

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878 - Switzerland

SAFETY DATA SHEET

FRE Freezer Spray

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

1.1 Product identifier

Product name : FRE Freezer Spray
Product code : 30005043

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

Identified uses

Stripping
Industrial applications, Professional applications.

1.3 Details of the supplier of the safety data sheet

e-mail address of person responsible for this SDS : Europeanregulatory@macdermid.com

Supplier : Alpha Assembly Solutions Germany GmbH
Elisabeth-Selbert-Straße
40764
Langenfeld
Germany

Information contact : Tel. No.: +49 2173 8490 300
salesEU@AlphaAssembly.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Tox Info Suisse, Tel. 145

Supplier

Telephone number : Carechem24: +44 1235 239670 (across Europe)
Hours of operation : 24/7

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Aerosol 3, H229

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

SECTION 2: Hazards identification

2.2 Label elements

- Signal word** : Warning
- Hazard statements** : H229 - Pressurised container: may burst if heated.
- Precautionary statements**
- Prevention** : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251 - Do not pierce or burn, even after use.
- Response** :
- Storage** : P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
- Disposal** :
- Supplemental label elements** : Not applicable.
- Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.
- Special packaging requirements**

2.3 Other hazards

- Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
- Other hazards which do not result in classification** : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
HFO-1234ZE	EC: 471-480-0 CAS: 29118-24-9	≥90	Press. Gas (Liq.), H280 See Section 16 for the full text of the H statements declared above.	-	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. 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.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
Hydrogen fluoride (HF). /Fluorides.

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

SECTION 5: Firefighting measures

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : Not tested

SECTION 6: Accidental release measures

6.1 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. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurised contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilt 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).

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

SECTION 7: Handling and storage

Advice on general occupational hygiene : Eating, drinking and 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 also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Do not store near heat sources or expose to high temperatures.

7.3 Specific end use(s)

Recommendations : No specific measures identified.

Industrial sector specific solutions : No specific measures identified.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
HFO-1234ZE	SUVA (Switzerland, 1/2023). TWA: 1000 ppm 8 hours. TWA: 4700 mg/m ³ 8 hours. STEL: 9400 mg/m ³ 15 minutes. STEL: 2000 ppm 15 minutes.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

SECTION 8: Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Chemical splash goggles. Use eye protection according to EN 166.
- Skin protection**
- Hand protection** : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Wear suitable gloves tested to EN374.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : 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.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
In case of inadequate ventilation wear respiratory protection: multi-gas/vapour filter (organic vapour filter (Type A)) Use respiratory protection according to EN 529.
- 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.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Gas. [Aerosol]
- Colour** : Colourless.
- Odour** : Characteristic.
- Odour threshold** : There are no data available on the mixture itself.
- Melting point/freezing point** : -156°C
- Initial boiling point and boiling range** : -26.5°C (-15.7°F)
- Flammability** : Not tested
- Lower and upper explosion limit** : There are no data available on the mixture itself.
- Flash point** : Not applicable.
- Auto-ignition temperature** : Not available.

SECTION 9: Physical and chemical properties

- Decomposition temperature** : There are no data available on the mixture itself.
pH : Not applicable.
Viscosity : Not applicable.
Solubility(ies) :

Media	Result
cold water	Not soluble

- Solubility in water** : 0.37 g/l
Miscible with water : No.
Partition coefficient: n-octanol/ water : Not applicable.
Vapour pressure : 0.43 kPa (3.2 mm Hg)
Evaporation rate : There are no data available on the mixture itself.
Relative density : Not applicable.
Density : 1.17 g/cm³ [20°C (68°F)]
Vapour density : There are no data available on the mixture itself.
Explosive properties : Not tested
Oxidising properties : Not applicable No oxidising ingredients present.
Particle characteristics
Median particle size : Not applicable.

9.2 Other information

- VOC content** : 0 % (w/w)
Aerosol product
Type of aerosol : Spray

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : Reactive or incompatible with the following materials: metals.
10.2 Chemical stability : The product is stable.
10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame).
Keep away from heat and direct sunlight.
10.5 Incompatible materials : No specific data.
10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

- Conclusion/Summary** : Not tested

Acute toxicity estimates

N/A

Irritation/Corrosion

SECTION 11: Toxicological information

Conclusion/Summary

Skin : Not tested

Eyes : Not tested

Respiratory : Not tested

Sensitisation

Conclusion/Summary

Skin : Not tested

Respiratory : Not tested

Mutagenicity

Conclusion/Summary : Not tested

Carcinogenicity

Conclusion/Summary : Not tested

Reproductive toxicity

Conclusion/Summary : Not tested

Teratogenicity

Conclusion/Summary : Not tested

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not tested

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
irritation
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

SECTION 11: Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary : Ecological testing has not been conducted on this product.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Non-dispersive /insoluble in water.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).




13.1 Waste treatment methods

Product

SECTION 13: Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised 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.
- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.
- Packaging**
- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number or ID number	UN1950	UN1950	UN1950
14.2 UN proper shipping name	AEROSOLS	AEROSOLS	Aerosols, non-flammable
14.3 Transport hazard class(es)	2 	2.2 	2.2 
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.

Additional information

- ADR/RID** : **Tunnel code** (E)
- IMDG** : **Emergency schedules** F-D, S-U
IMDG Code Segregation group None identified.

- 14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- 14.7 Maritime transport in bulk according to IMO instruments** : Not applicable - not transported in bulk

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

SECTION 15: Regulatory information

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Aerosol dispensers :

3

National regulations

OVOC content : Exempt.

15.2 Chemical safety assessment : Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- SGG = Segregation Group
- vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aerosol 3, H229	On basis of test data

Full text of abbreviated H statements

H229 Pressurised container: may burst if heated.
H280 Contains gas under pressure; may explode if heated.

Full text of classifications [CLP/GHS]

Aerosol 3 AEROSOLS - Category 3
Press. Gas (Liq.) GASES UNDER PRESSURE - Liquefied gas

SECTION 16: Other information

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Version : 1

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MacDermid Alpha SDS CLP Europe