DALYNN BIOLOGICALS

SAFETY DATA SHEET

Version 1.5
Revision Date 01/22/2024

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Oxidase Reagent
Catalog Number:	RO95
Product Use:	For laboratory use only
Manufacturer's Name:	Dalynn Biologicals Inc.
Supplier's Name:	Dalynn Biologicals Inc.
Address:	3253 – 34 Avenue NE Calgary, AB, Canada T1Y 6X2
Telephone:	1-888-404-4045
Fax:	(403) 250-9010
Chemical Emergency: Phone Number Only	1-613-996-6666

2. HAZARD IDENTIFICATION

Emergency Overview

GHS Classification
Flammable liquids (Category 4)

GHS Label Elements, Including Precautionary Statements

Pictogram	No symbol
Signal word	Warning
Hazard statement(s)	
H226	Flammable liquid or vapor.
H227	Combustible liquid.
H313	May be harmful in contact with skin.
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.

3. COMPOSITION & INFORMATION ON INGREDIENTS

Synonyms None

INGREDIENT	%	CAS-No.	EC-No.	Index-No.
N,N,N',N'-Tetramethyl-p-phenylenediamine	0.6	637-01-4	211-274-8	-

Dimethyl sulfoxide	>99	67-68-5	200-664-3	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move affected individual out of affected area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing. Wash affected area with soap and plenty of water. Take patient to hospital and consult a physician.

In case of eye contact
As a precaution, flush eyes with plenty of water for at least 15 minutes.

If swallowed
Do not induct vomiting. Rinse mouth with water if patient is conscious. Take patient to hospital and consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of an ignition source when the temperature is above the flash point. Keep away from heat, sparks, open flame. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions: carbon oxides, sulfur oxides

Explosion data – sensitivity to mechanical impact
No data available.

Explosion data – sensitivity to static discharge
No data available.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Wearing appropriate safety gear including chemical resistant gloves and dust mask or respirator.

Soak up with paper towel and place in sealed container and hold for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use in area with adequate ventilation. Keep away from sources of ignition.

Conditions for safe storage
Store at room temperature away from direct light or sunlight.
Keep container tightly closed in a well ventilated place away from ignition sources.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Use in area with adequate ventilation. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type ABEK (EN14387) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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. Wash and dry hands after use.

Eye protection
Face shield and/or safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin and body protection
Wear appropriate clothing such as a lab coat that covers as much of the body as possible. Complete suit can also be worn if desired.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Liquid
Color	Light purple

Safety data

pH	No data available
Melting point/ freezing point	16 - 19°C (61-66°F)
Boiling point	189°C (372°F)

Flash point	87°C (189°F) cc
Ignition temperature	301°C (574°F)
Auto ignition temperature	No data available
Lower explosion limit	3.5% (V)
Upper explosion limit	42% (V)
Vapor pressure	0.55 hPa (0.41 mmHg) at 20°C (68°F)
Density	1.1 g/mL
Water solubility	completely soluble
Partition coefficient/ n-octanol/water	log Pow: -2.03
Relative vapor density	2.70 (Air = 1.0)
Odour	No data available
Odour threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
Heat, flames and sparks

Materials to avoid
Strong oxidizing agents, strong reducing agents, acid chlorides, phosphorus halides, strong acids, potassium permanganate, copper wool

Hazardous decomposition products
Other decomposition products – No data available
Hazardous decomposition products formed under fire conditions – Carbon oxides, sulfur oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral – Rat – 14,500 mg/kg

Inhalation LC50
LC50 Inhalation – Rat – 4h – 40,250 ppm

Dermal LD50
LD50 Dermal – Rabbit – >5,000 mg/kg

Other information on acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
Skin sensitization has not been reported in hundreds of human volunteers participating in a DMSO clinical trial.

Germ cell mutagenicity
Has shown genotoxicity in vitro and in vivo in animal studies

Carcinogenicity
IARC: 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.
ACGIH: 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 ACGIH.
Has been shown to be mutagenic and carcinogenic in animals

Reproductive toxicity
Has shown negative effects on fertility in animal models (ie. rats and mice)

Teratogenicity
Has shown negative effects on embryo development in animal models

Specific target organ toxicity – single exposure (GHS)
No data available

Specific target organ toxicity – repeated exposure (GHS)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	May be harmful if inhaled. Material has a very low vapor pressure at room temperature, so inhalation exposures are not expected unless material is heated or misted.
Skin	May be harmful if absorbed through skin. DMSO readily penetrates skin and may significantly enhance the absorption of numerous chemicals. Increased absorption of these other chemicals could lead to their increased toxicity. Skin sensitization was not observed with DMSO in human volunteers or guinea pigs.
Eyes	May cause mild eye irritation.
Ingestion	Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system effects. May cause garlic

smell on breath and body.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional information
RTECS: PV6210000

12. ECOLOGICAL INFORMATION

Toxicity

Component	Freshwater Algae	Freshwater Fish	Water Flea
Dimethyl sulfoxide	Green algae (Pseudokirchneriella subcapitata) EC50 = 17,000 mg/L – 72h	Fathead minnow (Pimpehales promelas) LC50 = 34,000 mg/L – 96h Rainbow trout (Oncorhynchus mykiss) LC50 = 35,000 mg/L – 96h	Daphnia magna EC50 = 24,600 mg/L – 48h

Persistence and degradability
Biodegradability: Result: 31% - According to the results of tests of biodegrabability this product is Not readily biodegradable.
Method: OECD Test Guideline 301D

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN Number: 1993 Class: NONE Packing Group: III
Proper Shipping Name: Combustible liquid, N.O.S. (Dimethyl sulfoxide)
Marine Pollutant: No
Poison Inhalation Hazard: No

IMDG
Not dangerous good

IATA
Not dangerous good

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by them.

16. OTHER INFORMATION

Further information
 The above information is believed to be correct but does not purport to be all inclusive and shall be only used as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Dalynn Biologicals Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.