

# Safety Data Sheet

## MANUFACTURER

CellMosaic, Inc.

10A Roessler Road, Woburn, MA 01801, USA

Phone: 1- 781-463-0002; Fax: 1- 781-998-4694, E-mail: info@cellmosaic.com

## General Information

**Trade Name:** PerKit™ KLH Universal Small Molecule Acid Conjugation Kit

**Part No. Covered by this SDS:** CM52426

## Product Content

- 1) A microcentrifuge tube containing less than 10 mg of Reagent A (non-hazardous).
- 2) A microcentrifuge tube containing less than 10 mg of Reagent B(hazardous).
- 3) A tube containing 5 mg of Kehole Limpet Hemocyanin (KLH) (non-hazardous).
- 4) A microcentrifuge tube containing 0.5 mL solution A (hazardous).
- 5) A tube containing 1 mL of buffer A (non-hazardous).
- 6) A tube containing 1 mL of buffer B (non-hazardous).
- 7) A bottle containing 30 mL of Storage Buffer (phosphate buffer saline) (non-hazardous).
- 8) A plastic bag containing desalting columns and microcentrifuge tubes (non-hazardous).

## Handling and Storage for Hazardous Chemicals

Handling for **Solution A** and **Reagent B**: See attached supplemental information.

## Transportation

When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. **Therefore, packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.**

**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

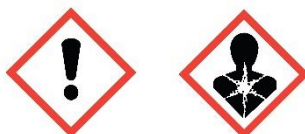
Product No.: CM01008

#### 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

#### 1.1. 2.1. Classification of the substance or mixture



Flammable liquids

GHS Category 4

Eye Irritation

GHS Category 2

Reproductive Toxicity

GHS Category 2A

#### 1.2. 2.2. GHS Label elements, including precautionary statements.

**Signal Word:** WARNING!

**Hazard Statement(s):**

H227 - Combustible liquid and vapor

H316 – Causes mild skin irritation

H320 - Causes eye irritation

H335- May cause respiratory irritation

H360 – May damage fertility or the unborn child

**Precautionary Statement(s):**

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

P303+P361+P353 – If on skin or hair: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

May cause irritation to the eyes, skin, and respiratory tract. May cause harm to the unborn child. Maybe harmful if swallowed, inhaled, or absorbed through the skin. Light sensitive. Combustible liquid and vapor, hygroscopic.

### 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. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Eye Contact:** Check for and remove contact lenses. Immediately flush 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**

### **1.3. 5.1. Flammability**

Combustible liquid and vapor. (GHS Category 4)

Flash Point: 64 °C (147 °F)

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

Flammable Limits: Lower Limit 1.8 vol%, Upper Limit 11.5 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.

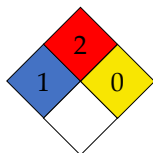
### **1.4. 5.2. NFPA**

Health Rating: 1

Flammability Rating: 2

Instability: 0

Physical hazards N/A



## **SECTION 6. Accidental Release Measures**

**Personal precautions, protective equipment and emergency procedures:** use personal protective equipment. Avoid dust formation. Avoid breathing dust. For personal protection see section 8.

**Environmental precautions:** No special environmental precautions required.

**Methods and materials for containment and cleaning up:** Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Use spark-proof tools. 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.

**Reference to other sections:** for disposal see section 13.

## **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.

## **SECTION 8. Exposure Controls/Personal Protection**

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities for storing or using the material should be equipped with an eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Personal Protective Equipment:** Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirators when necessary.

**Exposure Limits:** None established.

**SECTION 9. Physical and Chemical Properties**

**Physical State and Appearance:** Clear, Colorless liquid.

**Odor:** None.

**Solubility:** Water soluble.

**Specific Gravity:** No information available.

**pH:** slightly basic 8-10 (100 g/L H<sub>2</sub>O).

**Boiling Point:** 164-165 °C.

**Freezing/Melting Point:** -20 °C.

**Flash Point:** No information available.

**Vapor Density (Air=1):** 3.01

**Vapor Pressure:** N/A.

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

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

**Autoignition Temperature:** 345 °C.

**Decomposition Temperature:** No information available.

**Viscosity:** N/A.

**Molecular Formula:** N/A.

**Molecular Weight:** 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.

**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 rats after repeated, high-dose oral and inhalation exposures (BASF). Human occupational exposure has been associated with chronic eye irritation, headaches, and irritant contact dermatitis.

**Animal Toxicity:**

Oral, mouse: LD<sub>50</sub> >4620 mg/kg.

Oral, rat: LD<sub>50</sub> >4800 mg/kg.

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

**Epidemiology:** No information available.

**Teratogenicity:** No teratogenic effect was observed at or below dosage levels of 160 mg/kg/day.

**Reproductive Effects:** Possible effects observed.

**Mutagenicity:** Possible effects observed.

**Neurotoxicity:** No information available.

**Other Studies:** No information available.

**SECTION 12. Ecological Information**

**Environmental Fate:** Biodegradability aerobic - Exposure time 28 d Result: 70 % - Readily biodegradable. (OECD Test Guideline 301C).

**Environmental Toxicity:**

Daphnia: EC50 >500 mg/L, 48H.

Fish: Gold orfe: LC50 > 500 mg/L, 96H.

Bacteria: EC50, >1995 mg/L, 30 min.

Algae: ErC50, >500mg/L, 72H.

**SECTION 13. Disposal Considerations**

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of containers and unused contents in accordance with federal, state and local requirements.

**SECTION 14. Transport Information****DOT (US)**

NA-Number: 1993 Class: NONE.

Packing group: III Proper shipping name: Combustible liquid.

Poison Inhalation Hazard: No.

**IMDG**

Not dangerous goods.

**IATA**

Not dangerous goods.

**SECTION 15. Regulatory Information**

SARA 302 Components: This material does not contain any components with a section 302 EHS TPQ.

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 Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

California Prop. 65 Components, which is/are known to the State of California to cause cancer and birth defects or 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.

## Reagent B

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

#### 1.1. Product identifiers

Product Name: Reagent B

Product No.: CM10003.1

#### 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



Skin Corrosion/Irritation, Category 2, H315

Serious Eye Damage, Category 1, H318

Specific Target Organ Toxicity (single exposure), Category 3, Respiratory System H335

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

#### 2.2. GHS Label elements, including precautionary statements.

**Signal Word:** Danger

**Hazard Statement(s):**

H315 - Causes skin irritation.

H302 - Harmful if swallowed.

H318 - Causes serious eye damage.

H335 - May cause respiratory irritation.

H410 - Very toxic to aquatic life with long lasting effects.

**Precautionary Statement(s):**

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

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/eye protection/ face protection.

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

P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

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 doctor/physician.

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

P362 Take off contaminated clothing and wash before reuse.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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 |
|--|---------|---------|-----------|
| The specific chemical identities of this reagent 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 attention immediately.

**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:** Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.

### SECTION 5. Fire Fighting Measures

#### 5.1 Flammability

Products of Combustion: Carbon oxides (carbon dioxide, carbon monoxide) and nitrogen oxides (NOx), hydrogen chloride (HCl).

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 spray, or appropriate foam.

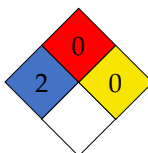
#### 5.2. NFPA

Health Rating: 2

Flammability Rating: 0

Reactivity: 0

Specific Hazard: N/A



### SECTION 6. Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures:** use personal protective equipment. Avoid dust formation. Avoid breathing dust. For personal protection see section 8.

**Environmental Precautions:** Do not let product enter drains.

**Method and Materials for Containment and Cleaning Up:** Pick up and arrange disposal without creating dust, can spray water. Keep in suitable, closed containers for disposal.

**Reference to Other Sections:** For disposal see Section 13.

### SECTION 7. Handling and Storage

**Handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation in places where dust is formed.





**Storage:** Keep container tightly closed in a dry, well-ventilated place.

Recommended Storage Temperature: -20 °C.

Moisture sensitive. Store under inert gas.

Storage class (TRGS 510): Non-combustible solids.

## **SECTION 8. Exposure Controls/Personal Protection**

Control Parameters:

Components with workplace control parameters:

**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.

### **Recommended gloves (for Reagent B)**

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 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:** Crystalline.

**Color:** White, off-white.

**Odor:** No data available.

**Odor Threshold:** No data available.

**pH:** No data available.

**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.

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SDS



**Oxidizing Properties:** No data available.

**Other Safety Information:** No data available.

#### **SECTION 10. Stability and Reactivity**

**Chemical Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** No data available.

**Conditions to Avoid:** No data available.

**Materials to Avoid:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Carbon oxides (carbon dioxide, carbon monoxide) and nitrogen oxides (NO<sub>x</sub>), hydrogen chloride (HCl).

#### **SECTION 11. Toxicological Information**

**Acute Toxicity:** LD50 Oral - Rat - female - 500 mg/kg.

**Inhalation:** No data available.

**Dermal:** D50 Dermal - Rat - male and female - > 200 - 1,000 mg/kg.

**Skin Corrosion/Irritation:** Skin - Rabbit Result: Severe skin irritation.

**Serious Eye Damage/Eye Irritation:** No data available.

**Respiratory or Skin Sensitization:** Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Carcinogenicity:**

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

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

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

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

**Reproductive Toxicity:** No data available.

**Specific Organ Toxicity – Single Exposure:** No data available.

**Specific Organ Toxicity – Repeated Exposure:** Oral - May cause damage to organs through prolonged or repeated exposure. - Stomach, large intestine, lymph node.

**Aspiration Hazard:** No data available.

#### **SECTION 12. Ecological Information**

**Toxicity:**

Toxicity to fish: LC50 - Cyprinus carpio (Carp): 4.6 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) : 0.41 mg/L - 48 h.

Toxicity to bacteria EC50 - activated sludge: > 347 & < 470 mg/L - 3 h.

**Persistence and degradability:** Not readily biodegradable.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**PBT and PvBv assessment:** No data available.

**SECTION 13. Disposal Considerations**

Dispose of containers and unused contents in accordance with federal, state, and local requirements, typical of laboratory waste. Contact a licensed professional waste disposal service to dispose of this material.

**SECTION 14. Transport Information**

**DOT:** Not dangerous goods.

**UN number:** 2811(TOXIC SOLID, ORGANIC) **Class:** 6.1 **Packing group:** III (minor danger).

**Reportable Quantity (RQ):** Poison Inhalation Hazard: No.

**IMDG:** Not dangerous goods.

**UN number:** 2811 **Class:** 6.1 **Packing group:** III.

**Marine pollutant:** Yes.

**IATA:** Not dangerous goods.

**UN number:** 2811 **Class:** 6.1 **Packing group:** III.

**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:** No SARA Hazards.

**Massachusetts Right to Know Components:** No components listed.

**California Prop. 65 Components:** This product does not contain any chemicals known to 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.

**Created:** Jan. 2, 2022

**Last Updated:** Dec. 20, 2023

**Revision Information:** Version 3

**Product Use:** Laboratory Reagent

**Disclaimer:**

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**Prepared by:** CellMosaic, Inc. Health and Safety.