toxicity	None of the ingredients listed.

Carcinogenic Categories	
EPA (Environmental Protection Agency)	None of the ingredients listed.
TLV (Threshold Limit Value established by ACGIH)	None of the ingredients listed.
NIOSH-Ca (National Institute for Occupational Safety and Health)	None of the ingredients listed.

PICCS (Phillipines Inventory of Chemicals and Chemical Substances)	
PICCS	Not available

ENCS(Existing and New Chemical Substances, Japan)	
ENCS	None of the ingredients listed

DSL (Domestic Substance List, Canada)	
DSL	None of the ingredients listed

AICS (Australian Inventory of Chemical Substances)	
AICS	None of the ingredients listed

IECSC (Inventory of Existing Chemical Substances in China)	
IECSC	None of the ingredients listed

KECI (Korea Existing Chemicals Inventory)	
KECI	None of the ingredients listed

NZIoC (New Zealand Inventory of Chemicals)	
NZIoC	None of the ingredients listed

TCSI (Taiwan Chemical Substance Inventory)

TCSI	None of the ingredients listed
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GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS)

Hazard pictograms	Not available
Decomposition temperature	Not available
Viscosity	Not available
Signal Word	Not available
Hazard-determining components of labeling	Not available
Hazard Statements	Not available
Precautionary Statements	Not available
National Regulations	Not available
State right to know	Not available

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs, see 40 CFR 61)

This product does not contain HAPs

WHMIS hazard class: This product is not in a health hazard class or physical hazard class per the criteria of the CPR and the GHS SDS contains all the information required by the CPR.

16. Other Information

This information is based on our present knowledge. However, this shall not constitute guarantee for any specific product features and shall not establish a legally valid contractual relationship. For research use only. Not for drug, household or other uses. Further, this information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. MSDS documents obtained by manufacturers or suppliers of products not manufactured by Akadeum Life Sciences, Inc. ("Akadeum") are provided as a matter of convenience. AKADEUM MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Akadeum product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Akadeum product, some of

which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Akadeum product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

Date of Preparation/Last Revision	03NOV2023
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Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative



Akadeum Life Sciences, Inc.

Title	GHS SDS Dead Cell Removal/Depletion Microbubbles
Document type	Safety Data Sheet (5.0)
Document ID	SDS-18
Author	Angela Pinkston
Owner	Angela Pinkston
Reviewer(s)	Nadia Petlakh <i>reviewed at 2023-09-21 15:02 (UTC -0400)</i> Ryan Chandler <i>reviewed at 2023-10-30 09:49 (UTC -0400)</i> Vanessa Kelchner <i>reviewed at 2023-11-01 12:34 (UTC -0400)</i>
Approver(s)	Vanessa Kelchner <i>approved at 2023-11-05 08:02 (UTC -0500)</i>
Approval date	Nov 05 2023
Effective date	Nov 05 2023
Next periodic review date	Oct 23 2027

1. Identification

Product Identifier

Trade Name	Dead Cell Removal Microbubbles Dead Cell Depletion Microbubbles
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Synonym(s)	Not available
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SKU Number(s)	11510-210, 11510-211
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Relevant identified uses of substance or mixture and uses advised against

No further relevant information available.

Application of the substance/the preparation

Laboratory chemicals

Details of the supplier of the Safety Data Sheet**Manufacturer/Supplier Details**Akadeum Life Sciences, Inc.
674 S. Wagner Rd.
Ste 30
Ann Arbor, MI 48103**Emergency Contact Information**Chemtrec
Toll Free: 1-800-424-9300

SKU Number(s)	11510-210, 11510-211
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Recommended use of the chemical and restrictions on use

For research use only. Not intended for human or animal diagnostic or therapeutic area.

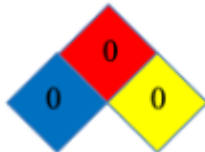
2. Hazard Identification

Classification of the substance/mixture

Not a hazardous substance or mixture
Classification according to Regulation (EC) No 1272/2008 The product is not classified according to the CLP regulation.

GHS Label elements, including precautionary statements

The substance is classified and labeled according to the Globally Harmonized System (GHS).
Not a hazardous substance or mixture.

Hazard Statements	None						
Signal word	None						
Precautionary Statements	None						
NFPA Ratings (Scale 0-4)							
HMIS Ratings (Scale 0-4)	<table> <tr> <td>HEALTH</td><td>0</td></tr> <tr> <td>FIRE</td><td>0</td></tr> <tr> <td>REACTIVITY</td><td>0</td></tr> </table>	HEALTH	0	FIRE	0	REACTIVITY	0
HEALTH	0						
FIRE	0						
REACTIVITY	0						

Other hazards**Results of PBT and vPvB assessment**

PBT	Not applicable.
vPvB	Not applicable.

3. Composition / Information on Ingredients

<u>Chemical Characterization</u>	Mixtures
Description	The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

Chemical Name	Identifiers	Hazardous	Composition (wt. %)
Buffer Solution	N/A	nonhazardous	75-90%
Soda Lime Borosilicate Glass	65997-17-3	nonhazardous	10-25%

Additional Information	Not Applicable
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4. First Aid Measures

Description of first aid measures

After inhalation	Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
After skin contact	Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing.
After eye contact	Rinse opened eye for several minutes under running water.
After ingestion	Rinse mouth. Seek medical attention if you feel unwell.

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

In case of accident, seek medical advice immediately and show the label and the SDS where possible

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing agents	Non-combustible. Use a fire fighting agent suitable for surrounding fire.
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Special hazards arising from the substance or mixture

No further relevant information available.

Advice for firefighters

Protective equipment	Wear self-contained respiratory protective device. Do not inhale explosion gases or combustion gases. Wear fully protective suit.
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6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Wear protective clothing.
Environmental precautions	Avoid release to the environment.
Methods and material for containment and cleaning up	Collect as much of the spilled material as possible. Absorb with liquid-binding material (absorbing paper or cloth). Dispose of absorbing material in regular laboratory trash as long as it's not contaminated with other hazardous or biohazardous substances. Ensure adequate ventilation.
Reference to other sections	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and Storage

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Not for consumer sale or use. Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling.

Information about fire and explosion protection

No special measures required.

Conditions for safe storage, including and incompatibilities

Keep away from heat, sources of ignition and incompatibles such as oxidizing agents.

Storage

No special storage requirements.

Specific end use(s)

No further relevant information available.

8. Exposure Controls / Personal Protection

Additional information about design of technical facilities: No further data; Reference Section 7.

Control parameters

Ingredients with limit values that require monitoring at the workplace:**Occupational exposure limits**

Ingredient	C.A.S. no.	Agency	Limit Type
Not Applicable	Not Applicable	Not Applicable	Not Applicable

ACGIH: American Conference of Governmental Industrial Hygienists

NIOSH: National Institute for Occupational Safety and Health

Appropriate Engineering Controls

Safety shower and eye wash. Ensure adequate ventilation.

Additional information

Not applicable

Exposure controls**Personal protective equipment**

The usual precautionary measures are to be adhered to when handling chemicals.

General protective and hygienic measures

Change contaminated clothing. Wash hands after working with product.

Respiratory protection

In case of brief exposure or low pollution, use respiratory filter device. In case of intensive or longer exposure, use self-contained respiratory protective device.

Protection of hands

The glove material has to be impermeable and resistant to the product. Change gloves upon contamination with product or structural damage to the glove (e.g., tearing or dissolving).

Material of gloves

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

Penetration time of glove material

The exact break through time is to be determined by the protective glove manufacturer.

Eye protection

Safety glasses, at minimum, or goggles.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

General Information	
Appearance	
Form	Multiple (Solid Cake /Suspension, aq.)
Color	According to product specification (white)
Odor	Characteristic
Odor threshold	Not determined.
pH-value	Not determined.
Change in condition	
Melting point/freezing point	Not determined.
Initial boiling point and boiling range	Not determined.
Flash point	Not applicable.
Flammability (solid, gas)	Not applicable.
Ignition temperature	
Decomposition temperature	Not determined.
Auto-ignition temperature	Product is not self-igniting.
Explosive properties	Product does not present an explosion hazard.
Explosion limits	
Lower	Not determined.
Upper	Not determined.
Vapour pressure	Not determined.
Density	Not determined.
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Relative density (water)	No data available
Solubility in/Miscibility with water	Partial Miscibility.
Partition coefficient: n-octanol/water	Not determined.

Viscosity	
Dynamic	Not determined.
Kinematic	Not determined.
Other information	No further relevant information available.

10. Stability and Reactivity

<u>Reactivity</u>	No further relevant information available.
<u>Chemical stability</u>	Stable. Avoid strong oxidizing agents.
<u>Thermal decomposition/conditions to be avoided</u>	No decomposition if used according to specifications.
<u>Possibility of hazardous reactions</u>	No dangerous reactions known.
<u>Conditions to avoid</u>	No further relevant information available.
<u>Incompatible materials</u>	No further relevant information available.
<u>Hazardous decomposition products</u>	No dangerous decomposition products known.

11. Toxicological Information

<u>Information on toxicological effects</u>	
Acute toxicity	Based on available data, the classification criteria are not met.
Primary irritant effect	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	Based on available data, the classification criteria are not met.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.

Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

12. Ecological Information

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

13. Disposal Considerations

<u>Waste treatment methods</u>	
Recommendation	Smaller quantities can be disposed of with household waste.
Uncleaned packaging	All waste must be handled in accordance with local, state and federal regulations. This

	material and its container must be disposed of in a safe way.
Recommended cleansing agents	Water and, if necessary, cleansing agents.

14. Transport Information

UN-Number • DOT, ADR, ADN, IMDG, IATA	Void
UN proper shipping name: • DOT, ADR, ADN, IMDG, IATA	Void
Transport hazard class(es): • DOT, ADR, ADN, IMDG, IATA • Class	Void
Packing group: • DOT, ADR, IMDG, IATA	Void
Environmental hazards: • Marine pollutant:	Not Applicable
Special precautions for user:	Not Applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not Applicable

15. Regulatory Information

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

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

SARA	
Section 355 (Extremely hazardous substances)	This product is not regulated by SARA
Section 313 (Specific toxic chemical listings)	This product is not regulated by SARA

TSCA	

TSCA (Toxic Substances Control Act)	Not available
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Proposition 65	
Chemicals known to cause cancer	None of the ingredients listed.
Chemicals known to cause reproductive toxicity for females	None of the ingredients listed.
Chemicals known to cause reproductive toxicity for males	None of the ingredients listed.
Chemicals known to cause developmental toxicity	None of the ingredients listed.

Carcinogenic Categories	
EPA (Environmental Protection Agency)	None of the ingredients listed.
TLV (Threshold Limit Value established by ACGIH)	None of the ingredients listed.
NIOSH-Ca (National Institute for Occupational Safety and Health)	None of the ingredients listed.

PICCS (Phillipines Inventory of Chemicals and Chemical Substances)	
PICCS	Not available

ENCS(Existing and New Chemical Substances, Japan)	
ENCS	None of the ingredients listed.

DSL (Domestic Substance List, Canada)	
DSL	None of the ingredients listed

AICS (Australian Inventory of Chemical Substances)	
AICS	None of the ingredients listed.

IECSC (Inventory of Existing Chemical Substances in China)	
IECSC	None of the ingredients listed.

KECI (Korea Existing Chemicals Inventory)	
KECI	None of the ingredients listed

NZIoC (New Zealand Inventory of Chemicals)**NZIoC**

None of the ingredients listed

TCSI (Taiwan Chemical Substance Inventory)**TCSI**

None of the ingredients listed

GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS)

Hazard pictograms	Not available
Decomposition temperature	Not available
Viscosity	Not available
Signal Word	Not available
Hazard-determining components of labeling	Not available
Hazard Statements	Not available
Precautionary Statements	Not available
National Regulations	Not available
State right to know	Not available

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs, see 40 CFR 61)

This product does not contain HAPs

WHMIS hazard class: This product is not in a health hazard class or physical hazard class per the criteria of the CPR and the GHS SDS contains all the information required by the CPR.

16. Other Information

This information is based on our present knowledge. However, this shall not constitute guarantee for any specific product features and shall not establish a legally valid contractual relationship. For research use only. Not for drug, household or other uses. Further, this information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. MSDS documents obtained by manufacturers or suppliers of products not manufactured by Akadeum Life Sciences, Inc. ("Akadeum") are provided as a matter of convenience. AKADEUM MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED

WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Akadeum product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Akadeum product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Akadeum product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

Date of Preparation/Last Revision	03NOV2023
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Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative



Akadeum Life Sciences, Inc.

Title	GHS SDS Dead Cell Removal/Depletion Binding Buffer
Document type	Safety Data Sheet (5.0)
Document ID	SDS-19
Author	Angela Pinkston
Owner	Angela Pinkston
Approver(s)	Vanessa Kelchner <i>approved at 2023-11-07 15:34 (UTC -0500)</i>
Approval date	Nov 07 2023
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Next periodic review date	Oct 23 2027

1. Identification

Product Identifier**Trade Name**

Dead Cell Removal Binding Buffer
Dead Cell Depletion Binding Buffer

Synonym(s)

Not available

SKU Number(s)

11510-210, 11510-211

Relevant identified uses of substance or mixture and uses advised against

No further relevant information available.

Application of the substance/the preparation

Laboratory chemicals

Details of the supplier of the Safety Data Sheet**Manufacturer/Supplier Details**

Akadeum Life Sciences, Inc.
674 S. Wagner Rd.
Ste 30
Ann Arbor, MI 48103

Emergency Contact Information

Chemtrec
Toll Free: 1-800-424-9300

SKU Number(s)

11510-210, 11510-211

Recommended use of the chemical and restrictions on use

For research use only. Not intended for human or animal diagnostic or therapeutic use.

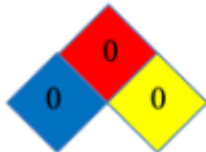
2. Hazard Identification

Classification of the substance/mixture

Not a hazardous substance or mixture
Classification according to Regulation (EC) No 1272/2008 The product is not classified according to the CLP regulation.

GHS Label elements, including precautionary statements

The substance is classified and labeled according to the Globally Harmonized System (GHS).
Not a hazardous substance or mixture.

Hazard Statements	None						
Signal word	None						
Precautionary Statements	None						
NFPA Ratings (Scale 0-4)							
HMIS Ratings (Scale 0-4)	<table> <tr> <td>HEALTH</td><td>0</td></tr> <tr> <td>FIRE</td><td>0</td></tr> <tr> <td>REACTIVITY</td><td>0</td></tr> </table>	HEALTH	0	FIRE	0	REACTIVITY	0
HEALTH	0						
FIRE	0						
REACTIVITY	0						

Other hazards**Results of PBT and vPvB assessment**

PBT	Not applicable.
vPvB	Not applicable.

3. Composition / Information on Ingredients

<u>Chemical Characterization</u>	Mixtures
Description	All animal derived material contained in these test kit(s) is in volumes of no greater than 20ml or 20g per individually packaged unit. USA sourced and produced bovine serum albumin.

Chemical Name	Identifiers	Hazardous	Composition (wt. %)
The ingredient name and exact percentage is being withheld as a proprietary information.			
Additional Information	Not applicable		

4. First Aid Measures

Description of first aid measures

After inhalation	Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
After skin contact	Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing.
After eye contact	Rinse opened eye for several minutes under running water.
After ingestion	Rinse mouth. Seek medical attention if you feel unwell.

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

In case of accident, seek medical advice immediately and show the label and the SDS where possible.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing agents	Non-combustible. Use a fire fighting agent suitable for surrounding fire.
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Special hazards arising from the substance or mixture

No further relevant information available.

Advice for firefighters

Protective equipment	Wear self-contained respiratory protective device. Do not inhale explosion gases or combustion gases. Wear fully protective suit.
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6. Accidental Release Measures

Personal precautions, protective equipment and emergency

Wear protective clothing.

procedures	
Environmental precautions	Avoid release to the environment.
Methods and material for containment and cleaning up	Collect as much of the spilled material as possible. Absorb with liquid-binding material (absorbing paper or cloth). Dispose of absorbing material in regular laboratory trash as long as it's not contaminated with other hazardous or biohazardous substances. Ensure adequate ventilation.
Reference to other sections	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. Handling and Storage

<u>Precautions for safe handling</u>	
Ensure good ventilation/exhaustion at the workplace. Not for consumer sale or use. Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling.	
Information about fire and explosion protection	No special measures required.

Conditions for safe storage, including and incompatibilities	
Keep away from heat, sources of ignition and incompatibles such as oxidizing agents.	
Storage	Keep away from heat, sources of ignition and incompatibles such as oxidizing agents.
Requirements to be met by storerooms and receptacles	Store tightly sealed in a cool, dry and well-ventilated location (see label for storage temperature and additional specific information).
Information about storage in one common storage facility	Do not store in warm environment or in contact with flammable or oxidizing substances.
Further information about storage conditions	None

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

8. Exposure Controls / Personal Protection

Additional information about design of technical facilities: No further data; Reference Section 7.

<u>Control parameters</u>			
Ingredients with limit values that require monitoring at the workplace:			
Occupational exposure limits			
Ingredient	C.A.S. no.	Agency	Limit Type
Not Applicable	Not Applicable	Not Applicable	Not Applicable
ACGIH: American Conference of Governmental Industrial Hygienists NIOSH: National Institute for Occupational Safety and Health			
Appropriate Engineering Controls		Safety shower and eye wash. Ensure adequate ventilation.	
Additional information		The lists valid during the making were used as basis.	
<u>Exposure controls</u>			
Personal protective equipment	Wear protective clothing.		
General protective and hygienic measures	Change contaminated clothing. Wash hands after working with product.		
Respiratory protection	In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.		
Protection of hands	The glove material has to be impermeable and resistant to the product. Change gloves upon contamination with product or structural damage to the glove (e.g., tearing).		
Material of gloves	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.		
Penetration time of glove material	The exact break through time is to be determined by the protective glove manufacturer.		

Eye protection

Safety glasses, at minimum, or goggles.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	
Form	Multiple (Solid cake/Suspension; Solution (aq.))
Color	Clear/White
Odor	Characteristic
Odor threshold	Not determined.
pH-value	7.5
Change in condition	
Melting point/freezing point	Not determined.
Initial boiling point and boiling range	Not determined.
Flash point	Not applicable.
Flammability (solid, gas)	Not applicable.
Autoignition temperature	Not determined
Decomposition temperature	Not determined.
Auto-ignition temperature	Product is not self-igniting.
Explosive properties	Product does not present an explosion hazard.
Explosion limits	
Lower	Not determined.
Upper	Not determined.
Vapor pressure	Not determined.
Density	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Relative density (water)	No data available

Solubility in/Miscibility with water	Partial miscibility
Partition coefficient: n-octanol/water	Not determined.
Viscosity	
Dynamic	Not determined.
Kinematic	Not determined.
Other information	No further relevant information available.
Appearance	

10. Stability and Reactivity

<u>Reactivity</u>	No further relevant information available.
<u>Chemical stability</u>	Stable. Avoid strong oxidizing agents.
<u>Thermal decomposition/conditions to be avoided</u>	No decomposition if used according to specifications.
<u>Possibility of hazardous reactions</u>	No dangerous reactions known.
<u>Conditions to avoid</u>	No further relevant information available.
<u>Incompatible materials</u>	No further relevant information available.
<u>Hazardous decomposition products</u>	No dangerous decomposition products known.

11. Toxicological Information

<u>Information on toxicological effects</u>	
Acute toxicity	Based on available data, the classification criteria are not met.
Primary irritant effect	Based on available data, the classification criteria are not met
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	Based on available data, the classification

	criteria are not met.
CMR effects	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

12. Ecological Information

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

13. Disposal Considerations

Waste treatment methods

Recommendation	Smaller quantities can be disposed of with household waste.
Uncleaned packaging	All waste must be handled in accordance with local, state and federal regulations. This material and its container must be disposed of in a safe way.
Recommended cleansing agents	Water and, if necessary, cleansing agents.

14. Transport Information

UN-Number • DOT, ADR, ADN, IMDG, IATA	Void
UN proper shipping name: • DOT, ADR, ADN, IMDG, IATA	Void
Transport hazard class(es): • DOT, ADR, ADN, IMDG, IATA • Class	Void
Packing group: • DOT, ADR, IMDG, IATA	Void
Environmental hazards: • Marine pollutant:	Not Applicable
Special precautions for user:	Not Applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not Applicable

15. Regulatory Information

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

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

SARA	
Section 355 (Extremely hazardous substances)	This product is not regulated by SARA

Section 313 (Specific toxic chemical listings)	This product is not regulated by SARA
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TSCA

TSCA (Toxic Substances Control Act)	Not available
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Proposition 65

Chemicals known to cause cancer	None of the ingredients listed.
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Chemicals known to cause reproductive toxicity for females	None of the ingredients listed.
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Chemicals known to cause reproductive toxicity for males	None of the ingredients listed.
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Chemicals known to cause developmental toxicity	None of the ingredients listed.
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Carcinogenic Categories

EPA (Environmental Protection Agency)	None of the ingredients listed.
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TLV (Threshold Limit Value established by ACGIH)	None of the ingredients listed.
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NIOSH-Ca (National Institute for Occupational Safety and Health)	None of the ingredients listed.
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PICCS (Phillipines Inventory of Chemicals and Chemical Substances)

PICCS	Not available
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ENCS(Existing and New Chemical Substances, Japan)

ENCS	None of the ingredients listed.
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DSL (Domestic Substance List, Canada)

DSL	None of the ingredients listed.
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AICS (Australian Inventory of Chemical Substances)

AICS	None of the ingredients listed
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IECSC (Inventory of Existing Chemical Substances in China)

IECSC	None of the ingredients listed.
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KECI (Korea Existing Chemicals Inventory)	
KECI	None of the ingredients listed.

NZIoC (New Zealand Inventory of Chemicals)	
NZIoC	None of the ingredients listed.

TCSI (Taiwan Chemical Substance Inventory)	
TCSI	None of the ingredients listed.

GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS)

Hazard pictograms	Not available
Decomposition temperature	Not available
Viscosity	Not available
Signal Word	Not available
Hazard-determining components of labeling	Not available
Hazard Statements	Not available
Precautionary Statements	Not available
National Regulations	Not available
State right to know	Not available

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs, see 40 CFR 61)
This product does not contain HAPs

WHMIS hazard class: This product is not in a health hazard class or physical hazard class per the criteria of the CPR and the GHS SDS contains all the information required by the CPR.

16. Other Information

This information is based on our present knowledge. However, this shall not constitute guarantee for any specific product features and shall not establish a legally valid contractual relationship. For research use only. Not for drug, household or other uses. Further, this information relates to the specific material designated and may not be valid for such material

used in combination with any other materials or in any process. The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. MSDS documents obtained by manufacturers or suppliers of products not manufactured by Akadeum Life Sciences, Inc. ("Akadeum") are provided as a matter of convenience. AKADEUM MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Akadeum product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Akadeum product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Akadeum product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

Date of Preparation/Last Revision	07NOV2023
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Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative