

Safety Data Sheet

MANUFACTURER

CellMosaic, Inc.

10A Roessler Road, Woburn, MA 01801, USA

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General Information

Trade Name: SepSphere™ SM Amine Immobilization Kit via Glyoxyl

Part No. Covered by this SDS: CM71005

Product Content

- 1) A tube containing 5 mL agarose beads (non-hazardous) and 5 mL of 0.02% aqueous sodium azide.
- 2) A plastic bottle containing 20 mL of Buffer A (non-hazardous aqueous buffer).
- 3) A microcentrifuge tube containing 1.5 mL of Solution A.
- 4) A microcentrifuge tube containing 0.6 mL of Buffer B (hazardous, 4.5M NaBH₄ in 2M NaOH).
- 5) A 1.5 mL microcentrifuge tube containing 0.7 mL of Buffer C (hazardous, 2N HCl).
- 6) A plastic bottle containing 30 mL of Buffer D (non-hazardous aqueous buffer).
- 7) A plastic bottle containing 30 mL of Buffer E (non-hazardous aqueous buffer).
- 8) A plastic bottle containing 10 mL of Storage Buffer (0.02% sodium azide in phosphate buffer saline).
- 9) A plastic bag containing column set, stirrer, airtight syringe, three 1.5 mL microcentrifuge tubes, and two HPLC vials (non-hazardous).

Handling and Storage for Hazardous Chemicals

Handling for Solution A: See Attached Supplement for Solution A.

Handling for Buffer B (4.5M NaBH₄ in 2M NaOH): See Attached Supplement for Buffer B.

Handling for Buffer C (2N HCl): See Attached Supplement for Buffer C.

Other Information

Sodium azide present in the mixture at less than 1% is not considered hazardous as defined in 29 CFR 1910.1200 (OSHA Hazard Communication Standard). Therefore, a Material Safety Data Sheet is not required. We recommend treating all chemicals with caution.

Transportation

This kit contains less than 5 mL of hazardous material. When packaged and prepared under 49 CFR 173. 4, do not require hazardous material shipping papers, certification forms, marking or labeling of the package for domestic highway or rail transport.

Supplemental information starts from next page.

Solution A

SECTION 1. Identification of the substance/mixtures and of the company/undertaking

1.1. Product identifiers

Product Name: Solution A

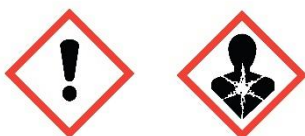
Product No.: CM01006

1.2. Detail of the supplier of the safety data sheet

Company: CellMosaic, Inc. 10A Roessler Road, Woburn, MA 01801, Phone: +1 781-463-0002

SECTION 2. Hazards Identification

2.1. Classification of the substance or mixture



Flammable liquids	GHS Category 4
Eye Irritation	GHS Category 2A
Skin irritation	GHS Category 2
Reproductive Toxicity	GHS Category 1B
Specific target organ toxicity - single exposure	GHS Category 3

2.2. GHS Label elements, including precautionary statements.

Signal Word: DANGER

Hazard Statement(s):

- H227 - Combustible liquid and vapor
- H315 – Causes mild skin irritation
- H319 - Causes eye irritation
- H360 – May damage fertility or the unborn child

Precautionary Statement(s):

- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

SECTION 3. Composition and Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
The specific chemical identity of the organic solvent is being held as a trade secret (Proprietary component)	N/A	99-100%	Yes

SECTION 4. First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Ingestion: If swallowed, DO NOT INDUCE VOMITING without medical advice. Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention.

Eye Contact: Check for and remove contact lenses. Immediately flush your eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

Notes to Physician: Treat symptomatically and supportively.

SECTION 5. Fire Fighting Measures

5.1. Flammability

Combustible liquid and vapor. (GHS Category 4).

Flash Point: 90-100°C (194-212 °F).

Autoignition Temperature: >200 °C (392 °F).

Flammable Limits: Lower Limit 1.3 vol%, Upper Limit -9.5 vol%.

Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (nitrogen oxides, carbon monoxide, carbon dioxide).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

Specific Explosion Hazards: No information available.

Fire Fighting Media: Use dry chemicals, carbon dioxide, water spray, or appropriate foam.

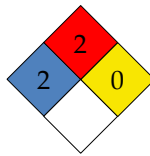
5.2. NFPA

Health Rating: 2

Flammability Rating: 2

Instability: 0

Physical hazards N/A



SECTION 6. Accidental Release Measures

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Provide ventilation to the affected area and remove all ignition sources. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

SECTION 7. Handling and Storage

Handling: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Store away from ignition sources. Keep it in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store under nitrogen blanket.

SECTION 8. Exposure Controls/Personal Protection

Engineering Controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal Protective Equipment:

Eye/face protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material:

Butyl-rubber.

Minimum layer thickness: 0.7 mm Break through time: 480 min.

Body Protection: Wear impervious protective clothing, including gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Do not let product enter drains.

SECTION 9. Physical and Chemical Properties

Physical State and Appearance: Clear, Colorless liquid

Odor: Amine like.

Solubility: Soluble in water.

Specific Gravity: No information available.

pH: slightly basic 8-10 (100 g/L H₂O).

Boiling Point: >200 °C.

Freezing/Melting Point: No information available.

Flash Point: No information available.

Vapor Density (Air=1): N/A.

Vapor Pressure: N/A.

Evaporation Rate (Butyl acetate =1): No information available.

Partition coefficient; n-octanol/water: No information available.

Autoignition Temperature: 245 °C (473 °F).

Decomposition Temperature: No information available.

Viscosity: N/A

SECTION 10. Stability and Reactivity

Stability: Stable at room temperature in closed container under normal handling and storage conditions.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Incompatibilities with Various Substances: Strong oxidizing agents, strong acids, strong base, various plastics.

Conditions to Avoid: Ignition sources, excess heat.

SECTION 11. Toxicological Information

Routes of Entry: Inhalation, skin absorption, skin contact.

Acute Exposure Hazards:

INHALATION HAZARD: Causes respiratory tract irritation. May cause headache. Material has a very low vapor pressure at room temperature, so inhalation exposures are not expected unless material is heated or misted.

INGESTION HAZARD: Ingestion may cause gastrointestinal irritation with nausea, vomiting, and diarrhea.

SKIN CONTACT HAZARD: May cause skin irritation. May be harmful if absorbed through the skin. Not expected to cause an allergic reaction. Because of the high permeability rate in human skin, prolonged contact should be avoided.

EYE CONTACT HAZARD: May cause eye irritation. May cause temporary corneal clouding.

Chronic Exposure Hazards: Prolonged or repeated exposure may cause dermatitis. Adverse reproductive effects have been reported in animals. Testicular effects were noted in rates after repeated, high-dose oral and inhalation exposures (BASF). Human occupational exposure has been associated with chronic eye irritation, headaches, and irritant contact dermatitis. Airborne concentrations of > 49 ppm are intolerable (REPROTEXT).

Animal Toxicity:

Draize test, rabbit, eye: >150 mg Moderate.

Oral, mouse: LD₅₀ >5200 mg/kg.

Oral, rat: LD₅₀ >4000 mg/kg.

Skin, rabbit: LD50 > 10 g/kg.

Sensitization test, guinea pig: negative; patch test (humans): negative (Merck).

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: Proposition 65 maximum allowable dose level for developmental toxicity for this solvent is 3200 ug/day for the inhalation route and 17.00 ug/day for the dermal route.

Reproductive Effects: Possible effects observed.

Mutagenicity: Possible effects observed.

Neurotoxicity: No information available.

Other Studies: No information available.

SECTION 12. Ecological Information

Environmental Fate: No information available.

Physical: No information available.

Environmental Toxicity:

Daphnia: EC50: 5000 mg/L, 48H.

Fish: Gold orfe: LC50: 4500 mg/L, 96H.

Bacteria: EC50, >9000 mg/L, 48H.

Algae: IC50, >500mg/L, 72H.

Log Pow: No information available; BOD : 120 mg/L; COD : 1800 mg/L.

SECTION 13. Disposal Considerations

Dispose of containers and unused contents in accordance with federal, state and local requirements, typical of laboratory waste.

SECTION 14. Transport Information

DOT (US) NA-Number: 1993 Class: NONE.

Packing group: III.

Proper shipping name: Combustible liquid.

IMDG Not dangerous goods.

IATA Not dangerous good.

SECTION 15. Regulatory Information

US Federal Regulations:

TSCA: Listed on the TSCA Inventory.

Health and Safety Reporting List: Not listed.

Chemical Test Rules: 40 CFR 799.5000.

Section 12b: Not listed.

TSCA Significant New Use Rule: Does not have an SNUR under TSCA.

CERCLA Hazardous Substances: Does not have RQ.

SARA Section 302: Does not have a TPQ.

SARA Codes: – immediate, delayed, fire.

Section 313: Subject to SARA Title III Section 313 reporting requirements.

Clean Air Act: Not listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: Not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

On the following state right-to-know lists: Pennsylvania, Minnesota, and Massachusetts.

California Prop 65: California No Significant Risk Level: Not listed.

Canada:

DSL/NDS: Listed on Canada's DSL list.

WHMIS: This product has a WHMIS classification of B3, D2A, D2B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and this SDS contains all the information required by those regulations.

Ingredient Disclosure List: No information available

DSCL (EEC):

Hazard Symbols: Xi, T

Risk Phrases: R36/37/38 – Irritating to eyes, respiratory system, skin; R61 – May cause harm to the unborn child.

Safety Phrases: S26 – In case of contact with eyes, rinse with plenty of water and seek medical advice; S37/39 – Wear suitable gloves and eye/face protection; S45 – In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible); S53 – Avoid exposure, obtain special instructions before use.

WGK (Water Danger/protection): 1

SECTION 16. Other Information

References: This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and WHMIS Controlled Products Regulation, Chemical Abstract databases, Superfund Amendments and Reauthorization Act (SARA) and other similar compound's SDS.

Other Special Considerations: Not available.

Buffer B

SECTION 1. Identification of the substance/mixtures and of the company/undertaking

1.1. Product identifiers

Product Name: Buffer B, Sodium Borohydride, Stable Aqueous Solution, 4.5M in 2M NaOH

Product No.: CM02016-0.6ML

1.2. Detail of the supplier of the safety data sheet

Company: CellMosaic, Inc. 10A Roessler Road, Woburn, MA 01801, Phone: +1 781-463-0002

SECTION 2. Hazards Identification

2.1. Classification of the substance or mixture



GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to metals (Category 1), H290

Acute toxicity, Oral (Category 4), H302

Skin corrosion (Category 1A), H314

Serious eye damage (Category 1), H318

Reproductive toxicity (Category 1B), H360

Short term Acute aquatic toxicity (Category 3), H402

For full text of H-Statements mentioned in this section, see Section 16.

2.2. Label elements

Signal Word: Danger!

Hazard Statement(s):

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H402 Harmful to aquatic life.

Precaution Statement(s):

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P234 Keep only in original container.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink, or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

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/doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

- P390 Absorb spillage to prevent material damage.
- P405 Store locked up.
- P406 Store in corrosive resistant stainless-steel container with a resistant inner liner.
- P501 Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS – none.

SECTION 3. Composition and Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
Sodium Borohydride	16940-66-2	~13%	Yes
Sodium Hydroxide	1310-73-2	~6%	Yes
Water	7732-18-5	~81%	

SECTION 4. First Aid Measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Skin Contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

Eye Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

Most Important Symptoms and Effects, Both Acute and Delayed: The most important known symptoms and effects are described in the labeling (Section 2) or in Section 11.

Indication of Immediate Medical Attention and Special Treatment Needed: No data available.

SECTION 5. Fire Fighting Measures

5.1. Flammability

Products of Combustion: May decompose into flammable gases under fire conditions (Hydrogen, boranes, carbon monoxide, carbon dioxide).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

Specific Explosion Hazards: No information available.

Fire Fighting Media: Use dry chemicals, carbon dioxide.

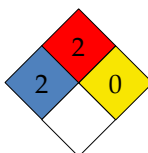
5.2. NFPA

Health Rating: 2

Flammability Rating: 2

Instability: 0

Physical hazards N/A



Extinguishing Media: Use dry powder. Unsuitable extinguishing media, Water Foam.

Special hazards arising from the substance or mixture: No data available.

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further Information: No data available.

SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear respiratory protection. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Method and Materials for Containment and Cleaning Up: Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

Reference to Other Sections: For disposal see Section 13.

SECTION 7. Handling and Storage

Precautions for Safe Handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see Section 2.

Storage: Keep container tightly closed in a dry, well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. No metal container.

Storage class (TRGS 510): Non-combustible, acute toxic Cat. 4, toxic hazardous materials or hazardous materials causing chronic effects.

Specific End Uses: Apart from the uses mentioned in Section 1 no other specific uses are stipulated.

SECTION 8. Exposure Controls/Personal Protection

Control Parameters:

Components with workplace control parameters:

Component	CAS-No.	Value	Control Parameters	Basis
Sodium Hydroxide	1310-73-2	TWA	2 mg/m ³	USA. Occupational Exposure Limits (OSHA)- Table Z-1 Limits for Air Contaminants
		C	2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		C	2 mg/m ³	USA. ACGIH Threshold Limit Value (TLV)
	Remarks	Upper Respiratory Tract Irritation Eye Irritation Skin Irritation		
		C	2 mg/m ³	USA. ACGIH Threshold Limit Value (TLV)
		Upper Respiratory Tract Irritation Eye Irritation Skin Irritation		
		C	2 mg/m ³	USA. NIOSH Recommended Exposure Limits
		C	2 mg/m ³	California Permissible Exposure Limits for Chemical Contaminants (Title 8, Article 107)

Exposure Controls:

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Personal Protective Equipment:

Eye/ Face Protection: Safety glasses with side-shields (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands.

Full Contact:

Material: Nitrile Rubber

Minimum Layer Thickness: 0.11 mm

Breakthrough Time: 480 min

Splash Contact:

Material: Nitrile Rubber

Minimum Layer Thickness: 0.11 mm

Breakthrough Time: 480 min

Body Protection: Impervious clothing, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of dangerous material at the specific workplace.

Respiratory: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure: Prevent further leakage or spillage if safe to do so. Do not allow products to enter drains. Discharge into the environment must be avoided.

SECTION 9. Physical and Chemical Properties

Physical State: Viscous

Color: Colorless.

Odor: No data available.

Odor Threshold: No data available.

pH: 14

Melting Point: No data available.

Initial Boiling Point and Boiling Range: No data available.

Flash Point: No data available.

Evaporation Rate: No data available.

Flammability (solid, gas): No data available.

Upper/ Lower Flammability or Explosion Limits: No data available.

Vapor Pressure: No data available.

Vapor Density: No data available.

Relative Density: No data available.

Water Solubility: Soluble in water.

Partition Coefficient (n-octanol/water): No data available.

Auto-ignition Temperature: No data available.

Decomposition Temperature: No data available.

Viscosity: No data available.

Explosive Properties: No data available.

Oxidizing Properties: No data available.

Solvent Content:

Organic solvent: 0.0%

Solids content: 19%

Other Safety Information: No data available.

SECTION 10. Stability and Reactivity

Reactivity: No data available.

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Reacts violently with water.

Conditions to Avoid: Exposure to moisture.

Materials to Avoid: Strong oxidizing agents.

Incompatible materials: Oxidizing agents, Strong oxidizing agents, Strong acids, Organic materials, acids, chemically active metals.

Hazardous Decomposition Products: Hazardous decomposition products formed under fire conditions, Borane/boron oxides, Sodium oxides.

Other decomposition products: No data available.

In the event of fire: see section 5.

SECTION 11. Toxicological Information

Acute Toxicity:

Harmful if inhaled.

Harmful if swallowed.

Danger by skin resorption

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

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 Values that are Relevant for Classification:

Oral LD50: 162 mg/kg (rat)

Dermal LD50: 230 mg/kg (rabbit)

Skin Corrosion/irritation: Causes severe skin burns.

Serious Eye Damage/Eye Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization: No sensitizing effect known.

Germ Cell Mutagenicity: RTECS contains mutation data for components in this product.

Carcinogenicity: EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

Reproductive Toxicity: No effects known.

Specific Organ Toxicity – Single Exposure: No effects known.

Specific Organ Toxicity – Repeated Exposure: No effects known.

Aspiration Hazard: No effects known.

Subacute to Chronic Toxicity: RTECS contains multiple dose toxicity data for this substance.

Additional Information:

RTECS: FF2200000

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version: Harmful, Corrosive.

SECTION 12. Ecological Information

Toxicity: No data available.

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

PBT and PpBv assessment: not available as chemical safety assessment not required/not conducted.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

SECTION 13. Disposal Considerations

Waste Treatment Methods:

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging: Dispose of as unused product.

SECTION 14. Transport Information

International Transport Regulations:

DOT (US):

UN number: 3320 Class: 8 Packing group: II
 Proper shipping name: Sodium Borohydride and Sodium Hydroxide solution.
 Reportable Quantity (RQ): 1786 lbs.
 Poison Inhalation Hazard: No.

IMDG:

UN number: 3320 Class: 8 Packing group: II EMS-No: F-A, S-B
 Proper shipping name: Sodium Borohydride and Sodium Hydroxide solution.

IATA:

UN number: 3320 Class: 8 Packing group: II
 Proper shipping name: Sodium Borohydride and Sodium Hydroxide solution.

SECTION 15. Regulatory Information

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Acute health hazard, Chronic health hazard.

State Regulations:

Massachusetts Right To Know Components:

	CAS-No.	Revision Date
Sodium Hydroxide	1310-73-2	2007-03-01

Pennsylvania Right To Know Components:

	CAS-No.	Revision Date
Sodium Hydroxide	1310-73-2	2007-03-01
Water	7732-18-5	2007-03-01
Sodium Borohydride	16940-66-2	2007-03-01

New Jersey Right To Know Components:

	CAS-No.	Revision Date
Sodium Hydroxide	1310-73-2	2007-03-01
Water	7732-18-5	2007-03-01
Sodium Borohydride	16940-66-2	2007-03-01

California Prop. 65 Components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16. Other Information

References: This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and WHMIS Controlled Products Regulation, Chemical Abstract databases, Superfund Amendments and Reauthorization Act (SARA) and other similar compound's SDS.

Other Special Considerations: Not available.

Buffer C

SECTION 1. Identification of the substance/mixtures and of the company/undertaking

1.1. Product identifiers

Product Name: Buffer C, hydrochloric acid 2N

Product No.: CM02015-0.7ML

1.2. Detail of the supplier of the safety data sheet

Company: CellMosaic, Inc. 10A Roessler Road, Woburn, MA 01801, Phone: +1 781-463-0002

SECTION 2. Hazards Identification

2.1. Classification of the substance or mixture



GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS)

May be corrosive to metals (Category 1), H290

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Signal Word: Warning

Hazard Statement(s):

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precaution Statement(s):

P234 Keep only in original container.

P261 Avoid breathing dust/ fumes/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ eye protection/ face protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P390 Absorb spillage to prevent material damage.

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards: None known.

SECTION 3. Composition and Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
Hydrochloric acid	7647-01-0	7%	Yes
Water	7732-18-5	93%	No

SECTION 4. First Aid Measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move person into fresh air. Consult a physician.

Ingestion: DO NOT INDUCE VOMITING. After swallowing immediately make victim drink water (two glasses at most). Never give anything by mouth to an unconscious person. Consult a physician.

Skin Contact: Wash off immediately with plenty of water. Consult a physician.

Eye Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Most Important Symptoms and Effects, Both Acute and Delayed: Irritant effects, cough, shortness of breath.

Indication of Immediate Medical Attention and Special Treatment Needed No data available.

SECTION 5. Fire Fighting Measures

5.1. Flammability

Products of Combustion: Not Combustible

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

Specific Explosion Hazards: Will not explode.

Fire Fighting Media: Use water.

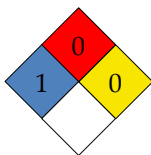
5.2. NFPA

Health Rating: 1

Flammability Rating: 0

Instability: 0

Physical hazards N/A



Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media: For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture: Not combustible.

Ambient fire may liberate hazardous vapors. Fire may cause evolution of Hydrogen chloride gas.

Advice for firefighters: Special protective equipment for fire-fighters. Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information: Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear respiratory protection. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.

Environmental Precautions: Do not let product enter drains.

Method and Materials for Containment and Cleaning Up: Take up with liquid-absorbent and neutralizing material (e.g., Chemisorb® H⁺, Art. No. 101595). Dispose of properly. Clean up affected area.

SECTION 7. Handling and Storage

Precautions for Safe Handling: Observe label precautions.

Conditions for Safe Storage, Including any Incompatibilities: No metal containers. Keep container tightly closed.

SECTION 8. Exposure Controls/Personal Protection

Exposure limit(s):

Ingredients: Hydrochloric Acid

Basis	Value	Threshold Limits
ACGIH	Ceiling Limit Value	2 ppm
NIOSH/GUIDE	Ceiling Limit Value and Time Period (If specified)	5 ppm, 7 mg/m ³
OSHA_TRANS	Ceiling Limit Value	5 ppm, 7 mg/m ³
Mexico OEL	Ceiling Limit Value	5 ppm, 7 mg/m ³

Exposure Controls:

Appropriate engineering controls: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Personal Protective Equipment: Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene Measures: Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/ Face Protection: Safety glasses.

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.

Other Protective Equipment: Acid-resistant protective clothing.

Respiratory Protection: Required when vapors/aerosols are generated.

SECTION 9. Physical and Chemical Properties

Physical State: Liquid.

Color: Colorless.

Odor: Pungent.

Odor Threshold: No data available.

pH: <1 at 68 °F (20 °C).

Melting Point/Range: No data available.

Boiling Point/Range: No data available.

Flash Point: No data available.

Evaporation Rate: No data available.

Flammability (solid, gas): Not applicable.

Upper/ Lower Flammability or Explosion Limits: No data available.

Vapor Pressure: No data available.

Vapor Density: No data available.

Relative Density: No data available

Specific Gravity: 1.0-1.1

Water Solubility: Soluble in water.

Partition Coefficient (n-octanol/water): No data available.

Auto-ignition Temperature: No data available.

Decomposition Temperature: No data available.

Viscosity: No data available.

Explosive Properties: No data available.

Oxidizing Properties: No data available.

Other Safety Information: No data available.

SECTION 10. Stability and Reactivity

Reactivity: See below.

Chemical Stability: The product is chemically stable under standard ambient conditions (room temperature).

Possibility of Hazardous Reactions:

Risk of explosion with: Alkali metals, Conc. Sulfuric acid

Risk of ignition or formation of inflammable gases or vapors with: Carbides, Lithium silicide, Fluorine

Generates dangerous gases or fumes in contact with: Aluminum, hydrides, formaldehyde, Metals, strong alkalis, Sulfides.

Exothermic reaction with: Amines, Potassium permanganate, Salts of oxyhalogenic acids, Semimetallic oxides, Semimetallic hydrogen compounds, Aldehydes, Vinylmethyl ether.

Conditions to Avoid: No data available.

Incompatible materials: Metals, metal alloys. Gives off hydrogen by reaction with metals.

Hazardous Decomposition Products: Hydrogen chloride gas, carbon monoxide (CO), carbon dioxide (CO₂).

SECTION 11. Toxicological Information

Product Information:

Oral LD₅₀ Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD₅₀ Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC₅₀ Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information:

Component	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Water		Not listed	Not listed
Hydrochloric Acid	238-277 mg/kg (Rat)	>5010 mg/kg (Rabbit)	1.68 mg/L (Rat) 1hr

Information on Toxicological Effects:

Likely route of exposure: Eye contact, skin contact

Target Organs: Eyes, skin, respiratory system, cornea.

Acute Oral Toxicity:

Symptoms: Irritations of mucous membranes in the mouth, pharynx, esophagus, and gastrointestinal tract.

Acute Inhalation Toxicity:

Symptoms: mucosal irritations, Cough, Shortness of breath.

Possible damages: Damage of respiratory tract.

Skin Irritation: Mixture causes skin irritation.

Eye Irritation: Mixture causes serious eye irritation.

Specific Target Organ Systemic Toxicity – Single Exposure: May cause respiratory irritation.

Target Organs: Respiratory system.

Specific Target Organ Systemic Toxicity – Repeated Exposure: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration Hazard: Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity:

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

OSHA: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further Information:

Other dangerous properties cannot be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological Information

Ecotoxicity: Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hydrochloric Acid	-	282 mg/L LC50 96h Gambusia affinis mg/L LC50 48 h Leuciscus idus	-	56 mg/L EC50 72h Daphnia

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

SECTION 13. Disposal Considerations

Waste Treatment Methods:

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14. Transport Information

International Transport Regulations:

DOT (US):

UN number: 1789 Class: 8 Packing group: II

Proper shipping name: Hydrochloric acid solution

IMDG:

UN number: 1789 Class: 8 Packing group: II EMS-No: F-A, S-B

Proper shipping name: Hydrochloric acid solution

IATA:

UN number: 1789 Class: 8 Packing group: II

Proper shipping name: Hydrochloric acid solution

SECTION 15. Regulatory Information

SARA 302 Components: The following components are subject to reporting levels established by SARA Title III, Section 302. Ingredients: Hydrochloric acid.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313. Ingredients: Hydrochloric acid.

Clean Water Act:

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients: hydrochloric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients: hydrochloric acid

DEA List I: Not listed.

DEA List II: Listed. Ingredients: Hydrochloric acid.

State Regulations:

Massachusetts Right To Know Components: Ingredients: Hydrochloric acid.

Pennsylvania Right To Know Components: Ingredients: Hydrochloric acid.

New Jersey Right To Know Components: Ingredients: Hydrochloric acid.

California Prop. 65 Components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Notification Status:

TSCA: All components of the products are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other Information

References: This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and WHMIS Controlled Products Regulation, Chemical Abstract databases, Superfund Amendments and Reauthorization Act (SARA) and other similar compound's SDS.

Other Special Considerations: Not available.

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Revision Information: Version 2

Product Use: Laboratory Reagent

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