# Safety Data Sheet

**MANUFACTURER**

CellMosaic, Inc.
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## General Information

**Trade Name:** PerKit™ Antibody Mertansine (DM1) Conjugation Kit
**Part No. Covered by this SDS:** CM11410x1, CM11410x3, CM11410.01x1 and CM11410.01x3

## Product Content

1) A microcentrifuge tube containing less than 1 mg of mertansine DM1 (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 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 (DM1)**: 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

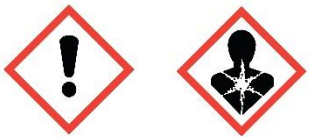
Product Name: Solution A
Product No.: CM01008

### 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

### 2.1. Classification of the substance or mixture



| | |
|---|---|
| Eye Irritation | GHS Category 2 |
| Reproductive Toxicity | GHS Category 2A |

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

**Signal Word:** WARNING!
**Hazard Statement(s):**
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.

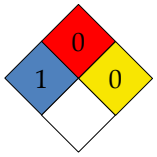
## SECTION 5. Fire Fighting Measures

### 5.1. Flammability

Autoignition Temperature: >200 °C (345 °F)
Products of Combustion: May decompose into irritating 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: 1
Flammability Rating: 0
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:** 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 $H_2O$).
**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:** Will not decompose spontaneously.
**Hazardous Polymerization:** Will not occur.
**Incompatibilities with Various Substances:** Strong oxidizing agents, strong acids.
**Conditions to Avoid:** 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.
**Animal Toxicity:**
Oral, mouse: LD50 >4620 mg/kg.
Oral, rat: LD50 >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.
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.
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.

# Mertansine (DM1)

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

### 1.1. Product identifiers

Product Name: Mertansine
Synonyms: N2'-deacetyl-N2'-(3-mercapto-1-oxopropyl)-maytansine; DM1
Product No.: CM11002

### 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

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

### 2.2. Label elements

**Signal Word:** Danger!
**Hazard Statement(s):**
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 Statement(s):**
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 Phrase(s):**
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 of concerned: Call a POISON CENTER or doctor/physician.
P313: Get medical advice/attention.

P310: Immediately call a POISON CENTER or doctor/physician.
P321: Specific treatment: There is no specific antidote for Mertansine {Reference 1 under section 16}.
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.

## SECTION 3. Composition and Information on Ingredients

| Ingredient | CAS No. | Percent | Hazardous |
|---|---|---|---|
| Mertansine | 139504-50-0 | 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:** 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.

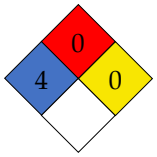
## SECTION 5. Fire Fighting Measures

### 5.1. Flammability

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.

### 5.2. NFPA

Health Rating: 4
Flammability Rating: 0
Reactivity: 0
Specific Hazard: N/A



## SECTION 6. Accidental Release 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.

## SECTION 7. Handling and Storage

**Handling**: Always use proper personal protective equipment as described in section 8. Wash your hands 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.

## SECTION 8. Exposure Controls/Personal Protection

**Engineering Controls**: 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 compatible chemical-resistant gloves and protective clothing to prevent skin exposure. Always use a NIOSH or European Standard EN 149 approved respirators when necessary.
**Work/Hygienic/Maintenance Practices**: Do not take internally.
**Exposure Limits**: None established.

## SECTION 9. Physical and Chemical Properties

**Physical State and Appearance:** Solid.
**Appearance and Odor:** A crystalline solid.
**Solubility:** Soluble (slightly) in chloroform; Methanol.
**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:** $C_{35}H_{48}ClN_3O_{10}S$
**Molecular Weight:** 738.3

## SECTION 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.

## SECTION 11. Toxicological Information

Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

## SECTION 12. Ecological Information

Avoid release into the environment.
**Environmental Fate:** No information available.
**Environmental Toxicity:** No information available.

## SECTION 13. Disposal Considerations

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

## SECTION 14. Transport Information

**Land Transport (US DOT):**
Proper Shipping Name: Toxic solids, organic, n.o.s. (N2'-Deacetyl-N2'-(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 (N2'-Deacetyl-N2'-(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 (N2'-Deacetyl-N2'-(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.

## SECTION 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 |

## 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.

1. https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/125427s105lbl.pdf [Reference on antidote for overdose of KADCYLA: Section 2.2]

**Other Special Considerations:** Not available.

**Created:** Feb. 9, 2018
**Last Updated:** Sep 04, 2025

**Revision Information:** Version 8
**Product Use:** Laboratory Reagent

**Disclaimer:**

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