

# SAFETY DATA SHEET

Version: v1

Revision Date: 2025-09-12

Print Date: 2025-09-13

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : 1,1,2,2-Tetrafluoroethyl 2,2,3,3-Tetrafluoropropyl Ether(HFE-458)  
Product Number : T162709  
Brand : aladdin  
CAS-No. : 16627-68-2

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances.

### 1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION  
Address : 14078 Meridian Parkway,  
Riverside, CA. 92518  
Telephone : +1 (833) 552-7181  
Fax : no data available

### 1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300  
CHEMTREC®, Outside the USA :

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)  
Flammable liquids Category 3

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly Flammable liquid and vapor  
H226 Flammable liquid and vapor  
H302 Harmful if swallowed  
H315 Causes skin irritation

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|                                   |                                                                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| H319                              | Causes serious eye irritation                                                                                                    |
| H330                              | Fatal if inhaled                                                                                                                 |
| H335                              | May cause respiratory irritation                                                                                                 |
| H373                              | Causes damage to organs through prolonged or repeated exposure                                                                   |
| H400                              | Very toxic to aquatic life                                                                                                       |
| <b>Precautionary statement(s)</b> |                                                                                                                                  |
| P210                              | Keep away from heat, hot surface, sparks, open flames and other ignition sources. - No smoking.                                  |
| P233                              | Keep container tightly closed.                                                                                                   |
| P240                              | Ground/bond container and receiving equipment.                                                                                   |
| P241                              | Use explosion-proof [electrical/ventilating/lighting/.../] equipment.                                                            |
| P242                              | Use only non-sparking tools.                                                                                                     |
| P243                              | Take precautionary measures against static discharge.                                                                            |
| P260                              | Do not breathe dust/fume/gas/mist/vapors/spray.                                                                                  |
| P261                              | Avoid breathing dust/fume/gas/mist/vapors/spray.                                                                                 |
| P264                              | Wash hands [and ...] thoroughly after handling.                                                                                  |
| P270                              | Do not eat, drink or smoke when using this product.                                                                              |
| P271                              | Use only outdoors or in a well-ventilated area.                                                                                  |
| P273                              | Avoid release to the environment.                                                                                                |
| P280                              | Wear protective gloves/protective clothing/eye protection/face protection.                                                       |
| P284                              | [In case of inadequate ventilation] Wear respiratory protection.                                                                 |
| P320                              | Specific treatment is urgent (see ... on this label).                                                                            |
| P321                              | Specific treatment (see ... on this label).                                                                                      |
| P330                              | Rinse mouth.                                                                                                                     |
| P391                              | Collect spillage.                                                                                                                |
| P302+P352                         | IF ON SKIN: wash with plenty of water.                                                                                           |
| P303+P361+P353                    | IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].                         |
| P304+P340                         | IF INHALED: Remove person to fresh air and keep comfortable for breathing.                                                       |
| P305+P351+P338                    | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. |
| P362+P364                         | Take off contaminated clothing and wash it before reuse.                                                                         |
| P370+P378                         | In case of fire: Use ... to extinguish.                                                                                          |
| P405                              | Store locked up.                                                                                                                 |
| P403+P233                         | Store in a well-ventilated place. Keep container tightly closed.                                                                 |
| P403+P235                         | Store in a well-ventilated place. Keep cool.                                                                                     |
| P501                              | Dispose of contents/container to an approved waste disposal plant.                                                               |
| P264+P265                         | Wash hands [and ...] thoroughly after handling. Do not touch eyes.                                                               |
| P301+P317                         | IF SWALLOWED: Get medical help.                                                                                                  |
| P337+P317                         | If eye irritation persists: Get medical help.                                                                                    |
| P332+P317                         | If skin irritation occurs: Get medical help.                                                                                     |
| P316                              | Get emergency medical help immediately.                                                                                          |

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P319

Get medical help if you feel unwell.

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

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

|                  |                                                  |
|------------------|--------------------------------------------------|
| Synonyms         | : no data available                              |
| Formula          | : C <sub>5</sub> H <sub>4</sub> F <sub>8</sub> O |
| Molecular weight | : 232.07                                         |
| CAS No.          | : 16627-68-2                                     |
| EC-NO.           | : no data available                              |

| Component                                                                        | Classification    | Concentration |
|----------------------------------------------------------------------------------|-------------------|---------------|
| <b>1,1,2,2-Tetrafluoroethyl<br/>2,2,3,3-Tetrafluoropropyl<br/>Ether(HFE-458)</b> | no data available | ≥98%          |

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

**General advice**

no data available

**If inhaled**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

**In case of skin contact**

Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.

**In case of eye contact**

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 swallowed**

Get medical advice/attention if you feel unwell. Rinse mouth.

#### 4.2 Most important symptoms and effects, both acute and delayed

no data available

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

no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**

Dry chemical, foam, water spray, carbon dioxide.

**Unsuitable extinguishing media**

Solid streams of water

### 5.2 Special hazards arising from the substance or mixture

no data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use extra personal protective equipment (self-contained breathing apparatus). Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

### 6.2 Environmental precautions

Prevent product from entering drains.

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

Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated. Avoid contact with skin, eyes and clothing.

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

Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store away from incompatible materials such as oxidizing agents. Hygroscopic , Store at room temperature.

**7.3 Specific end use(s)**

no data available

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**8.2 Exposure controls**

**Appropriate engineering controls**

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

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(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. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

**Body Protection**

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

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

**Control of environmental exposure**

no data available

**SECTION 9: Physical and chemical properties**

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

|                    |                               |
|--------------------|-------------------------------|
| a) Appearance      | form: Liquid color: Colorless |
| b) Odour           | no data available             |
| c) Odour Threshold | no data available             |

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|                                                 |                   |
|-------------------------------------------------|-------------------|
| d) pH                                           | no data available |
| e) Melting point/freezing point                 | no data available |
| f) Initial boiling point and boiling range      | 92°C(lit.)        |
| g) Flash point                                  | 27°C              |
| h) Evaporation rate                             | no data available |
| i) Flammability (solid, gas)                    | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure                              | no data available |
| l) Vapour density                               | no data available |
| m) Relative density                             | 1.542             |
| n) Water solubility                             | no data available |
| o) Partition coefficient: n-octanol/water       | no data available |
| p) Auto-ignition temperature                    | no data available |
| q) Decomposition temperature                    | no data available |
| r) Viscosity                                    | no data available |
| s) Explosive properties N                       | no data available |
| t) Oxidizing properties N                       | no data available |

## 9.2 Other safety information

no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Spark, Open flame, Static discharge

### 10.5 Incompatible materials

Oxidizing agents

### 10.6 Hazardous decomposition products

Carbon dioxide, Carbon monoxide, Hydrogen fluoride

## SECTION 11: Toxicological information

Phone: +1 (833) 552-7181 Email: QualityAssurance@aladdinsci.com Website: <https://www.aladdinsci.com/>

## 11.1 Information on toxicological effects

### Acute toxicity

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitisation

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

no data available

#### Reproductive toxicity

no data available

#### Specific target organ toxicity - single exposure

no data available

#### Specific target organ toxicity - repeated exposure

no data available

#### Aspiration hazard

no data available

#### Additional Information

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## SECTION 12: Ecological information

### 12.1 Toxicity

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

no data available

### 12.6 Other adverse effects

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no data available

SECTION 13:

13.1 Disposal considerations

Product

Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

|                                      |                                            |                                             |
|--------------------------------------|--------------------------------------------|---------------------------------------------|
| UN number: 3271                      | Packing group: III                         | Class: 3                                    |
| Proper shipping name: Ethers, n.o.s. | Reportable Quantity(RQ): no data available | Poison Inhalation Hazard: no data available |
| Environmental Hazards: No            |                                            |                                             |

IMDG

|                                      |                    |                           |
|--------------------------------------|--------------------|---------------------------|
| UN number: 3271                      | Packing group: III | EMS-No: no data available |
| Proper shipping name: Ethers, n.o.s. |                    |                           |

IATA

|                                      |                    |          |
|--------------------------------------|--------------------|----------|
| UN number: 3271                      | Packing group: III | Class: 3 |
| Proper shipping name: Ethers, n.o.s. |                    |          |

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

SECTION 16: Other information

Prepared By

Regulatory Affairs  
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Creation Date

26-Nov-2021

Revision Date

12-Sep-2025

Print Date

13-Sep-2025

Revision Summary

SDS sections updated v1



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