

# SAFETY DATA SHEET

## TMC-7200

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

**Product identifier:**

**Trade name:** TMC-7200  
**Product no.:** 7200-12, 7200-44, 7200-550

**Relevant identified uses of the substance or mixture and uses advised against:**

**Relevant identified uses of the substance or mixture:** Industrial purposes, Heat Transfer, Cleaning Agent  
Restricted to professional users.  
**Uses advised against :** Not Intended for Use as Medical Device or Drug.

**Details of the supplier of the safety data sheet:**

**Company and address:** TMC Industries, Inc.  
1423 Mill Lane  
Waconia, Minnesota 55387  
United States  
TF: +1 (800) 772-8179  
www.tmcindustries.com

**Contact person:** Nick Hansen  
**E-mail:** sales@tmcindustries.com  
**SDS date:** 10/5/2024  
**SDS Version:** 2.0  
**Date of previous version:** 10/5/2024 (2.0)

**Emergency telephone number:**

In an emergency call 995  
In less severe situations call the Drugs & Poison Hotline: 6423 9119  
See section 4 "First aid measures".

### SECTION 2: HAZARDS IDENTIFICATION

**Classification of the substance or mixture:**

Not classified according to SS 586-2:2022.

**Label elements:**

**Hazard pictogram(s):** Not applicable.  
**Signal word:** Not applicable.  
**Hazard statement(s):** Not applicable.  
**Precautionary statement(s):**

- General:** -
- Prevention:** Avoid release to the environment. (P273)
- Response:** -
- Storage:** -

Conforms to Singapore Standard SS 586-3:2022

- Disposal:** Dispose of contents/container in accordance with local regulation (P501)  
Refer to the manufacturer/supplier for information on disposal/ recovery/ recycling. (P503)
- Hazardous substances:** Ethyl nonafluoroisobutyl ether  
Ethyl nonafluorobutyl ether
- Additional labelling:** Not applicable.
- Other hazards:**
- Additional warnings:** This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Substances:**

Not applicable. This product is a mixture.

**Mixtures:**

| Product/substance              | Identifiers                               | % w/w  | Classification | Note |
|--------------------------------|---|--------|----------------|------|
| Ethyl nonafluoroisobutyl ether | CAS No.: 163702-06-5<br>EC No.: 639-027-3 | 55-90% |                |      |
| Ethyl nonafluorobutyl ether    | CAS No.: 163702-05-4<br>EC No.: 639-028-9 | 10-45% |                |      |

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

**Other information:**

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### SECTION 4: FIRST AID MEASURES

**Description of first aid measures:**

- General information:** In the case of accident: Contact a doctor or casualty department – bring the label or this safety data sheet.  
Contact a doctor if in doubt about the injured person’s condition or if the symptoms persist. Never give an unconscious person water or other drink.
- Inhalation:** In case of discomfort: bring the person into fresh air.
- Skin contact:** Upon irritation: rinse with water. In the event of continued irritation, seek medical assistance.
- Eye contact:** Rinse gently with lukewarm water. Remove any contact lenses if this is easy to do. Continue rinsing. In case of persistent eye irritation or discomfort: Seek medical help.
- Ingestion:** Rinse and flush mouth thoroughly and consume large quantities of water. In case of continued discomfort: seek medical assistance and bring this safety data sheet.
- Burns:** Not applicable.

**Most important symptoms and effects, both acute and delayed:**

None known.

**Indication of any immediate medical attention and special treatment needed:**

Treat symptomatically.

**Information to medics:**

Bring this safety data sheet or the label from this product.

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**SECTION 5: FIREFIGHTING MEASURES**

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**Extinguishing media:**

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.  
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

**Special hazards arising from the substance or mixture:**

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds  
Carbon oxides (CO / CO<sub>2</sub>)

**Advice for firefighters:**

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact Drugs & Poison Hotline (tel: 6423 9119) in order to obtain further advice.

Fire fighters should wear appropriate personal protective equipment.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures:**

Contaminated areas may be slippery.

**Environmental precautions:**

Avoid discharge to lakes, streams, sewers, etc.  
Keep unauthorized persons away from the spill

**Methods and material for containment and cleaning up:**

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

**Reference to other sections:**

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

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**SECTION 7: HANDLING AND STORAGE**

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**Precautions for safe handling:**

Smoking, drinking and consumption of food is not allowed in the work area.  
See section 8 "Exposure controls/personal protection" for information on personal protection.

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

**Recommended storage material:** Keep only in original packaging.

**Storage temperature:** Keep container tightly closed

**Incompatible materials:** Strong acids  
Strong oxidizing agents  
Bases

**Specific end use(s):**

This product should only be used for applications quoted in section 1.2.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters:**

No substances are listed in the Workplace Safety and Health Act with a permissible exposure limit.

**Exposure controls:**

Apply general control to prevent unnecessary exposure

**General recommendations:**

Smoking, drinking and consumption of food is not allowed in the work area.

**Exposure scenarios:**

There are no exposure scenarios implemented for this product.

**Exposure limits:**

Occupational exposure limits have not been defined for the substances in this product.

**Appropriate technical measures:**

Apply standard precautions during use of the product. Avoid inhalation of vapours.

**Hygiene measures:**

Wash hands after use.

**Measures to avoid environmental exposure:**


No specific requirements.

**Individual protection measures, such as personal protective equipment:**

**Generally:**

Use only protective equipment with a recognized certification mark, e.g. the S-Mark.

**Respiratory Equipment:**

| Work situation   | Type                                       | Class | Colour | Standards |   |
|--|--|-------|--------|-----------|---|
| When the product is subjected to extreme heat, HF may be formed. | Positive pressure supplied air respirator. |       |        |           |  |

**Skin protection:**

| Work situation             | Recommended                    | Type/Category                  | Standards |  |
|----------------------------|--------------------------------|--------------------------------|-----------|--|
| if the situation requires. | Use proper protective clothing | Use proper protective clothing |           |  |

**Hand protection:**

| Work situation   | Material | Glove thickness (mm) | Breakthrough time (min.) | Standards |   |
|--|----------|----------------------|--------------------------|-----------|---|
| When the product is subjected to extreme heat, HF may be formed. | Neoprene |                      |                          |           |  |

**Eye protection:**

| Type                     | Standards |  |
|--------------------------|-----------|--|
| No specific requirements | -         |  |

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties:**

- Form:** Liquid
- Colour:** Colourless
- Odour:** Faint
- Odour threshold (ppm):** No data available
- pH:** Not applicable
- Density (g/cm<sup>3</sup>):** 1.43 (25 °C)

|   |                        |
|---|------------------------|
| <b>Kinematic viscosity:</b>                     | 0.6 cPs                |
| <b>Phase changes:</b>                           |                        |
| <b>Melting point (°C):</b>                      | -138                   |
| <b>Boiling point (°C):</b>                      | 76                     |
| <b>Vapour pressure:</b>                         | 16 kPa (25 °C)         |
| <b>Relative vapour density:</b>                 | 9.1 Reference: Air = 1 |
| <b>Decomposition temperature (°C):</b>          | No data available      |
| <b>Evaporation rate (n-butylacetate = 100):</b> | No data available      |

#### Data on fire and explosion hazards:

|  |                   |
|--|-------------------|
| <b>Flash point (°C):</b>               | No flash point    |
| <b>Flammability (°C):</b>              | Not applicable    |
| <b>Auto-ignition temperature (°C):</b> | 375               |
| <b>Explosion limits (% v/v):</b>       | No data available |
| <b>Explosive properties:</b>           | No data available |
| <b>Oxidizing properties:</b>           | No data available |

#### Solubility:

|  |                   |
|--|-------------------|
| <b>Solubility in water:</b>                  | Nil               |
| <b>n-octanol/water coefficient (LogKow):</b> | No data available |
| <b>Solubility in fat (g/L):</b>              | No data available |

#### Other information:

|  |                    |
|--|--------------------|
| <b>Critical temperature (pure gas) (°C):</b>                                   | 210                |
| <b>Decomposition temperature (Self-reactive substances and mixtures) (°C):</b> | No Data Available  |
| <b>Evaporation rate (n-butylacetate = 100):</b>                                | No data available  |
| <b>Other physical and chemical parameters:</b>                                 | No data available. |
| <b>Surface tension (mN/m):</b>   | 13.6               |
| <b>Molecular Weight (g/mol):</b>   | 264                |
| <b>Oxidizing properties:</b>   | No data available  |

## SECTION 10: STABILITY AND REACTIVITY

#### Reactivity:

No data available.

#### Chemical stability:

The product is stable under the conditions, noted in section 7 "Handling and storage".

#### Possibility of hazardous reactions:

None known.

**Conditions to avoid:**

None known.

**Incompatible materials:**

Strong acids, strong bases, and strong oxidizing agents.

**Hazardous decomposition products:**

The product is not degraded when used as specified in section 1.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Information on toxicological effects:**

**Acute toxicity:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Route of exposure: Dermal  
 Test: LD50  
 Result: 2000-5000 mg/kg

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Test: LC50  
 Result: >989 mg/L

Product/substance Ethyl nonafluorobutyl ether  
 Route of exposure: Dermal  
 Test: LD50  
 Result: 2000-5000 mg/kg

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Test: LC50  
 Result: >989 mg/L

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rat  
 Route of exposure: Oral  
 Test: LD50  
 Result: >2000 mg/kg

**Skin corrosion/irritation:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rabbit  
 Result: No adverse effect observed (Not irritating)

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rabbit  
 Result: No adverse effect observed (Not irritating)

**Serious eye damage/irritation:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rabbit  
 Result: No adverse effect observed (Not irritating)

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rabbit  
 Result: No adverse effect observed (Not irritating)

**Respiratory sensitisation:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Result: For the components(s), either no data are available or the data are not sufficient for the classification.

Product/substance Ethyl nonafluorobutyl ether  
 Result: For the components(s), either no data are available or the data are not sufficient for the classification.

**Skin sensitisation:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Guinea pig  
 Result: For the components(s), either no data are available or the data are not sufficient for the classification.

Product/substance Ethyl nonafluorobutyl ether  
 Species: Guinea pig  
 Result: For the components(s), either no data are available or the data are not sufficient for the classification.

**Germ cell mutagenicity:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Conclusion: No adverse effect observed

Product/substance Ethyl nonafluorobutyl ether  
 Conclusion: No adverse effect observed

**Carcinogenicity:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Conclusion: Not Classified

Product/substance Ethyl nonafluorobutyl ether  
 Conclusion: Not Classified

**Reproductive toxicity:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rat  
 Duration: During gestation  
 Test: NOAEL  
 Result: 260 mg/L  
 Conclusion: Not Classified

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rat  
 Duration: During gestation  
 Test: NOAEL  
 Result: 260 mg/L  
 Conclusion: Not Classified

**STOT-single exposure:**

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Dog  
 Route of exposure: Inhalation  
 Target organ: Cardiac sensitization  
 Duration: 17 minutes  
 Test: NOAEL  
 Result: 204 mg/L  
 Conclusion: Not Classified

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Target organ: Respiratory irritation  
 Duration: 4 hours

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Test: NOAEL  
 Result: 989 mg/L

Product/substance Ethyl nonafluorobutyl ether  
 Species: Dog  
 Route of exposure: Inhalation  
 Target organ: Respiratory irritation  
 Duration: 17 minutes  
 Test: NOAEL  
 Result: 204 mg/L  
 Conclusion: Not Classified

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Target organ: Respiratory irritation  
 Duration: 4 hours  
 Test: NOAEL  
 Result: 989 mg/L  
 Conclusion: Not Classified

### STOT-repeated exposure:

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Target organ: Endocrine system, liver, heart, hematopoietic system, immune system, nervous system, kidney/bladder  
 Duration: 4 weeks  
 Test: NOAEL  
 Result: 263.4 mg/L  
 Conclusion: Not Classified

Product/substance Ethyl nonafluoroisobutyl ether  
 Species: Rat  
 Route of exposure: Oral  
 Target organ: Endocrine system, bone, teeth, nails/hair, hematopoietic system, heart, immune system, nervous system  
 Duration: 28 days  
 Test: NOAEL  
 Result: 1000 mg/kg bw/day  
 Conclusion: Not Classified

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Target organ: Endocrine system, liver, heart, hematopoietic system, immune system, nervous system, kidney/bladder  
 Duration: 4 weeks  
 Test: NOAEL  
 Result: 263.4 mg/L  
 Conclusion: Not Classified

Product/substance Ethyl nonafluorobutyl ether  
 Species: Rat  
 Route of exposure: Inhalation  
 Target organ: Endocrine system, bone, teeth, nails/hair, hematopoietic system, heart, immune system, nervous system  
 Duration: 28 days  
 Test: NOAEL  
 Result: 1000 mg/kg bw/day  
 Conclusion: Not Classified

### Aspiration hazard:

Product/substance Ethyl nonafluoroisobutyl ether  
 Conclusion: No data available or the data is not sufficient for classification.

Product/substance Ethyl nonafluorobutyl ether  
 Conclusion: No data available or the data is not sufficient for classification.

### Long term effects:



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None known.

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity:

No data available.

### Persistence and degradability:

Based on available data, the classification criteria are not met.

### Bioaccumulative potential:

Based on available data, the classification criteria are not met.

### Mobility in soil:

No data available.

### Results of PBT and vPvB assessment:

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

### Other adverse effects:

None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods:

Environmental Protection and Management Act 1999 (2020 Rev. Ed.)

### Contaminated packing:

Packaging containing residues of the product must be disposed of similarly to the product.

## SECTION 14: TRANSPORT INFORMATION

|      | 14.1<br>UN / ID | 14.2<br>UN proper shipping name | 14.3<br>Hazard class(es) | 14.4<br>PG* | 14.5<br>Env** | Other<br>information: |
|------|-----------------|---------------------------------|--------------------------|-------------|---------------|-----------------------|
| ADR  | -               | -                               | -                        | -           | -             | -                     |
| IMDG | -               | -                               | -                        | -           | -             | -                     |
| IATA | -               | -                               | -                        | -           | -             | -                     |

\* Packing group

\*\* Environmental hazards

### Additional information:

Not dangerous goods according to ADR, IATA and IMDG.

### Special precautions for user:

Not applicable.

### Transport in bulk according to Annex II of Marpol and the IBC Code:

No data available.

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture:

|  |  |
|--|--|
| <b>Restrictions for application:</b>   | Restricted to professional users.  |
| <b>Demands for specific education:</b> | No specific requirements.  |
| <b>Major hazard installation:</b>      | Not applicable.  |
| <b>Additional information:</b>         | Not applicable.  |
| <b>Sources:</b>                        | Employment Act 1968 (2020 Rev. Ed.)<br>Environmental Protection and Management Act 1999 (2020 Rev. Ed.)<br>Environmental Protection and Management Act (Chapter 94a, Section 77),<br>Environmental Protection and Management (Hazardous Substances) Regulations (No. S 159/1999)<br>Globally Harmonized System of Classification and Labelling of Chemicals (GHS Rev. 8, 2019) as specified by SS 586-2 and SS 586-3:2022. |

**Chemical safety assessment:**

No

**SECTION 16: OTHER INFORMATION****The full text of identified uses as mentioned in section 1:**

None known.

**Abbreviations and acronyms:**

ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS = Chemical Abstracts Service  
EINECS = European Inventory of Existing Commercial chemical Substances  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer  
IATA = International Air Transport Association  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PEL = Permissible Exposure Level  
RCM = Regulatory Mark of Conformity  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
SCL = A specific concentration limit  
SS = Singapore Standard  
STEL = Short-term exposure limits  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
TWA = Time weighted average  
UN = United Nations  
UVBC = Unknown or variable composition, complex reaction products or of biological materials  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative

**Additional information:**

A safety data sheet is not required for this product. This safety data sheet has been created on a voluntary basis to distribute relevant information.

**▼ The safety data sheet is validated by:**

TMC Industries, Inc. - QC Department

**Other:**

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle. The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: SG-en