

MS-XTT

1. Product and Company Identification

1.1 Product identifiers

Product Name: **MS-XTT**
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 for molten salt applications.

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)

Acute toxicity, Oral (Category 4), H302
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statement(s)

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.
 P501 Dispose of contents/ container to an approved waste disposal plant.

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.
 EC-No.: Not available.

Ingredients	GHS Classification	EC-No.	CAS-No.	Concentration
Lithium Chloride	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; H302, H315, H319	231-212-3	7447-41- 8	30-50%
Potassium Chloride	Not hazardous	231-211-8	7447-40- 7	30-50%
Sodium Chloride	Not hazardous	231-598-3	7647-14- 5	2.0-10%
Inhibitor package (trade secret)	Not hazardous		N/A	0.5-5.0%

4. First Aid Measures

4.1 Description of first aid measures

Skin exposure

Wash off with soap and water. Consult a physician.

Eye exposure

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Inhalation

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

Ingestion

Never give anything by mouth to an unconscious person. Rinse mouth with water and 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

No data available.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

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

Proper protective equipment should be used. In case of an uncontrolled release, clear the affected area and protect people. Avoid dust formation. Avoid breathing dust. Avoid breathing vapors. Ensure adequate ventilation.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 References to other sections

For disposal see section 13.

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

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.3 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Hygroscopic -- keep in a dry place. Storage class (TRGS 510): 13: Non Combustible Solids

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

Contains no substances with occupational exposure limit values, although following Section 6.1 is recommended in order to limit unnecessary exposure.

8.2 Appropriate engineering controls

Use with adequate ventilation to minimize exposure to any vapors or dusts of this product. Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used. Follow general hygiene considerations listed in Section 7.1

8.3 Individual protection measures, such as personal protective equipment

Eye/face protection:

Safety glasses with side-shields conforming to EN166 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. Wash and dry hands.

Body Protection:

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a) Appearance	White, powder.
b) Odor	No data available.
c) Odor threshold	No data available.
d) pH	No data available.
e) Melting/freezing point	below 605°C
f) Boiling point	No data available.
g) Flash point	No data available.
h) Evaporation rate	No data available.
i) Flammability (solid, gas)	No data available.
j) Upper/lower flammability or explosive limits	No data available.
k) Vapor pressure	No data available.
l) Vapor density	No data available.
m) Relative density	No data available.
n) Water solubility	Soluble.
o) Partition coefficient: n-octanol/water	No data available.
p) Auto-ignition temp	No data available.
q) Decomposition temp	No data available.
r) Viscosity	No data available.

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

Stable under ordinary conditions of use and storage.

10.4 Conditions to avoid

Exposure to moisture. Contact with incompatible chemicals and exposure to extremely high temperatures.

10.5 Incompatible materials

Strong oxidizers, strong acids, strong reducing agents, Bromine trifluoride

10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Lithium oxides, Potassium oxides, Sodium oxides

In the event of fire: see section 5

11. Toxicological Information

11.1 Information on toxicological effects

For lithium chloride:

LD50 Oral - Rat - 526 mg/kg

For potassium chloride:

LD50 Oral - Rat - 2,600 mg/kg

For sodium chloride:

LD50 Oral - Rat – 3,550 mg/kg

No other data available.

Skin corrosion/irritation

Skin – rabbit. Result: skin irritation, (OECD Test Guideline 404).

Serious eye damage/eye irritation

Eyes – rabbit. Result: eye irritation, (OECD Test Guideline 405).

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.

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.

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.

Additional information

RTECS: TS8050000 (potassium chloride), OJ5950000 (lithium chloride), VZ4725000 (sodium chloride)

Hyperkalemia, Nausea, Vomiting, Abdominal pain, Diarrhea, Constipation. Paresthesia. Thirst, Dizziness, Rash, pruritus, Weakness, muscle cramps, minor psychiatric changes, minor visual changes.

Vomiting, Diarrhea, Dehydration and congestion may occur in internal organs. Hypertonic salt solutions can produce inflammatory reactions in the gastrointestinal tract. Nausea.

Material may be destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Stomach - Irregularities - Based on Human Evidence. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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.

Lithium Chloride:

Toxicity to fish- LC50 – Oncorhynchus mykiss (rainbow trout) – 158 mg/L, 96h.

Toxicity to invertebrates- EC50 – Daphnia magna (water flea) – 249 mg/L

Potassium Chloride:

Toxicity to fish- LC50 – Pimephales promelas (fathead minnow) - 880 mg/L - 96 h

Toxicity to invertebrates- EC50 – Daphnia magna (water flea) – 440 mg/L - 48 h

Toxicity to algae- EC50 - Desmodesmus subspicatus (green algae) -100 mg/L - 72 h

Toxicity to bacteria- EC50 - activated sludge - 1,000 mg/L- 3 h

Sodium Chloride:

Toxicity to fish- LC50 – Lepomis macrochirus (Bluegill) - 5,840 mg/L - 96 h

Toxicity to invertebrates- LC50 - Daphnia magna (Water flea) - 1,661 mg/L - 48 h

12.2 Persistence and degradability

No data available or not applicable.

12.3 Bioaccumulation potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Other adverse effects

None.

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.

14. Transport Information

DOT

Not dangerous goods.

IMDG

Not dangerous goods.

IATA

Not dangerous goods.

15. Regulatory Information

SARA Reporting Requirements

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 313.

SARA 311/312 Hazards: Acute health hazard, chronic health hazard.

Massachusetts Right To Know Components:

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components:

Potassium chloride CAS-No. 7447-40-7

Lithium chloride CAS-No. 7447-41-8

Sodium chloride CAS-No. 7647-14-5

New Jersey Right To Know Components:

Potassium chloride CAS-No. 7447-40-7

Sodium chloride CAS-No. 7647-14-5

EINECS:

None of the components of this product are on the European Inventory of Existing Commercial Chemical Substances.

Canada DSL:

The following components of this product are on the Canadian Domestic Substance List: Lithium Chloride CAS-No. 7447-41-8, Potassium chloride CAS-No. 7447-40-7, Sodium chloride CAS-No. 7647-14-5

TSCA:

The following components are on the Toxic Substance Control Act Inventory: Lithium Chloride CAS-No. 7447-41-8, Potassium chloride CAS-No. 7447-40-7, Sodium chloride CAS-No. 7647-14-5

California Prop. 65 Components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other Information

Revision Date

2 March 2022

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 his use of the material.