SECTION 2) HAZARDS IDENTIFICATION

Classification
- Eye Irritation - Category 2A
- Flammable Liquids - Category 4

Pictograms

Signal Word
Warning

Hazardous Statements - Health
Causes serious eye irritation

Hazardous Statements - Physical
Combustible Liquid

Precautionary Statements - General
- If medical advice is needed, have product container or label at hand.
- Keep out of reach of children.
- Read label before use.

Precautionary Statements - Prevention
- Wash thoroughly after handling.
- Wear protective gloves, protective clothing, eye protection/face protection.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Precautionary Statements - Response
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.
In case of fire: Use appropriate fire suppression methods to extinguish.

Precautionary Statements - Storage
Store in a well-ventilated place.

Precautionary Statements - Disposal
Dispose of contents/container to in accordance with local regulations.

Hazard not otherwise classified (HNOC)
None

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Chemical Name</th>
<th>% By Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000067-68-5</td>
<td>DIMETHYL SULFOXIDE</td>
<td>5% - 10%</td>
</tr>
</tbody>
</table>

Specific chemical identity and/or exact percentage (concentration) of the composition has been withheld to protect confidentiality.

Additional Notes
This substance or mixture contains no ingredients at concentrations to be considered hazardous as defined by OSHA HCS 2012, however this product should be handled according to good lab practices, with proper personal protective equipment, proper engineering controls and within the parameters of the purchaser’s chemical hygiene plan.

SECTION 4) FIRST-AID MEASURES

Inhalation
Remove source of exposure or move person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell or are concerned.

Eye Contact
Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face.

Skin Contact
Take off all contaminated clothing immediately, shoes and leather goods (e.g. watchbands, belts). If skin irritation occurs or rash occurs: Get medical advice/attention. Wash with soap and plenty of water. Wash contaminated clothing before re-use or discard.

Ingestion
Rinse mouth with water. Do not give anything by mouth to an unconscious person. Call a POISON CENTER/doctor if you feel unwell.

Most Important Symptoms/Effects, Acute and Delayed
No known significant effects or critical hazards.

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

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Dry chemical, foam, carbon dioxide, water-spray or alcohol-resistant foam. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards arising from substance or mixture
No data available.

Fire-fighting Procedures
Isolate immediate hazard area and keep unauthorized personnel out. Move undamaged containers from immediate hazard area if it can be done safely. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions
Wear protective pressure self-contained breathing apparatus (SCBA) and full turnout gear.
SECTION 6) ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Avoid breathing vapors, mist or gas. Avoid dust/aerosol formation. Isolate hazard area and keep unauthorized personnel away. If specialized clothing is required, refer to section 8 of this SDS.

Environmental Precautions
Stop spill/release if it can be done safely. Do not allow product to reach ground water, water course or sewage system.

Methods and Materials for Containment and Cleanup
Allow aerosols to settle; wearing protective clothing, gently cover spill with paper towel and apply 10% sodium hypochlorite, starting at perimeter and working towards the center; allow sufficient contact time before clean up (30 min). Clean up spills immediately. The use of additional PPE may be necessary for cleaning solutions.

SECTION 7) HANDLING AND STORAGE

Precautions for safe handling
Use aseptic procedures. Hand washing required after working with potentially hazardous materials and before leaving the laboratory. Do not get in eyes, on skin or on clothing. Decontamination of work surfaces daily, after finishing work and following spills. Standard microbiological practices should be followed. Avoid eating, drinking and smoking in work areas. Provide appropriate exhaust ventilation.

Conditions for safe storage, including any incompatibilities
Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatible materials. Keep containers securely sealed when not in use.

Specific end use(s)
Apart from the uses mentioned in sec.1, no other uses are stipulated.

SECTION 8) EXPOSURE CONTROLS/PERSOINAL PROTECTION

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

Eye protection
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.

Body Protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiration Protection
Respiratory protection not required.

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>MY_PEL_TWA_ppm - Malaysia Permissible Exposure Limit Time Weighted Average ppm</th>
<th>MY_PEL_TWA_mg_m3 - Malaysia Permissible Exposure Limit Time Weighted Average mg/m3</th>
<th>MY_PEL_Ceiling_limit_ppm - Malaysia Permissible Exposure Limit Ceiling ppm</th>
<th>MY_PEL_Ceiling_limit_mg_m3 - Malaysia Permissible Exposure Limit Ceiling limit mg/m3</th>
<th>OSHA TWA (ppm)</th>
<th>OSHA TWA (mg/m3)</th>
<th>OSHA STEL (ppm)</th>
<th>OSHA STEL (mg/m3)</th>
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</thead>
<tbody>
<tr>
<td>No applicable chemical</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA Tables (Z1, Z2, Z3)</th>
<th>OSHA Carcinogen</th>
<th>OSHA Carcinogen Threshold</th>
<th>OSHA Skin designation</th>
<th>NIOSH TWA (ppm)</th>
<th>NIOSH TWA (mg/m3)</th>
<th>NIOSH STEL (ppm)</th>
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<tr>
<td>ERA_EHS</td>
<td>7.02</td>
<td>CERT_M011</td>
<td><a href="http://www.atcc.org">www.atcc.org</a></td>
<td>Page 3 of 7</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
### Thresholds for OSHA Carcinogens

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<tr>
<th>Chemical Name</th>
<th>NIOSH Carcinogen</th>
<th>ACGIH TWA (ppm)</th>
<th>ACGIH TWA (mg/m³)</th>
<th>ACGIH STEL (ppm)</th>
<th>ACGIH STEL (mg/m³)</th>
<th>ACGIH Carcinogen</th>
<th>ACGIH TLV Basis</th>
<th>ACGIH Notations</th>
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<tbody>
<tr>
<td>No applicable chemical</td>
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</tr>
</tbody>
</table>

### SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

**Physical and Chemical Properties**

- **Density**: 8.34547 lb/gal
- **Specific Gravity**: 1.00001
- **% Solids By Weight**: 7.50000%
- **Appearance**: N/A
- **Odor Threshold**: N/A
- **Odor Description**: N/A
- **pH**: N/A
- **Water Solubility**: N/A
- **Flammability**: N/A
- **Flash Point Symbol**: N/A
- **Flash Point**: N/A
- **Viscosity**: N/A
- **Lower Explosion Level**: N/A
- **Upper Explosion Level**: N/A
- **Vapor Pressure**: N/A
- **Vapor Density**: N/A
- **Freezing Point**: N/A
- **Melting Point**: N/A
- **Low Boiling Point**: N/A
- **High Boiling Point**: N/A
- **Auto Ignition Temp**: N/A
- **Decomposition Pt**: N/A
- **Evaporation Rate**: N/A
- **Coefficient Water/Oil**: N/A

**Other Information**

No data available.

### SECTION 10) STABILITY AND REACTIVITY

**Stability**

Stable under recommended handling and storage conditions.

**Reactivity**

No data available.
Conditions To Avoid
   Direct sunlight, extremely high or low temperatures, ignition sources and incompatible materials.

Hazardous Reactions/Polymerization
   Hazardous polymerization will not occur.

Incompatible Materials
   Strong acids, strong bases, strong oxidizers.

Hazardous Decomposition Products
   Thermal decomposition generates: Carbon oxides (CO, CO2), Sodium oxides, Sulfur.

SECTION 11) TOXICOLOGICAL INFORMATION

Acute Toxicity
   Based on available data, the classification criteria are not met.
   0000067-68-5 DIMETHYL SULFOXIDE
   Inhalation at high concentrations could cause headache, dizziness, lowering of consciousness, and sedation. May accelerate skin
   absorption of other materials.

Skin Corrosion/Irritation
   Based on available data, the classification criteria are not met.
   0000067-68-5 DIMETHYL SULFOXIDE
   Substance is irritating to the skin.

Serious Eye Damage/Irritation
   Causes serious eye irritation
   0000067-68-5 DIMETHYL SULFOXIDE
   Substance is irritating to the eyes.

Respiratory/Skin Sensitization
   Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity
   Based on available data, the classification criteria are not met.

Carcinogenicity
   Based on available data, the classification criteria are not met.

Reproductive Toxicity
   Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure
   Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure
   Based on available data, the classification criteria are not met.
   0000067-68-5 DIMETHYL SULFOXIDE
   Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and blood, resulting in
   impaired functions and lesions of blood cells.

Aspiration Hazard
   Based on available data, the classification criteria are not met.

Likely Routes of Exposure
   Inhalation, Ingestion, Skin contact, Eye contact
   0000067-68-5 DIMETHYL SULFOXIDE
   The substance can be absorbed into the body by inhalation, through the skin and by ingestion.
SECTION 12) ECOLOGICAL INFORMATION

Toxicity
Based on available data, the classification criteria are not met.

Persistence and Degradability
No data available.

Bioaccumulative Potential

0000067-68-5 DIMETHYL SULFOXIDE
No potential for bioaccumulation.

Mobility in Soil
No data available.

Other Adverse Effects
No data available.

Results of the PBT and vPvB assessment

0000067-68-5 DIMETHYL SULFOXIDE
The substance is not PBT / vPvB.

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal
It is the responsibility of the user of the product to determine at the time of disposal whether the product meets local criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws.

SECTION 14) TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>U.S. DOT Information</th>
<th>IMDG Information</th>
<th>IATA Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number:</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>Proper shipping name:</td>
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<td>N/A</td>
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</tr>
<tr>
<td>Hazard class:</td>
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<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Hazardous substance (RQ):</td>
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<td>NA</td>
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<tr>
<td>Marine Pollutant:</td>
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<td>No</td>
</tr>
<tr>
<td>Note / Special Provision:</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Packing group:</td>
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<tr>
<td>Toxic-Inhalation Hazard:</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

SECTION 15) REGULATORY INFORMATION

Regulatory Information
The following regulations have been evaluated for this product: TSCA, SARA 313 & SARA 312.

<table>
<thead>
<tr>
<th>CAS</th>
<th>Chemical Name</th>
<th>% By Weight</th>
<th>Regulation List</th>
</tr>
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<tbody>
<tr>
<td>0000067-68-5</td>
<td>DIMETHYL SULFOXIDE</td>
<td>5% - 10%</td>
<td>SARA312,TSCA</td>
</tr>
</tbody>
</table>
Glossary

ACGIH - American Conference of Governmental Industrial Hygienists
BSC - Biological Safety Cabinet
CAS - Chemical Abstract Service
Chemtrec - Chemical Transportation Emergency Center (US)
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
HEPA - High Efficiency Particulate Air
LC - Lethal Concentration
LD - Lethal Dose
N/A - Not applicable
NIOSH - National Institute for Occupational Safety and Health
OEL - Occupational Exposure Limits
OSHA - Occupational Safety and Health Administration, US Department of Labor
PEL - Permissible Exposure Limit
SARA (Title III) - Superfund Amendments and Reauthorization Act
SARA 313 - Superfund Amendments and Reauthorization Act, Section 313
SCBA - Self Contained Breathing Apparatus
STEL - Short Term Exposure Limit
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act Public Law 94-469
TWA - Time Weighted Average
US DOT - US Department of Transportation

Version 1.0:
Revision Date: Jul 08, 2022
First Edition.

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