

# Safety Data Sheet

## MANUFACTURER



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## Product Identification

**Trade Name:** PerKit™ F(ab')<sub>2</sub> MMAE

**Part No.:** CM11419 & CM11419x3

Conjugation Kit

**CAS No.:** N/A

**Molecular Weight:** N/A

**Chemical Formula:** N/A

## Composition/Information on Ingredients

### Each kit includes:

- 1) A microcentrifuge tube containing less than 1 mg of mertansine (hazardous)
- 2) A microcentrifuge tube containing less than 1 mg of succinimidyl 4-(N-maleimidomethyl)cyclohexane-1-carboxylate (non-hazardous)
- 3) A microcentrifuge tube containing less than 0.5 mL solution A (hazardous)
- 4) A bottle containing 4 mL or 12 mL of buffer A (non-hazardous)
- 5) A bottle containing 4 mL or 12 mL of buffer B (non-hazardous)
- 6) A bottle containing 20 mL or 60 mL of Storage Buffer (phosphate buffer saline) (non-hazardous)
- 7) A microcentrifuge tube containing 0.5 mL or 1.5 mL of ADC stabilizing PBS buffer (phosphate buffer saline) (non-hazardous)
- 8) A plastic bag containing three centrifugal filter devices, one desalting column, microcentrifuge tubes (non-hazardous)

## Handling and Storage for Hazardous Chemicals

Handling for solution A and Mertansine: See Attached Supplement

## 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.

## Solution A

### 1. Product and Company Identification

**Product Name: Solution A**  
**Product No.: CM01006**  
**Company: CellMosaic, Inc. 10A Roessler Road, Woburn, MA 01801**

**2. Hazards Identification**

**Classification of the substance or mixture**



Flammable liquids  
 Eye Irritation  
 Reproductive Toxicity

GHS Category 4  
 GHS Category 2  
 GHS Category 2A

**Label elements**

**Signal Word:** WARNING!

**Hazard Statements**

- 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 Statements**

- 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.

**3. Composition and Information on Ingredients**

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

**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 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.

## 5. Fire Fighting Measures

**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 chemical, carbon dioxide, water spray, or appropriate foam.

### NFPA

**Health Rating:** 2

**Flammability Rating:** 2

**Instability:** 0

**Physical hazards** N/A

## 6. Accidental Spill Measures

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. Always use proper personal protective equipment as described in **section 8**.

## 7. Handling and Storage

**Precautions:** 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 in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store under nitrogen blanket..

## 8. Exposure Controls/Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with 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 respirator when necessary.

**Exposure Limits:** None established.

## 9. Physical and Chemical Properties

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

**Odor:** No information available

**Solubility:** soluble.

**Specific Gravity:** No information available

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

**Boiling Point:** No information available

**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:** No information available

**Decomposition Temperature:** No information available

**Viscosity:** N/A

**Molecular Formula:** N/A

**Molecular Weight:** N/A

## 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:** Light, ignition sources, excess heat, exposure to moist air or water.

## 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

## 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

## 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 a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

#### 14. Transport Information

Not regulated for transportation.

#### 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 an 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 hazard criteria of the Controlled Products Regulations and this MSDS 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

#### 16. Other Information

**References:**

Chemical Abstract databases. OSHA, SARA. Other similar compound's SDS.

**Other Special Considerations:** Not available

## Mertansine (DM1)

### 1. Product and Company Identification

**Product Name:** mertansine

**Synonyms:** N<sup>2'</sup>-deacetyl-N<sup>2'</sup>-(3-mercapto-1-oxopropyl)-maytansine; DM 1 Compound

**Product No.:** CM11002

**Company:** CellMosaic, Inc. 10A Roessler Road, Woburn, MA 01801

### 2. Hazards Identification

#### Classification of the substance or mixture



Acute Toxicity: Skin, Category 1

Skin Corrosion/Irritation, Category 1B

Germ Cell Mutagenicity, Category 1B

Carcinogenicity, Category 1B

Toxic to Reproduction, Category 1B

Specific Target Organ Toxicity (single exposure), Category 1

#### Label elements

**Signal Word:** Danger!

#### Hazard Statements

H310: Fatal in contact with skin.

H314: Causes severe skin burns and eye damage.

H340: May cause genetic defects.

H350: May cause cancer.

H360: May damage fertility or the unborn child.

H370: Causes damage to organs.

#### Precaution Statements:

P201: Obtain special instructions before use.

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

P260: Do not breathe {dust/fume/gas/mist/vapors/spray}.

P262: Do not get in eyes, on skin, or on clothing.

P264: Wash {hands} thoroughly after handling.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

#### GHS Response Phrases:

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy

to do. Continue rinsing.

P308+311: If exposed or concerned: Call a {POISON CENTER/Doctor/...}.

P313: Get medical advice/attention.

P310: Immediately call a POISON CENTER or doctor/physician.

P321: Specific treatment {see ... on this label}.

P361+364: Take off immediately all contaminated clothing and wash it before reuse.

P363: Wash contaminated clothing before reuse.

**GHS Storage and Disposal Phrases:**

Please refer to Section 7 for Storage and Section 13 for Disposal information.

**Adverse Human Health**

Causes damage to organs.

**Effects and Symptoms:**

Causes severe skin burns and eye damage.

Fatal in contact with skin.

Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

May cause cancer.

May cause eye, skin, or respiratory system irritation.

May cause genetic defects.

May damage fertility or the unborn child.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**3. Composition and Information on Ingredients**

Ingredient	CAS No.	Percent	Hazardous
Mertansine	139504-50-0	100%	Yes

**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:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**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 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.

## 5. Fire Fighting Measures

**Flammable Properties and Hazards:** No data available

**Flash Point:** No data available

**Autoignition Temperature:** No data available

**Flammable Limits (% in air):** No data available

**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.

**Fire Fighting Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

## 6. Accidental Spill Measures

Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves). Take steps to avoid release into the environment, if safe to do so. Contain spill and collect, as appropriate and transfer to a chemical waste container for disposal in accordance with local regulations.

## 7. Handling and Storage

**Precautions:** Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

**Storage:** Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## 8. Exposure Controls/Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with 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 compatible chemical-resistant gloves and protective clothing to prevent skin exposure. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**Work/Hygienic/Maintenance Practices:** Do not take internally.

**Exposure Limits:** None established.

## 9. Physical and Chemical Properties

**Physical State and Appearance:** Solid

**Appearance and Odor:** A crystalline solid

**Solubility:** Soluble (slightly) in: chloroform; MeOH

**pH:** No information available

**Boiling Point:** No information available

**Freezing/Melting Point:** No information available

**Flash Point:** No information available

**Autoignition Temperature:** No information available

**Flammable Limits (% in air):** 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

**Decomposition Temperature:** No information available

**Viscosity:** N/A

**Molecular Formula:** C<sub>35</sub>H<sub>48</sub>ClN<sub>3</sub>O<sub>10</sub>S

**Molecular Weight:** 738.3

## 10. Stability and Reactivity

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

**Reactivity:** No information available

**Hazardous Decomposition Products:** carbon oxide, carbon monoxide, hydrogen sulfide, nitrogen oxides, phosgene

**Hazardous Polymerization:** Will not occur

**Incompatibilities – Materials to Avoid:** strong oxidizing agents

## 11. Toxicological Information

**Information on Toxicological Effects:** the toxicological effects of this product has not been thoroughly studied.

## 12. Ecological Information

**Toxicity:** Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

**Persistence and degradability:** No information available.

**Bioaccumulative potential:** No information available

**Mobility in Soil:** No information available

**Results of PBT and vPvB:** No information available

**Other adverse effects:** No information available

## 13. Disposal Considerations

Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

**Land Transport (US DOT):**

Proper Shipping Name: Toxic solids, organic, n.o.s. (N<sup>2</sup>'-Deacetyl-N<sup>2</sup>'-(3-mercapto-1-oxopropyl)-maytansine)

DOT Hazard Class: 6.1 POISON

IUN/NA Number: UN2811 Packing Group: III

**Land Transport (European ADR/RID)**

ADR/RID Shipping Name: Toxic solids, organic, n.o.s (N<sup>2</sup>'-Deacetyl-N<sup>2</sup>'-(3-mercapto-1-oxopropyl)-maytansine)

UN Number: 2811 Packing Group: III

Hazard Class: 6.1 POISON

**Air Transport (ICAO/IATA)**

ICAO/IATA Shipping Name: Toxic solids, organic, n.o.s (N<sup>2</sup>'-Deacetyl-N<sup>2</sup>'-(3-mercapto-1-oxopropyl)-maytansine)

UN Number: 2811 Packing Group: III

Hazard Class: 6.1 POISON IATA Classification: 6.1

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations. **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.**

**15. Regulatory Information****EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists**

CAS#	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TR)
139504-50-0	Mertansine	No	No	No

CAS#	Hazardous Components (Chemical Name)	Other US EPA or State Lists
139504-50-0	Mertansine	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No

**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, SARA. Other similar compound's SDS.

**Other Special Considerations:** Not available

**Created:** June 1st, 2020

**Last Updated:** June 1st, 2020

**Revision Information:** Version 1

**Product Use:** Laboratory Reagent.

**Disclaimer:**

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