# SAFETY DATA SHEET

Version：1.0

**SD Rat Liver Sinusoidal Endothelial Cells**

Revision Date: 06/05/2026 SDS No.: USEN20603133

## 1. PRODUCT AND COMPANY IDENTIFICATION

**1.1 Product identifiers**

Product name : SD Rat Liver Sinusoidal Endothelial Cells

Product number : CSD-LSEC-05

Brand : MileCell

**1.2 Details of the supplier**

Company name and address : MILECELL BIOTECHNOLOGY INC.
6185 Cornerstone Court, Suite 101, San Diego, California 92121

**1.3 Emergency telephone number:** +858-705-8466

**1.4 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: : For R&D use

Uses advised against : Food, drugs, pesticide, or biocidal product use

## 2. HAZARDS IDENTIFICATION

**GHS Classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**GHS Classification**

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2A

**GHS label elements**

Hazard pictograms:



Signal word : Warning

**Hazard statements :**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

**Precautionary statements :**

Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ 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.

Response:

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

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

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

Storage:

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

P405 Store locked up.

Disposal:

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

**Physical and chemical hazards:** Not classified based on available information.

**Health hazards**

Causes skin irritation. Causes serious eye irritation.

**Environmental hazards**

Not classified based on available information.

**Other hazards which do not result in classification:** Contains animal-derived components; Handle with standard biosafety precautions.

## 3. COMPOSITION/INFORMATION ON INGREDIENT

**Substance / Mixture** : Mixture

| **Component** | **CAS#** | **Content %** | **GHS classification** |
|---|---|---|---|
| SD Rat Liver Sinusoidal Endothelial Cells | NA | 0.5 - 1 % | Non-hazard |
| Dimethyl sulfoxide | 67-68-5 | 8 - 12 % | Flam. Liq. Cat.4 |
| Sucrose | 57-50-1 | 0.5 - 1 % | Non-hazard |
| Sodium hydroxide | 1310-73-2 | 0.1 - 1% | Met. Corr.: Cat. 1 H290<br>Skin Corr.: Cat. 1A<br>Eye dam: Cat. 1<br>Acute aquatic: Cat. 3 |
| Potassium hydroxide | 1310-58-3 | 0.1 - 1% | Met. Corr.: Cat. 1 H290<br>Skin Corr.: Cat. 1A<br>Eye dam: Cat. 1<br>Acute aquatic: Cat. 3 |
| Water | 7732-18-5 | >85 % | Non-hazard |

## 4. FIRST AID MEASURES

General advice : First aiders need to protect themselves.

| | | |
|---|---|---|
| | | Show this safety data sheet to the doctor in attendance. |
| If inhaled | : | After inhalation: place in fresh air. |
| In case of skin contact | : | Take off immediately all contaminated clothing. Rinse skin with water. |
| In case of eye contact | : | Rinse out with plenty of water. Remove contact lenses. |
| If swallowed | : | Drink water (two glasses at most). Consult doctor if feeling unwell. |
| Most important symptoms and effects, both acute and delayed | : | The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11 |

## 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Specific hazards during fire fighting | : | Combustible.<br>Ambient fire may liberate hazardous vapors. |
| Suitable extinguishing media | : | Water, Foam, Carbon dioxide ($CO_2$), Dry powder |
| Unsuitable extinguishing media | : | No limitations of extinguishing agents are given. |
| Hazardous combustion products | : | Nature of decomposition products not known. |
| Specific extinguishing methods | : | Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : | Wear self-contained breathing apparatus. |

## 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| **Personal precautions** | : | Avoid substance contact. |
| Advice for non-emergency personnel: | : | Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8. |
| **Environmental precautions** | : | Do not let product enter drains. |
| Methods and materials for containment and cleaning up | : | Cover drains. Collect, bind, and pump off spills.<br>Take up carefully with liquid-absorbent materials. Dispose of properly. Clean up affected area. |

## 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| **Handling** | : | For precautions see section 2.2.<br>Smoking, eating and drinking should be prohibited in the application area. |
| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection. |

**Storage:** must comply with the technological safety standards.

| | | |
|---|---|---|
| Storage class | : | Other liquids and solids |

Further information on storage conditions: Recommended storage temperature: -196°C.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ingredients with workplace control parameters**

| Components | CAS# | Value type (Form of exposure) | Control parameters/Permissible concentration | Basis |
|---|---|---|---|---|
| Potassium hydroxide | 1310-58-3 | C | 2 mg/m3 | ACGIH |
| | | C | 2 mg/m3 | NIOSH REL |
| | | C | 2 mg/m3 | OSHA P0 |
| Sodium hydroxide | 1310-73-2 | C | 2 mg/m3 | ACGIH |
| | | C | 2 mg/m3 | OSHA P0 |
| | | C | 2 mg/m3 | NIOSH REL |
| Dimethyl sulfoxide | 67-68-5 | TWA | 250 ppm | US WEEL |

**Engineering Controls:** Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Personal protective equipment**

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH US. Safety glasses with side shields (e.g., NIOSH-approved)

Hand protection : Handle with gloves. Gloves must be inspected prior to use. Nitrile gloves.

Hygiene measures : Change contaminated clothing. Wash hands after working with substance.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | Colorless to light yellow Liquid |
| Odor | : | Odorless |
| pH | : | No data available |
| Melting point | : | No data available |
| Boiling point/boiling range | : | No data available |
| Flash point | : | No data available |
| Flammability (liquids) | : | No data available |
| Vapor pressure | : | No data available |
| Relative density | : | No data available |

## 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | The product is non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | : | Stable at -196°C. |
| Possibility of hazardous reactions | : | No decomposition if stored and applied as directed. |
| Conditions to avoid | : | Do not store above the temperature limit. |
| Incompatible materials | : | No data available |

## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

**Information on likely routes of exposure**

Inhalation

Eye contact

Skin contact

**Product:**

| | | |
|---|---|---|
| Acute toxicity (oral) | : | Not classified |
| Acute toxicity (dermal) | : | Not classified |
| Acute toxicity (inhalation) | : | Not classified |
| Skin corrosion/irritation | : | Causes skin irritation. |

The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

| | | |
|---|---|---|
| Serious eye damage/eye irritation | : | Eye irritation |

The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

| | | |
|---|---|---|
| Respiratory or skin sensitization | : | No data available |
| Specific target organ toxicity - single exposure | : | No data available |
| Specific target organ toxicity-repeated exposure | : | No data available |
| Aspiration hazard | : | No data available |
| Germ cell mutagenicity | : | No data available |
| Reproductive toxicity | : | No data available |

**Carcinogenicity:** 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, OSHA, NTP, ACGIH.

**Ingredients**

**Dimethyl sulfoxide**

Acute toxicity

LD50 Oral - Rat - male and female - 28,300 mg/kg (OECD Test Guideline 401)

LC0 Inhalation - Rat - male and female - 4 h - > 5.33 mg/l - dust/mist

(OECD Test Guideline 403)

LD50 Dermal - Rat - male and female - 40,000 mg/kg Remarks: (ECHA)

Skin corrosion/irritation

Skin - Rabbit

Result: slight irritation - 4 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: slight irritation - 24 h (OECD Test Guideline 405)

Respiratory or skin sensitization Maximisation Test - Guinea pig Result: negative

(OECD Test Guideline 406)

Local lymph node assay (LLNA) - Mouse Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chro-mosomal analysis)

Species: Rat

Application Route: Intraperitoneal Method: OECD Test Guideline 474 Result: negative

**Potassium hydroxide**

Acute toxicity:

LD50 Oral - Rat - male - 333 mg/kg (OECD Test Guideline 425)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: burns of mucous membranes, Cough, Shortness of breath, Possible damages, damage of respiratory tract

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns.

Remarks: (IUCLID)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage. (OECD Test Guideline 405)

Remarks: Causes serious eye damage.

Respiratory or skin sensitization Sensitisation test: - Guinea pig Result: negative Remarks: (IUCLID)

Germ cell mutagenicity

Test Type: Ames test Test system: S. typhimurium, Metabolic activation: with and without metabolic activation

Result: negative, Remarks: (ECHA)

Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative

Remarks: (ECHA)

**Sodium Hydroxide**

Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: burns of mucous membranes, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns.

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage. (OECD Test Guideline 405)

Remarks: (Regulation (EC) No 1272/2008, Annex VI) Remarks: Causes serious eye damage.

Respiratory or skin sensitization

Patch test: - In vitro study Result: negative

Remarks: (ECHA)

**11.2 Additional information：**

Based on component concentrations, no acute toxicity is anticipated under intended R&D use. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. However, when the product is handled appropriately, hazardous effects are unlikely to occur. Handle in accordance with good industrial hygiene and safety practice.

## 12. ECOLOGICAL INFORMATION

| | | |
|---|---|---|
| **Product** | | SD Rat Liver Sinusoidal Endothelial Cells |
| Eco toxicity | : | No data available |
| Persistence and degradability | : | No data available |
| Ozone-depletion potential | : | This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |
| Additional ecological information | : | No data available |

**Ingredients**

**Dimethyl sulfoxide**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 25,000 mg/l

End point: mortality Exposure time: 96 h Test Type: static test

Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 24,600 mg/l

Exposure time: 48 h

Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants: ErC50 (green algae): 17,000 mg/l

Exposure time: 72 h Test Type: static test

Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes

Toxicity to microorganisms: EC50 (activated sludge): 10 - 100 mg/l Exposure time: 30 min

Method: ISO 8192

Persistence and degradability :

Biodegradability Result: Not readily biodegradable. Biodegradation: 31 %

Exposure time: 28 d Method: OECD Test Guideline 301D GLP: yes

Partition coefficient: n-octanol/water: log Pow: -1.35 (20 °C)

Remarks: Bioaccumulation is not expected.

**Potassium hydroxide**

Toxicity to fish : LC50 (Mosquito fish): 80 mg/l End point: mortality

Exposure time: 96 h Test Type: static test Remarks: (ECOTOX Database)

Results of PBT and vPvB assessment: Not persistent, bioaccumulative, and toxic (PBT).

**Sodium Hydroxide**

Toxicity to fish : LC50 (Mosquito fish)): 125 mg/l Exposure time: 96 h

Remarks: (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates: EC50 (water flea): 40.4 mg/l End point: Immobilization

Exposure time: 48 h Remarks: (ECHA)

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods：**

| | | |
|---|---|---|
| Waste from residues | : | Dispose of in accordance with all applicable local regulations. Send to a licensed disposal company. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## 14. TRANSPORT INFORMATION

**International regulations:**

| | | |
|---|---|---|
| DOT (Department of Transportation) | : | Not regulated as a dangerous good |
| IATA-DGR (International Air Transport Association): | : | Not regulated as a dangerous good |
| IMDG-Code: | : | Not regulated as a dangerous good |

**National regulations:**

| | | |
|---|---|---|
| 49 CFR Road | : | Not regulated as a dangerous good |

**Special precautions for user:** Not classified as dangerous in the meaning of transport regulations.

## 15. REGULATORY INFORMATION

**CERCLA Reportable Quantity**

| | |
|---|---|
| Sodium Hydroxide (1310-73-2) | 1000 lb |
| Potassium hydroxide (1310-58-3) | 1000 lb |

**Clean Air Act:** No hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act (40 CFR 61). (40 CFR 68.130, Subpart F). (40 CFR 60.489).

**Clean Water Act:** No Hazardous Substances listed under the U.S. Clean Water Act: Section 311, Table 116.4A. Section 311, Table 117.3. Section 307.

**US State Regulations**

**Massachusetts Right To Know:** No components listed

**Maine Chemicals of High Concern:** No components listed

**Vermont Chemicals of High Concern:** No components listed

**Washington Chemicals of High Concern:** No components listed

**California Prop 65**

This product does not contain any chemicals above de minimis levels known to State of California to cause

cancer, birth defects, or any other reproductive harm.

**The components of this product are reported in the following inventories:**

**TSCA:** All substances listed as active on the TSCA Inventory

No substances are subjects to a significant New Use Rule.

No substances are subjects to TSCA 12 (b) export notification requirements.

## 16. OTHER INFORMATION

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Revision Date: 06/05/2026

**Date format：** mm/dd/yyyy