

# Dynalene MS-450

## 1. Product and Company Identification

### 1.1 Product identifiers

Product Name: Dynalene MS-450  
Producer: Dynalene, Inc.  
Product Number: Not available.  
CAS-No.: Not available.

### 1.2 Identified uses of the product and uses advised against

Identified Uses: Heat transfer fluid/salt.

### 1.3 Details of the chemical supplier

Company: Dynalene, Inc.  
5250 West Coplay Road  
Whitehall, PA 18052  
USA  
Telephone: +1 610-262-9686  
Fax: +1 610-262-7437

### 1.4 Emergency telephone number

Within the U.S.: +1 800-424-9300 (CHEMTREC)  
Outside the U.S.: +1 703-527-3887 (CHEMTREC)

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Oxidizing solids (Category 3), H272  
Skin corrosion/irritation (Category 2), H315  
Serious eye damage/irritation (Category 2A), H319  
STOT-respiratory tract irritation – single exposure (Category 3), H335

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H272 May intensify fire; oxidizer.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

Precautionary statement(s)

Keep away from heat. Store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection. Wash skin thoroughly after handling.

Store locked up in a well-ventilated place. Keep container tightly closed. Dispose of contents/container to an approved waste disposal plant.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention. Take off contaminated clothing and wash before reuse.

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.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None.

## 3. Composition/Information on Ingredients

### 3.1 Product mixture

Synonyms: Mixture.  
Molecular Wt: Not available.  
CAS-No.: Not available.

Ingredients	Hazard Info	Identifier	Concentration
Calcium nitrate Tetrahydrate	Ox. Sol. 3 (H272); Skin Irrit. 2 (H315); Eye Irrit. 2A (H319)	CAS No: 13477-34-4	30-60%
Potassium nitrate	Ox. Sol. 3 (H272); Skin Irrit. 2 (H315); Eye Irrit. 2A (H319); STOT-SE 3 (H335)	CAS No: 7757-79-1	20-50%
Sodium nitrate	Ox. Sol. 3 (H272); Eye Irrit. 2A (H319)	CAS No: 7631-99-4	10-40%

## 4. First Aid Measures

### 4.1 Description of first aid measures

#### Skin exposure

If this product contaminates the skin, wash off with soap and plenty of water. Consult a physician.

#### Eye exposure

If this product enters the eyes, rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### Inhalation

If dusts or mists of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Consult a physician.

#### Ingestion

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 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 in section 11.

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available.

## 5. Fire Fighting Measures

### 5.1 Suitable (and unsuitable) extinguishing media

Suitable: Water spray, carbon dioxide, foam, dry chemical, any ABC class.

### 5.2 Specific hazards arising from the chemical

Potassium/sodium/calcium oxides, nitrogen oxides (NO<sub>x</sub>). The nature of the decomposition products is unknown.

**5.3 Advice for firefighters**

Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers if it can be done without risk to firefighters. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmental areas. Decontaminate fire-response equipment with soap and water solution if necessary.

**5.4 Further information**

Use water spray to cool unopened containers.

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**6. Accidental Release Measures****6.1 Personal precautions, protective equipment, and emergency procedures**

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of an uncontrolled release, clear the affected area, protect people, and respond with trained personnel. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

**6.4 References to other sections**

For disposal see section 13.

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**7. Handling and Storage****7.1 General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the day.

**7.2 Precautions for safe handling**

All employees who handle this material should be trained to handle it safely. Use in a well-ventilated location. Open drums and other containers of this product slowly, on a stable surface. Drums and other containers of this product should be properly labeled. Empty drums and containers may contain residual amounts of this product, therefore, empty containers should be handled with care. Keep away from heat and sources of ignition – no smoking. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Material is hygroscopic.

**7.3 Conditions for safe storage, including any incompatibilities**

Move drums of this product carefully, with the appropriate drum-handling equipment. Store drums and other containers in cool, dry locations, away from direct sunlight, or sources of intense heat. Storage areas should be made of fire-resistant materials. Keep containers away from incompatible chemicals. Keep containers tightly closed and in dry, well-ventilated places.

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**8. Exposure Controls/Personal Protection****8.1 Control and exposure limits recommended by the chemical manufacturer**

OSHA Permissible Exposure Limit (PEL):	None established.
OSHA Short Term Exposure Limit (STEL):	None established.
ACGIH Threshold Limit Value (TLV):	None established.
ACGIH Short Term Exposure Limit (STEL):	None established.

**8.2 Appropriate engineering controls**

Use with adequate ventilation to minimize exposure to mists or sprays of this product. Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used. Monitoring of oxygen level is recommended. Decontaminate the area thoroughly. If necessary, decontaminate spill response equipment with soap and water solution

### 8.3 Individual protection measures, such as personal protective equipment

#### Respiratory protection

None needed for normal circumstances of use. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, or applicable State regulations. Use supplied air respiration protection if oxygen levels are below 19.5% or are unknown.

#### Eye protection

Wear safety glasses with side shields.

#### Hand protection

Wear butyl rubber, natural rubber, neoprene, Nitrile rubber, or other suitable gloves for routine industrial use.

#### Body protection

Complete suit protecting against chemicals.

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## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	White, crystalline.
b) Odor	Odorless.
c) Odor threshold	Not available.
d) pH	Not available.
e) Melting/freezing point	120°C (248°F)
f) Boiling point	Not available.
g) Flash point	Not available.
h) Evaporation rate	Not available.
i) Flammability (solid, gas)	Not available.
j) Upper/lower flammability or explosive limits	Upper (UEL): Not available. Lower (LEL): Not available.
k) Vapor pressure	<1.0 mmHg at 25°C (77°F)
l) Vapor density	Not available.
m) Relative density	2.0 g/cm <sup>3</sup> at 25°C (77°F)
n) Water solubility	Soluble.
o) Partition coefficient: n-octanol/water	Not available.
p) Auto-ignition temp	Not available.
q) Decomposition temp	>460°C (>860°F)
r) Viscosity	40 cP at 200°C (392°F)

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## 10. Stability and Reactivity

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under ordinary conditions of use and storage.

**10.3 Possibility of hazardous reactions**

No data available.

**10.4 Conditions to avoid**

Contact with incompatible chemicals and exposure to extremely high temperatures. Avoid electrical sparks and other sources of ignition.

**10.5 Incompatible materials**

Strong oxidizers, strong acids, acid chlorides, acid anhydrides, chloroformates, organic materials, cyanides, thiocyanates, or strong reducing agents.

**10.6 Hazardous decomposition products**

No data available. In the event of fire, see section 5.

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**11. Toxicological Information****11.1 Information on toxicological effects****Acute toxicity**

Calcium nitrate tetrahydrate

LD50 Oral – rat: 3,900 mg/kg

Potassium nitrate

LD50 Oral – rat: 3,750 mg/kg

Sodium nitrate

LD50 Oral – rat: 1,267 mg/kg

LD50 Oral – rabbit: 2,680 mg/kg

LD50 Intravenous – mouse: 175 mg/kg

**Skin corrosion/ irritation**

Calcium nitrate: Skin – rabbit

Result: Mild skin irritation, 24 hours

**Serious eye damage/eye irritation**

Calcium nitrate: Eye – rabbit

Result: Mild eye irritation, 24 hours

**Suspected cancer agent**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, NTP, or OSHA.

IARC: 2A – Group 2A: Probably carcinogenic to humans (potassium nitrate, calcium nitrate).

**Irritancy of product**

This product may cause irritation to contaminated tissues.

**Reproductive toxicity**

This product is not reported to produce mutagenic, embryotoxic, teratogenic, or reproductive effects in humans.

**Medical conditions aggravated by exposure**

It is anticipated that mainly skin, eye, and respiratory disorders may be aggravated after over-exposure.

**Recommendations to physicians**

Treat symptoms and eliminate over-exposure.

**Biological exposure indices**

Currently, there are no Biological Indices (BEIs) associated with the components of this product.

## 12. Ecological Information

### 12.1 Ecotoxicity (aquatic and terrestrial)

This product may be harmful to aquatic life if large quantities are released into bodies of water.

Potassium nitrate

Toxicity to fish: LC50 – *Gambusia affinis* (Mosquito fish) – 22.5 mg/L, 96 hrs.  
Static test LC50 – *Poecilia reticulata* (guppy) – 1,378 mg/L, 96 hrs.

Toxicity to invertebrates: EC50 – *Daphnia magna* (Water flea) – 226 mg/L, 72 hrs.

Sodium nitrate

Toxicity to fish: LC50 – *Gambusia affinis* (Mosquito fish) – 6,650 mg/L, 96 hrs.

Toxicity to invertebrates: EC50 – *Daphnia magna* (Water flea) – 6,000 mg/L, 24 hrs.

### 12.2 Persistence and degradability

No data available.

### 12.3 Mobility in soil

No data available.

### 12.4 Other adverse effects

None.

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## 13. Disposal Considerations

### 13.1 Waste treatment methods

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

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## 14. Transport Information

### IMDG / IATA / DOT

UN Number: 1477  
Class: 5.1  
UN Proper Shipping Name: Nitrates, inorganic, N.O.S.  
Packing Group: III

### Marine pollutant

No component of this product is listed as a Marine Pollutant (49 CFR 172.101, Appendix B).

### Transport Canada transportation of dangerous goods regulations

This material is not considered as dangerous goods.

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## 15. Regulatory Information

**SARA 302** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302 (Extremely Hazardous Substances).

**SARA 313** (Toxics Release Inventory Chemicals): Potassium nitrate, CAS-No.: 7757-79-1; Revision date: 2007-03-01.

**SARA 311/312** (Emergency Planning and Community Right-to-Know Act): Reactivity hazard, chronic health hazard.

**TSCA** All components of this product are on the Toxic Substance Control Act Inventory.

<b>EINECS</b>	All components of this product are on the European Inventory of Existing Commercial Chemical Substances.
<b>California Prop 65</b>	This product does not contain ingredients that cause cancer or reproductive harm known to the state of California.
<b>Canada DSL</b>	All components of this product are on the Canadian Domestic Substance List.

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## 16. Other Information

**Revision Date**  
14 August 2020

This SDS was prepared by Dynalene, Inc.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Dynalene Heat Transfer Fluids assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Dynalene Heat Transfer Fluids assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.