Section 1: Identification

Common Name/Trade Name	DIMETHYL SULFOXIDE (DMSO)	
Supplier Information	Letco Medical, LLC 1316 Commerce Drive NW Decatur, AL 35601 1 (800) 239-5288 +1 (734) 843-4693	**IN CASE OF EMERGENCY:** Chemtrec 1 (800) 424-9300 **(24 hours)**
Product Synonym(s)	Enviro S, dimethyl sulphoxide, methyl sulfoxide, sulfinylbis [methane]	
Relevant Use(s) of Product	Manufacture or Compounding of Substances	

Section 2: Hazards Identification

Classification of Substance or Mixture	Combustible Liquid; H227, Skin Irrit. 2; H315, Eye Irrit. 2; H319	
Signal Word	Warning	
Hazard Statement(s)	H227 H315 H319	Combustible liquid Causes skin irritation Causes serious eye irritation
Pictogram(s)		
Precautionary Statement(s)	P210 P264 P280 P302+P352 P305+P351+P338 P337+P313 P362 P403+P235 P501	Keep away from heat/sparks/open flames/hot surfaces – No smoking. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN Wash with soap and water. 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. Take off contaminated clothing and wash before reuse. Store in a well ventilated place. Keep cool. Dispose of contents/container to an approved waste disposal plant.
Hazards Not Otherwise Classified	None	
Ingredient(s) with Unknown Toxicity	No data available	

Section 3: Composition/Information on Ingredients

Chemical Name	Methane, sulfinylbis-
Common Name	Dimethyl Sulfoxide
CAS Number	67-68-5
Impurities and/or Stabilizing Additives	No data available

Section 4: First Aid Measures

General Advice	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. In general, DMSO is not dangerous to people, but like any other chemical, it should be treated with care, respect, and common sense.
If Inhaled	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
In Case of Skin Contact	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
In Case of Eye Contact	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
If Swallowed	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.
Most Important Symptoms and Effects	EFFECTS OF OVEREXPOSURE: General: DMSO has shown very few toxic symptoms in humans. The most common are nausea, skin rashes and an unusual garlic-onion-oyster smell on body and breath. Inhalation: High vapor concentrations may cause headache, dizziness, and sedation. Eyes: Low hazard for usual industrial/commercial handling by trained personnel. Skin: Stinging and burning of the skin as well as rashes and vesicles have been seen. A heat reaction may occur if applied to wet skin. Avoid contact with DMSO solutions containing toxic material or materials whose toxicological properties are not known. DMSO easily penetrates the skin and may enhance the rate of skin absorption of skin-permeable substances. But because of DMSO's low toxicity and its inability to carry less-permeable substances with it through the skin, it can be concluded that DMSO does not pose a significant threat by skin absorption. Ingestion: A low ingestion hazard. Eyes: Causes serious eye irritation. Skin: Causes skin irritation.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Recommended extinguishing media: alcohol resistant foam, CO2, powder, water spray.
Special Hazards Arising From the Substance/Mixture	Hazardous decomposition: Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane. Keep away from heat/sparks/open flames/hot surfaces -No smoking.
Special PPE and/or Precautions for Firefighters	Special Exposure Hazards: Burning dimethyl sulfoxide produces poisonous gases (sulfur oxides). Wear rubber gloves, SCBA, and rubber suit. Wear positive pressure self-contained breathing apparatus, (SCBA) with a full facepiece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean up immediately after fire. No smoking.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures	In case of mist formation use a respirator or self-contained breathing apparatus (SCBA). Put on appropriate personal protective equipment (see section 8).
Methods and Materials Used for Containment	Do not allow spills to enter drains or waterways. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.
Cleanup Procedures	If a spill or leak occurs, immediately consult your environmental supervisor. Remove ignition sources. Ventilate the area. Do not breathe the vapor or get liquid in eyes or on skin/clothing. Dilute and flush to wastewater treatment or absorb with inert material. Do not allow the material to enter streams or waterways.

Section 7: Handling and Storage

Precautions for Safe Handling	Keep away from sources of ignition-No smoking. Do not breathe vapor or mist. Avoid contact with skin, eyes, or clothing. Store in accordance with NFPA's publication NFPA 30, Flammable and Combustible Liquids Code. 29 CFR 1910.106 applies to the handling, storage, and use of flammable and combustible liquids.
Conditions for Safe Storage	Keep container tightly closed, in a well-ventilated place. Freezes (solidifies) at 18°C (64°F). Store in a cool dry area, away from heat, sparks and open flame. Keep containers sealed when not in use. Store out of direct sunlight. Prolonged heating above 150°C (302°F) can cause rapid, exothermic decomposition. Incompatible materials: Organic and inorganic acid chlorides, strong oxidizing agents, alkali metals, hydrobromic acid, acidic solutions of alkali bromides.

Section 8: Exposure Controls/Personal Protection

Components with Workplace Control Parameters	CAS No. 0000067-68-5 Methane, sulfinylbis- OSHA: No established limit. ACGIH: No established limit. NIOSH: No established limit. Supplier: No established limit.
Appropriate Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.
PPE - Eye/Face Protection	Safety glasses with side shield, tight-fitting goggles or face shield.
PPE - Skin Protection	Butyl rubber or nitrile (NBR) rubber gloves. Rubber apron and boots if splash hazard.
PPE - Body Protection	Butyl rubber or nitrile (NBR) rubber gloves. Rubber apron and boots if splash hazard.
PPE - Respiratory Protection	In case of mist formation us a respirator. Respirator type: organic vapor cartridge, SCBA or SAR. If respirators are used, a program should be instituted to assure compliance with OSHA standard 29 CFR 1910.134.

Section 9: Physical and Chemical Properties

Appearance	Colorless liquid.
Upper/Lower Flammability or Explosive Limits	Upper flammability or explosion limit: 42-63% by volume. Lower flammability or explosion limit: 3.0-3.5% by volume.
Odor	Odorless
Vapor Pressure	0.55 mbar (0.46 mmHg) at 20°C (68°F)
Odor Threshold	No data available
Vapor Density	2.7
pH	8.5 (50/50 in water)
Relative Density	1.1 g/mL Relative vapor density 2.70 - (Air = 1.0)
Melting Point/Freezing Point	Melting point/range: 18°C (64 °F)
Solubility	Water solubility: miscible
Initial Boiling Point and Boiling Range	189°C (372°F)
Flash Point	89°C (192 °F) - closed cup, 95°C (203°F) Open Cup
Evaporation Rate	(Ether = 1) 0.026 (n-butyl acetate = 1)
Flammability (Solid, Gas)	Not applicable
Partition Coefficient	Partition coeff. n-octanol/water (log Pow): -2.03
Auto-Ignition Temperature	300-302°C (572-575°F)
Decomposition Temperature	Not Measured
Viscosity	2.0 mPas or cP (@ 25°C/77°F)

Section 10: Stability and Reactivity

Reactivity	Hazardous Polymerization will not occur.
Chemical Stability	Stable under normal circumstances.
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	Prolonged heating above 150°C (302°F) can cause rapid, exothermic decomposition.
Incompatible Materials	Organic and inorganic acid chlorides, strong oxidizing agents, alkali metals, hydrobromic acid, acidic solutions of alkali bromides.
Hazardous Decomposition Products	Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane.

Section 11: Toxicological Information

Acute Toxicity - LD50 Oral	LD50 Oral - rat - 14,500 mg/kg, Category: NA
Acute Toxicity - Inhalation	LD50 Inhalation Gas - rat - 40250 ppm, Category: NA
Acute Toxicity - Dermal	LD50 Dermal - rabbit - > 5,000 mg/kg, Category: 5
Acute Toxicity - Eye	No data available
Skin Corrosion/Irritation	Category 2, Causes skin irritation.
Serious Eye Damage/Irritation	Category 2, Causes serious eye irritation.
Respiratory or Skin Sensitazation	Not Applicable
Germ Cell Mutagenicity	Not Applicable.
Carcinogenicity IARC	Not Applicable.
Carcinogenicity ACGIH	Not Applicable.
Carcinogenicity NTP	Not Applicable.
Carcinogenicity OSHA	Not Applicable.
Reproductive Toxicity	Not Applicable.
Specific Target Organ Toxicity - Single Exposure	Not Applicable.
Specific Targer Organ Toxicity - Repeated Exposure	Not Applicable.
Aspiration Hazard	Not Applicable.

Section 12: Ecological Information

Toxicity	Toxicity to fish-LC50 - Pimephales promelas - 34,000 mg/l - 96 hr. Toxicity to crustacea EC50 - Daphnia magna - 25,000 mg/l - 48 hr. Toxicity to algae ErC50: Skeletonema costatum 12350.00 96 hr.
Persistence and Degradability	There is no data available on the preparation itself.
Bio-accumulative Potential	Not Measured.
Mobility in Soil	No data available
Other Adverse Effects	Biological Oxygen Demand: Theoretical Oxygen Demand at 10ppm: 123mg oxygen. Chemical Oxygen Demand at 10ppm: 107 mg/L. Biological Oxygen Demand-5 at 10ppm: </=1.0 mg/L.

Section 13: Disposal Considerations

Waste Treatment Methods Product	Observe all federal, state and local regulations when disposing of this substance.
Waste Treatment Methods Packaging	No data available.
Special Precautions Landfill or Incinerations	No data available
Other Information	No data available

Section 14: Transport Information

UN Number	NA1993
UN Proper Shipping Name	Combustible liquid, n.o.s., (Dimethyl Sulfoxide)
Transport Hazard Class(es)	Class 3, Combustible Liquid.. <119 gallons: Not regulated. >119 gallons: Combustible
Packaging Group	III
Environmental Hazards	Marine pollutant: No

Section 15: Regulatory Information

Regulatory Overview: The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. Toxic Substance Control Act (TSCA): All components of this material are either listed or exempt from listing on the TSCA Inventory. WHMIS Classification: B3 D2B. US EPA Tier II Hazards: Fire: Yes, Sudden Release of Pressure: No, Reactive: No, Immediate (Acute): Yes, Delayed (Chronic): No. EPCRA 311/312 Chemicals and RQs: To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. EPCRA 302 Extremely Hazardous: To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. EPCRA 313 Toxic Chemicals: To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. Proposition 65 - Carcinogens (>0.0%): To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. Proposition 65 - Developmental Toxins (>0.0%): To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. Propostion 65 - Female Repro Toxins (>0.0%): To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. Proposition 65 - Male Repro Toxins (>0.0%): To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. N.J. RTK Substances (>1%): Methane, sulfinylbis-. Penn RTK Substances (>1%): To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Section 16: Other Information

Additional Information	N/A
Prepared By	Scarlotte Smith
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