Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name: Carbon Dioxide, Dry Ice
Product Code(s): PF00096
Synonyms: Dry ice (nuggets, pellets, or blocks)
Trade Name: Not established
Chemical Family: Not determined

carbon dioxide (compressed)
CAS No: 124-38-9

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

Recommended Use: Refrigerant Packaging

1.3. Details of the supplier of the safety data sheet

Pfizer Inc
235 East 42nd Street
New York, New York 10017
1-800-879-3477

Pfizer Ltd
Ramsgate Road
Sandwich, Kent
CT13 9NJ
United Kingdom
+00 44 (0)1304 616161

1.4. Emergency telephone number

Emergency Telephone: Chemtrec 1-800-424-9300 International Chemtrec (24 hours):+1-703-527-3887
E-mail address: pfizer-MSDS@pfizer.com

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS - Classification: Not classified as hazardous

OSHA Classification
Health Hazard: Simple Asphyxiant

2.2. Label elements

Signal word: Warning

Hazard statements: May displace oxygen and cause rapid suffocation

Precautionary Statements:
P282 - Wear cold insulating gloves/face shield/eye protection
P336 + P315 - Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention
P403 - Store in a well-ventilated place
Supplemental Hazard

Contact with dry ice may cause cold burns or frostbite.

2.3. Other hazards

Other hazards

An Occupational Exposure Value has been established for this substance (see Section 8).

Note:

This document has been prepared in accordance with standards for workplace safety, which require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Hazardous</th>
<th>Chemical name</th>
<th>EC No</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Classification</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>carbon dioxide (compressed)</td>
<td>204-696-9</td>
<td>124-38-9</td>
<td>100</td>
<td>Not Listed</td>
<td></td>
</tr>
</tbody>
</table>

Full text of H- and EUH-phrases: see section 16

Additional information

Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation

Remove to fresh air. Seek immediate medical attention/advice.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Ingestion

Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.

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

Most important symptoms and effects

For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

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

Note to physicians

None.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media
SAFETY DATA SHEET

Product Name  Carbon Dioxide, Dry Ice
Revision date  20-Nov-2020
Version  2.03

Suitable Extinguishing Media
Dry chemical, CO2, alcohol-resistant foam or water spray.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical
Dry ice sublimes to carbon dioxide vapor. Vapor may displace oxygen and cause rapid suffocation.

Hazardous combustion products
Formation of toxic gases is possible during heating or fire. Toxic gases including carbon monoxide can be expected in fires of this material. May include oxides of carbon.

5.3. Advice for firefighters

Special protective equipment for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions
Refer to protective measures listed in Sections 7 and 8.

6.3. Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Contain the source of the spill or leak. Collect spilled material by a method that controls dust generation. Avoid use of a filtered vacuum to clean spills of dry solids. Clean spill area thoroughly.

Prevention of secondary hazards
Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections
See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Restrict access to work area. Avoid open handling. Minimize generating airborne mists and vapors. Use process containment, local exhaust ventilation or perform work under fume hood/fume cupboard. Avoid inhalation and contact with skin, eye, and clothing. When handling, use appropriate personal protective equipment (see Section 8). Wash hands and any exposed skin after removal of PPE. Releases to the environment should be avoided. NEVER HANDLE SOLID CARBON DIOXIDE WITH YOUR BARE HANDS. USE GLOVES OR DRY ICE TONGS OR A DRY SHOVEL OR SCOOP.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions
Store and use with adequate ventilation. Do not store in tight containers or confined spaces. Storage areas should be clean and dry. Store at -78.5 °C in properly labeled containers.

7.3. Specific end use(s)

Specific use(s)
Refrigerant Packaging.
Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits
Refer to available public information for specific member state Occupational Exposure Limits.

carbon dioxide (compressed)

ACGIH TLV  STEL: 30000 ppm
5000 ppm

Austria
5000 ppm
9000 mg/m³
STEL 10000 ppm
STEL 18000 mg/m³

Bulgaria
5000 ppm
9000 mg/m³

Czech Republic
9000 mg/m³
Ceiling: 45000 mg/m³

Denmark
5000 ppm
9000 mg/m³

Estonia
5000 ppm
9000 mg/m³

Finland
5000 ppm
9100 mg/m³

France
9000 mg/m³

Germany
5000 ppm
9100 mg/m³

Hungary
9000 mg/m³

Ireland
5000 ppm
9000 mg/m³

STEL: 15000 ppm
STEL: 27000 mg/m³

Italy
5000 ppm
9000 mg/m³

Latvia
5000 ppm
9000 mg/m³

Netherlands
9000 mg/m³

Poland
STEL: 27000 mg/m³
9000 mg/m³

Romania
5000 ppm
9000 mg/m³

Russia
TWA: 9000 mg/m³
STEL: 27000 mg/m³

Slovakia
5000 ppm
9000 mg/m³

Spain
5000 ppm
9150 mg/m³

Switzerland
5000 ppm
9000 mg/m³

OSHA PEL
5000 ppm
9000 mg/m³
(vacated) TWA: 10000 ppm
(vacated) TWA: 18000 mg/m³
(vacated) STEL: 30000 ppm
(vacated) STEL: 54000 mg/m³
United Kingdom

TWA: 5000 ppm
TWA: 9150 mg/m³
STEL: 15000 ppm
STEL: 27400 mg/m³

8.2. Exposure controls

Engineer controls

Engineering controls should be used as the primary means to control exposures.

Environmental exposure controls

No information available.

Personal protective equipment

Contact your safety and health professional or safety equipment supplier for assistance in selecting the correct protective clothing/equipment based on an assessment of the workplace conditions, other chemicals used or present in the workplace and specific operational processes. Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

Eye/face protection

Wear safety glasses as minimum protection. (Safety glasses must meet the standards in accordance with EN166, ANSI Z87.1 or international equivalent.).

Hand protection

Wear insulated gloves to prevent skin contact. (Protective gloves must meet the standards in accordance with EN511 or international equivalent.).

Skin and body protection

Use protective clothing (uniforms, lab coats, disposable coveralls, etc.) in both production and laboratory areas. (Protective clothing must meet the standards in accordance with EN13982, ANSI 103 or international equivalent.).

Respiratory protection

Whenever excessive air contamination (dust, mist, vapor) is generated, respiratory protection, with appropriate protection factors, should be used to minimize exposure. (e.g. particulate respirator with a half mask, P3 filter). (Respirators must meet the standards in accordance with EN140, EN143, ASTM F2704-10 or international equivalent.).

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>CO₂</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>44</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>-56.6</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>-78.46</td>
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<tr>
<td>Flash point</td>
<td>No data available</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Flammability (solid, gas)</td>
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<tr>
<td>Flammability Limit in Air</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
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<tr>
<td>Lower flammability limit:</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>5.73</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
</tbody>
</table>

PF00096
Section 10: STABILITY AND REACTIVITY

10.1. Reactivity
Reactivity
No data available.

10.2. Chemical stability
Stability
Stable under normal conditions.

Explosion data
- Sensitivity to Mechanical Impact: No data available.
- Sensitivity to Static Discharge: No data available.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
No information available.

10.4. Conditions to avoid
Dry ice sublimes to carbon dioxide vapor. Vapor may displace oxygen and cause rapid suffocation.

10.5. Incompatible materials
Incompatible materials
As a precautionary measure, keep away from strong oxidizers.

10.6. Hazardous decomposition products
Hazardous decomposition products
No data available.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
General Information:
Toxicological properties have not been thoroughly investigated.

Short term
Dry ice sublimes to carbon dioxide vapor. Vapor may displace oxygen and cause rapid suffocation. Contact with dry ice may cause cold burns or frostbite.

Carcinogenicity
Not listed as a carcinogen by IARC, NTP or US OSHA.

Section 12: ECOLOGICAL INFORMATION

Relative density
No data available.
Water solubility
No data available.
Solubility(ies)
No data available.
Autoignition temperature
No data available.
Decomposition temperature
No data available.
Kinematic viscosity
No data available.
Dynamic viscosity
No data available.
 Explosive properties
No data available.
Oxidizing properties
No data available.

Section 10: STABILITY AND REACTIVITY

9.2. Other information
- Liquid Density: No data available.
- Bulk density: No data available.
Environmental Overview: Releases to the environment should be avoided. Environmental properties have not been investigated.

12.1. Toxicity
No information available

12.2. Persistence and degradability
Persistence and degradability No information available.

12.3. Bioaccumulative potential
Bioaccumulation No information available.

12.4. Mobility in soil
Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment
PBT and vPvB assessment No information available.

12.6. Other adverse effects
Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

Section 14: TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

UN proper shipping name: Not regulated

IMDG
UN-No UN1845
UN proper shipping name Carbon Dioxide, Solid
Hazard Class 9

IATA
UN-No UN1845
Section 15: REGULATORY INFORMATION

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

carbon dioxide (compressed)

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERCLA/SARA Section 313 de minimus %</td>
<td>Not Listed</td>
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<tr>
<td>California Proposition 65</td>
<td>Not Listed</td>
</tr>
<tr>
<td>TSCA</td>
<td>Present</td>
</tr>
<tr>
<td>EINECS</td>
<td>204-696-9</td>
</tr>
<tr>
<td>AICS</td>
<td>Present</td>
</tr>
</tbody>
</table>

15.2. Chemical safety assessment

Chemical Safety Report
No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Data Sources: Publicly available toxicity information. Commercial vendor SDS.

Reason for revision
Updated Section 8 - Exposure Controls / Personal Protection.

Revision date 20-Nov-2020

Prepared By
Product Stewardship Hazard Communication
Pfizer Global Environment, Health, and Safety Operations

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