



SAFETY DATA SHEET

Reusable Nutrients – MSO

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name	RN-MSO
Synonyms	Methylated Seed Oil
Use	Pesticide adjuvant
Company	Reusable Nutrients LLC
Address	900 NE Loop 410, Ste D115 San Antonio, TX 78209
Chemical Family	Surfactants
Telephone	CHEMTREC North America Transportation Emergency (24-hr) (800) 424-9300 CHEMTREC World Wide (703) 527-3887 Other Emergencies (24-hr) (325) 643-8038 MSDS and Product Information (8:00am-4:30pm CST) Health and Safety Information (7:30am-4:00pm CST)

SECTION 2 HAZARDS IDENTIFICATION

GHS Hazards

Hazard symbols



WARNING!

Signal word WARNING

Hazard statements H320 Causes eye irritation
H316 Causes mild skin irritation
P264 Wash thoroughly after handling
P280 Wear protective gloves/eye/face protection

Response:

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do; continue rinsing.

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P362 Take of contaminated clothing and wash before reuse.

P261 Avoid breathing fumes/mist/vapor/spray

Storage:

P404 Store in a closed container

P401 Store at ambient temperature

Disposal:

P501 Dispose of contents/container in accordance with local/national regulations.



SAFETY DATA SHEET

Reusable Nutrients – MSO

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	Percent
Fatty acids, C16-18 and C18-unsaturated, methyl esters	67762-38-3	70-90
Proprietary blend of nonionic surfactants	Proprietary	10- 30

SECTION 4 FIRST AID MEASURES

Eye contact Immediately flush eyes with plenty of water; remove contact lenses, if present. Seek medical attention if irritation occurs.

Skin contact Cleanse affected area(s) thoroughly by washing with plenty of water. Remove contaminated clothing and shoes. If irritation or redness develops and persists, seek medical attention.

Inhalation Move person to fresh air. Keep person at rest in a position comfortable for breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Ingestion (Swallowing) If swallowed, wash out mouth with water. Move person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most Important symptoms/effects, acute and delayed:

EYES: No known significant effects or critical hazards.

SKIN: No known significant effects or critical hazards.

INHALATION: No known significant effects or critical hazards.

INGESTION: No known significant effects or critical hazards.

Medical Attention and Special Treatment needed:

Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5 FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable Extinguishing Media: Avoid solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture: If in a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.



SAFETY DATA SHEET

Reusable Nutrients – MSO

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters: Promptly isolate the scene by removing all persons from the vicinity of the incident. Burning liquids may be extinguished by dilution with water. DO not use direct water stream, as it may spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for fire-fighters: Wear positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode and protective fire-fighting clothing. If protective clothing is not available or not used, fight fire from a protected location or safe distance.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Keep upwind of spill. Ventilate area of leak or spill.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). See Section 12, Ecological Information.

Method for clean up: Contain spilled material if possible. Absorb with materials such as: Sand. Dirt. Collect in suitable and properly labeled containers. Dispose of via a licensed waste disposal contractor.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapor. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Put on appropriate personal protective equipment. Eating, drinking, smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See Section 8 for addition information on exposure controls and personal protection.

Storage: Store between the following temperatures: 5 to 30°C (41 to 86°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION



SAFETY DATA SHEET

Reusable Nutrients – MSO

STEL – Short Term Exposure Limit (15 minutes): TWA- Time Weighted Average

Control parameters:

Occupational Exposure Limits:

None.

Appropriate Engineering Controls:

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental Exposure Controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal Protective Equipment (PPE):

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. > 8 hours (breakthrough time): Synthetic or rubber gloves or natural rubber (latex).

Eye/face: Wear glasses with side shield or chemical goggles in case of splashing.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Oily liquid, Clear Amber colored
Odor:	Mild/Bland
pH:	Not available.
Melting/Freezing Point:	(SEE PRODUCT BULLETINS FOR SPECIFICS)
Initial Boiling Point:	(SEE PRODUCT BULLETINS FOR SPECIFICS)
Flash Point:	>200°F (SEE PRODUCT BULLETINS FOR SPECIFICS)
Evaporation Rate:	No test data available
Flammability (solid, gas):	Noncombustible
LEL (vol % in air):	No test data available
UIL (vol % in air):	No test data available
Vapor Pressure (mm Hg):	No test data available
Vapor Density (air=1):	No test data available
Relative Density:	7.8 lbs/gallon
Solubility in Water:	Completely soluble
Partition coefficient:	<4.5



SAFETY DATA SHEET

Reusable Nutrients – MSO

Auto-ignition Temperature:	No test data available
Decomposition Temperature:	No test data available
Viscosity:	No test data available

Note: Unless otherwise stated, values are determined at 20°C (66°F) and 760 mm Hg (1 atm).

SECTION 10 STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under normal ambient and anticipated conditions of use
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to Avoid:	Exposure to elevated temperatures can cause product to decompose.
Materials to Avoid (Incompatible Conditions):	Strong acids. Strong bases. Strong oxidizers. Reducing materials. Combustible materials.
Hazardous Decomposition Products:	Not anticipated under normal conditions.

SECTION 11 TOXICOLOGICAL INFORMATION

Toxicological information in this product or its components appear in this section when such data is available.

Acute toxicity:

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Typical for this family of materials.

LD50, Rat, 960-3,980 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Typical for this family of materials.

LD50, Rabbit, 2,000 – 2,991 mg/kg

Acute inhalation toxicity

Prolonged excessive exposure to mist may cause serious adverse effects, even death.

Vapor may cause irritation of the upper respiratory tract (nose and throat).

Typical for this family of materials.

LC50, Rat, 4 Hour, dust/mist, 1.15 mg/l

Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation



SAFETY DATA SHEET

Reusable Nutrients – MSO

May cause severe eye irritation
May cause severe corneal injury

Sensitization

For this family of materials:
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Information on toxicological effects:

Components	Species	Test Results
Dermal – LD50	Rabbit	200-2,991 mg/kg
Inhalation - LC50	Rat	4 hour, dust/mist, 1.15 mg/kg
Oral – LD50	Rat	960 - 3,980 mg/kg
Skin corrosion/irritation	Prolonged contact may cause slight skin irritation	
Serious eye damage/eye irritation	May cause severe eye irritation. May cause severe corneal injury.	
Respiratory sensitization	No relevant data found	
Specific Target Organ Systemic Toxicity (Single Exposure)	Evaluation of available data suggests that this material is not an STOT-SE toxicant.	
Specific Target Organ Systemic Toxicity (Repeated Exposure)	For this family of materials: In animals, effects have been reported on the following organs: Kidney. Liver.	
Carcinogenicity	For this family of materials: Did not cause cancer in laboratory animals.	
Teratogenicity	For this family of materials: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.	
Reproduction toxicity	No relevant data found	
Mutagenicity	For this family of materials: In vitro genetic toxicity studies were negative.	
Aspiration toxicity	Based on physical properties, not likely to be an aspiration hazard.	

SECTION 12 ECOLOGICAL INFORMATION

Acute toxicity to fish	For this family of materials: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). For this family of materials: LC50, Pimephales promelas (fathead minnow), 96 Hour, 3.8-62 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates	For this family of materials: LC50, Daphnia magna (water flea), 48 Hour, 9.3-21.4 mg/l, OECD Test Guideline 202 or Equivalent
Toxicity to bacteria	For this family of materials: IC50, Bacteria, 16 Hour, > 1,000 mg/l
Persistence and Degradability	
Biodegradability:	For this family of materials: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not



SAFETY DATA SHEET

Reusable Nutrients – MSO

biodegradable under environmental conditions. 10-day Window: Not applicable

Biodegradation: <60%

Exposure Time: <28 d

Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 2.15 – 2.25 mg/mg

Chemical Oxygen Demand: 2.09 – 2.25 mg/mg

Bioaccumulative potential

Partition coefficient: n-octanol/water (log Pow)

2.1-3.4 Calculated

Bioconcentration factor (BCF)

5.9-48 Fish. Estimated

Mobility in soil

No relevant data found

SECTION 13

DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions, and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14

TRANSPORT INFORMATION

DOT U.S. Department of Transportation

Proper shipping name:

UN Number: Not regulated

Packing group: -

Transport hazard class(es): -

Environmental hazards: No

Additional Information: -

IATA Not regulated.

IMDG Not regulated.

Annex II of MARPOL

73/78 and the IBC Code: Not classified for MARPOL



SAFETY DATA SHEET

Reusable Nutrients – MSO

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States Inventory (TSCA 8b): This material is not listed or exempted

Acute Health: No

Chronic Health: No

Fire Hazard: No

Pressure Hazard: No

Reactive Hazard: No

CERCLA/SARA – Section 313 and 40 CFR 372:

This material does not contain toxic chemicals (in excess of the applicable de Minimis concentration) that are subject to the reporting requirements of SARA 313 (40 CFR 372)

EPA (CERCLA) Reportable Quantity (in pounds): - None Known –

CERCLA/SARA – Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This Material does not contain extremely hazardous substances subject to the reporting requirements of SARA 302 (40 CFR 372)

California Proposition 65:

This material does not contain any component or chemical currently known to the State of California to cause cancer, birth defects or other reproductive harm at levels which are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5)

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC or OSHA See Section 11 for carcinogenicity information of individual components, if any.

TSCA: All components are listed on the TSCA inventory, or not required to be listed on the TSCA inventory.

INTERNATIONAL REGULATIONS

Canadian Regulations: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information require by the CPR.

Domestic Substances List: Listed

WHMIS Hazard Class: Not Regulated

SECTION 16 OTHER INFORMATION

THE DATA AND INFORMATION CONTAINED HEREIN ARE BEING FURNISHED FOR INFORMATIONAL PURPOSES ONLY, UPON THE EXPRESS CONDITION THAT EACH CUSTOMER SHALL MAKE ITS OWN ASSESSMENT OF APPROPRIATE USE AND APPROPRIATE SHIPPING, TRANSFER AND STORAGE MATERIALS AND PROCEDURES FOR REUSABLE NUTRIENTS PRODUCTS. ALTHOUGH BASED ON INFORMATION SOURCES WHICH REUSABLE NUTRIENTS CONSIDERS ACCURATE AND RELIABLE, REUSABLES NUTRIENTS LLC MAKES NO WARRANTY.
