SAFETY DATA SHEET
Preconditioner Unit_temperature -80C

Section 1. Identification

This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

1.1 Product identifier

Product name : Preconditioner Unit_temperature -80C
Part No. (Chemical Kit) : 192268100, 192264200, 190193504, 190193505, 190193507, X192268100, X192264200, X190193504, X190193505, X190193506, X190193507, X192268100-DEF, X192264200-DEF, X190193504-DEF, X190193505-DEF, X190193506-DEF, X190193507-DEF
Part No. : R1150 ETHYLENE Not available. Refrigerant R1270 - PROPYLENE Not available. R290 PROPANE Not available.
Validation date : 9/1/2017

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

Material uses : Analytical chemistry.
R1150 ETHYLENE 0.98 oz (in hermetic refrigeration system)
Refrigerant R1270 - PROPYLENE 0.83 oz (in hermetic refrigeration system)
R290 PROPANE 0.98 oz (in hermetic refrigeration system)

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

2.1 Classification of the substance or mixture

OSHA/HCS status : R1150 ETHYLENE This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Refrigerant R1270 - PROPYLENE This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
R290 PROPANE This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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Section 2. Hazards identification

**R1150 ETHYLENE**
- **H220**: FLAMMABLE GASES - Category 1
- **H280**: GASES UNDER PRESSURE - Compressed gas
- Simple Asphyx.
- **H336**: SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

**Refrigerant R1270 - PROPYLENE**
- **H220**: FLAMMABLE GASES - Category 1
- **H280**: GASES UNDER PRESSURE - Compressed gas
- Simple Asphyx.

**R290 PROPANE**
- **H220**: FLAMMABLE GASES - Category 1
- **H280**: GASES UNDER PRESSURE - Compressed gas
- Simple Asphyx.

### 2.2 GHS label elements

**Hazard pictograms**:
- **R1150 ETHYLENE**
- **Refrigerant R1270 - PROPYLENE**
- **R290 PROPANE**

**Signal word**: 
- **R1150 ETHYLENE**: Danger
- **Refrigerant R1270 - PROPYLENE**: Danger
- **R290 PROPANE**: Danger

**Hazard statements**:
- **R1150 ETHYLENE**:
  - H220 - Extremely flammable gas.
  - H280 - Contains gas under pressure; may explode if heated.
  - No Code(s) - May displace oxygen and cause rapid suffocation.
  - H336 - May cause drowsiness or dizziness.

- **Refrigerant R1270 - PROPYLENE**:
  - H220 - Extremely flammable gas.
  - H280 - Contains gas under pressure; may explode if heated.
  - No Code(s) - May displace oxygen and cause rapid suffocation.

- **R290 PROPANE**:
  - H220 - Extremely flammable gas.
  - H280 - Contains gas under pressure; may explode if heated.
  - No Code(s) - May displace oxygen and cause rapid suffocation.

### Precautionary statements

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## Section 2. Hazards identification

| Prevention | R1150 ETHYLENE | P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P271 - Use only outdoors or in a well-ventilated area.  
P261 - Avoid breathing gas.  
Refrigerant R1270 - PROPYLENE | P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
R290 PROPANE | P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
|---|---|---|---|
| Response | R1150 ETHYLENE | P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
Refrigerant R1270 - PROPYLENE | P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
R290 PROPANE | P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so. |
| Storage | R1150 ETHYLENE | P405 - Store locked up.  
P410 - Protect from sunlight.  
P403 - Store in a well-ventilated place.  
Refrigerant R1270 - PROPYLENE | P410 - Protect from sunlight.  
P403 - Store in a well-ventilated place.  
R290 PROPANE | P410 - Protect from sunlight.  
P403 - Store in a well-ventilated place. |
| Disposal | R1150 ETHYLENE | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.  
Refrigerant R1270 - PROPYLENE | Not applicable.  
R290 PROPANE | Not applicable. |
| Supplemental label elements | R1150 ETHYLENE | Keep container tightly closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated.  
Refrigerant R1270 - PROPYLENE | Keep container tightly closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated.  
R290 PROPANE | Keep container tightly closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated. |

### 2.3 Other hazards

| Hazards not otherwise classified | R1150 ETHYLENE | None known.  
Refrigerant R1270 - PROPYLENE | None known.  
R290 PROPANE | None known. |
Section 3. Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Ethylene</td>
<td>100</td>
<td>74-85-1</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Propylene</td>
<td>100</td>
<td>115-07-1</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Propane</td>
<td>100</td>
<td>74-98-6</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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 and hence require reporting in this section.

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

**Eye contact**

- **R1150 ETHYLENE**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

- **Refrigerant R1270 - PROPYLENE**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

- **R290 PROPANE**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Inhalation**

- **R1150 ETHYLENE**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Section 4. First aid measures

Refrigerant R1270 - PROPYLENE
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

R290 PROPANE
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact
Refrigerant R1270 - PROPYLENE
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

R290 PROPANE
Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion
Refrigerant R1270 - PROPYLENE
As this product is a gas, refer to the inhalation section.

R290 PROPANE
As this product is a gas, refer to the inhalation section.

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Section 4. First aid measures

4.2 Most important symptoms/effects, acute and delayed

**Potential acute health effects**

**Eye contact**

- **R1150 ETHYLENE**
  - Contact with rapidly expanding gas may cause burns or frostbite.

- Refrigerant R1270 - PROPYLENE
  - Contact with rapidly expanding gas may cause burns or frostbite.

- R290 PROPANE
  - Contact with rapidly expanding gas may cause burns or frostbite.

**Inhalation**

- **R1150 ETHYLENE**
  - Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

- Refrigerant R1270 - PROPYLENE
  - At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

- R290 PROPANE
  - At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

**Skin contact**

- **R1150 ETHYLENE**
  - Contact with rapidly expanding gas may cause burns or frostbite.

- Refrigerant R1270 - PROPYLENE
  - Contact with rapidly expanding gas may cause burns or frostbite.

- R290 PROPANE
  - Contact with rapidly expanding gas may cause burns or frostbite.

**Ingestion**

- **R1150 ETHYLENE**
  - Can cause central nervous system (CNS) depression. As this product is a gas, refer to the inhalation section.

- Refrigerant R1270 - PROPYLENE
  - As this product is a gas, refer to the inhalation section.

- R290 PROPANE
  - As this product is a gas, refer to the inhalation section.

**Over-exposure signs/symptoms**

**Eye contact**

- **R1150 ETHYLENE**
  - No specific data.

- Refrigerant R1270 - PROPYLENE
  - No specific data.

- R290 PROPANE
  - No specific data.

**Inhalation**

- **R1150 ETHYLENE**
  - Adverse symptoms may include the following: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

- Refrigerant R1270 - PROPYLENE
  - No specific data.

- R290 PROPANE
  - No specific data.

**Skin contact**

- **R1150 ETHYLENE**
  - No specific data.

- Refrigerant R1270 - PROPYLENE
  - No specific data.

- R290 PROPANE
  - No specific data.

**Ingestion**

- **R1150 ETHYLENE**
  - No specific data.

- Refrigerant R1270 - PROPYLENE
  - No specific data.

- R290 PROPANE
  - No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary
Section 4. First aid measures

**Notes to physician**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

**Specific treatments**:
- **R1150 ETHYLENE**: No specific treatment.
- **Refrigerant R1270 - PROPYLENE**: No specific treatment.
- **R290 PROPANE**: No specific treatment.

**See toxicological information (Section 11)**

Section 5. Fire-fighting measures

5.1 **Extinguishing media**

**Suitable extinguishing media**:
- **R1150 ETHYLENE**: Use an extinguishing agent suitable for the surrounding fire.
- **Refrigerant R1270 - PROPYLENE**: Use an extinguishing agent suitable for the surrounding fire.
- **R290 PROPANE**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**:
- **R1150 ETHYLENE**: None known.
- **Refrigerant R1270 - PROPYLENE**: None known.
- **R290 PROPANE**: None known.

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

**Specific hazards arising from the chemical**:
- **R1150 ETHYLENE**: Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- **Refrigerant R1270 - PROPYLENE**: Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- **R290 PROPANE**: Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure
Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Hazardous thermal decomposition products</th>
<th>R1150 ETHYLENE</th>
<th>Decomposition products may include the following materials: carbon dioxide, carbon monoxide.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td></td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td></td>
<td>Decomposition products may include the following materials: carbon dioxide, carbon monoxide.</td>
</tr>
</tbody>
</table>

5.3 Advice for firefighters

Special protective actions for fire-fighters: R1150 ETHYLENE

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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Refrigerant R1270 - PROPYLENE

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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

R290 PROPANE

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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.
## Section 5. Fire-fighting measures

**Special protective equipment for fire-fighters**

- **R1150 ETHYLENE**
  - Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

- **Refrigerant R1270 - PROPYLENE**
  - Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

- **R290 PROPANE**
  - Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

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

**For non-emergency personnel**

- **R1150 ETHYLENE**
  - Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- **Refrigerant R1270 - PROPYLENE**
  - Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- **R290 PROPANE**
  - Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**

- **R1150 ETHYLENE**
  - If specialized 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".

- **Refrigerant R1270 - PROPYLENE**
  - If specialized 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".

- **R290 PROPANE**
  - If specialized 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".

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Section 6. Accidental release measures

6.2 Environmental precautions

<table>
<thead>
<tr>
<th>Substance</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
</tbody>
</table>

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up

<table>
<thead>
<tr>
<th>Substance</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.</td>
</tr>
</tbody>
</table>

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures

<table>
<thead>
<tr>
<th>Substance</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. 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. Do not puncture or incinerate container.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. 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. Do not puncture or incinerate container.</td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

R290 PROPANE

Advice on general occupational hygiene

Electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. 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. Do not puncture or incinerate container.

Refrigerant R1270 - PROPYLENE

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.

R290 PROPANE

Do not store above the following temperature: 52°C (125.6°F). Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Refrigerant R1270 - PROPYLENE

Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

R290 PROPANE

Store in accordance with local regulations. Store in
Section 7. Handling and storage

a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

Industrial sector specific solutions

R1150 ETHYLENE
Refrigerant R1270 - PROPYLENE
R290 PROPANE
Industrial applications, Professional applications.
Industrial applications, Professional applications.
Not applicable.

Refrigerant R1270 - PROPYLENE
Industrial applications, Professional applications.

R290 PROPANE
Industrial applications, Professional applications.

Section 8. Exposure controls/personal protection

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE Ethylene</td>
<td>ACGIH TLV (United States, 3/2016). TWA: 200 ppm 8 hours.</td>
</tr>
<tr>
<td>R290 PROPANE Propane</td>
<td>NIOSH REL (United States, 10/2013). TWA: 1800 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. OSHA PEL (United States, 6/2016). TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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.

Individual protection measures

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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 contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

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.

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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state: R1150 ETHYLENE Gas.
Refrigerant R1270 - PROPYLENE Gas.
R290 PROPANE Gas.

Color: R1150 ETHYLENE Colorless.
Refrigerant R1270 - PROPYLENE Colorless.
R290 PROPANE Colorless.

Odor: R1150 ETHYLENE Faint
Refrigerant R1270 - PROPYLENE Faint
R290 PROPANE Faint

Odor threshold: R1150 ETHYLENE Not available.
Refrigerant R1270 - PROPYLENE Not available.
R290 PROPANE Not available.

pH: R1150 ETHYLENE Not available.
Refrigerant R1270 - PROPYLENE Not available.
R290 PROPANE Not available.

Melting point: R1150 ETHYLENE -169.4°C (-272.9°F)
Refrigerant R1270 - PROPYLENE -185.25°C (-301.4°F)
R290 PROPANE -185.89°C (-302.6°F)
# Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>R1150 ETHYLENE</th>
<th>R1270 - PROPYLENE</th>
<th>R290 PROPANE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boiling point</strong></td>
<td></td>
<td>-103.68°C (-154.6°F)</td>
<td>-47°C (-52.6°F)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-41.79°C (-43.2°F)</td>
<td></td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>R1150 ETHYLENE</td>
<td>Closed cup: -136°C (-212.8°F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Closed cup: -108°C (-162.4°F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Closed cup: -104°C (-155.2°F)</td>
<td></td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>R1150 ETHYLENE</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>R1150 ETHYLENE</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.</td>
<td></td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>R1150 ETHYLENE</td>
<td>Lower: 2.7%</td>
<td>Upper: 36%</td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Lower: 2.4%</td>
<td>Upper: 11%</td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Lower: 2.1%</td>
<td>Upper: 9.5%</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>R1150 ETHYLENE</td>
<td>&gt;101.3 kPa (&gt;760 mm Hg) [room temperature]</td>
<td>1043.6 kPa (7828 mm Hg) [room temperature]</td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>840 kPa (6300.51 mm Hg) [room temperature]</td>
<td></td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>R1150 ETHYLENE</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>1.5 [Air = 1]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>1.6 [Air = 1]</td>
<td></td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>R1150 ETHYLENE</td>
<td>0.978 [Air = 1]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>R1150 ETHYLENE</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>R1150 ETHYLENE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>R1150 ETHYLENE</td>
<td>490°C (914°F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>455°C (851°F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>449.85°C (841.7°F)</td>
<td></td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>R1150 ETHYLENE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>&gt;650°C (&gt;1202°F)</td>
<td></td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>R1150 ETHYLENE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>R1270 - PROPYLENE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>R290 PROPANE</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>10.1 Reactivity</th>
<th>R1150 ETHYLENE</th>
<th>No specific test data related to reactivity available for this product or its ingredients.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td></td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.2 Chemical stability</th>
<th>R1150 ETHYLENE</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>The product is stable.</td>
<td></td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>The product is stable.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.3 Possibility of hazardous reactions</th>
<th>R1150 ETHYLENE</th>
<th>Under normal conditions of storage and use, hazardous reactions will not occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td></td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.4 Conditions to avoid</th>
<th>R1150 ETHYLENE</th>
<th>Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.</td>
<td></td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.5 Incompatible materials</th>
<th>R1150 ETHYLENE</th>
<th>May react or be incompatible with oxidizing materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>May react or be incompatible with oxidizing materials.</td>
<td></td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>May react or be incompatible with oxidizing materials.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.6 Hazardous decomposition products</th>
<th>R1150 ETHYLENE</th>
<th>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not available.

Irritation/Corrosion
Not available.

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>Ethylene</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure

<table>
<thead>
<tr>
<th>Routes of entry anticipated: Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
</tr>
<tr>
<td>R290 PROPANE</td>
</tr>
</tbody>
</table>

Potential acute health effects

Eye contact

<table>
<thead>
<tr>
<th>Contact with rapidly expanding gas may cause burns or frostbite.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
</tr>
<tr>
<td>R290 PROPANE</td>
</tr>
<tr>
<td>R1150 ETHYLENE</td>
</tr>
</tbody>
</table>
### Section 11. Toxicological information

#### Inhalation

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.</td>
</tr>
</tbody>
</table>

#### Skin contact

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Contact with rapidly expanding gas may cause burns or frostbite.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>Contact with rapidly expanding gas may cause burns or frostbite.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>Contact with rapidly expanding gas may cause burns or frostbite.</td>
</tr>
</tbody>
</table>

#### Ingestion

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Can cause central nervous system (CNS) depression. As this product is a gas, refer to the inhalation section.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>As this product is a gas, refer to the inhalation section.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>As this product is a gas, refer to the inhalation section.</td>
</tr>
</tbody>
</table>

### Symptoms related to the physical, chemical and toxicological characteristics

#### Eye contact

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

#### Inhalation

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

#### Skin contact

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

#### Ingestion

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1150 ETHYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
<td>No specific data.</td>
</tr>
<tr>
<td>R290 PROPANE</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

#### Long term exposure

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.
- **Potential chronic health effects**: Not available.

**Date of issue**: 09/01/2017
Section 11. Toxicological information

**General**
- **R1150 ETHYLENE**
  - No known significant effects or critical hazards.
- **Refrigerant R1270 - PROPYLENE R290 PROPANE**
  - No known significant effects or critical hazards.

**Carcinogenicity**
- **R1150 ETHYLENE**
  - No known significant effects or critical hazards.
- **Refrigerant R1270 - PROPYLENE R290 PROPANE**
  - No known significant effects or critical hazards.

**Mutagenicity**
- **R1150 ETHYLENE**
  - No known significant effects or critical hazards.
- **Refrigerant R1270 - PROPYLENE R290 PROPANE**
  - No known significant effects or critical hazards.

**Teratogenicity**
- **R1150 ETHYLENE**
  - No known significant effects or critical hazards.
- **Refrigerant R1270 - PROPYLENE R290 PROPANE**
  - No known significant effects or critical hazards.

**Developmental effects**
- **R1150 ETHYLENE**
  - No known significant effects or critical hazards.
- **Refrigerant R1270 - PROPYLENE R290 PROPANE**
  - No known significant effects or critical hazards.

**Fertility effects**
- **R1150 ETHYLENE**
  - No known significant effects or critical hazards.
- **Refrigerant R1270 - PROPYLENE R290 PROPANE**
  - No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
- Not available.

Section 12. Ecological information

**12.1 Toxicity**
- Not available.

**12.2 Persistence and degradability**
- Not available.

**12.3 Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Log$<em>{P</em>{ow}}$</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R1150 ETHYLENE</strong></td>
<td>1.13</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Ethylene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Refrigerant R1270 - PROPYLENE</strong></td>
<td>1.77</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Propylene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>R290 PROPANE</strong></td>
<td>1.09</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Propane</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**12.4 Mobility in soil**
- **Soil/water partition coefficient ($K_{OC}$)**: Not available.

**12.5 Other adverse effects**: No known significant effects or critical hazards.

**Date of issue**: 09/01/2017
Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods

The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

This Safety Data Sheet is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN3363</td>
<td>UN3363</td>
<td>UN3363</td>
<td>UN3363</td>
<td>UN3363</td>
<td>UN3363</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Dangerous Goods in Apparatus</td>
<td>DANGEROUS GOODS IN APPARATUS</td>
<td>MERCANCIAS PELIGROSAS EN APARATOS</td>
<td>DANGEROUS GOODS IN APPARATUS</td>
<td>Dangerous goods in apparatus</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Additional information

DOT Classification: **Limited quantity** No.


Special provisions: 136, A105

TDG Classification: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).

Explosive Limit and Limited Quantity Index: 0

Mexico Classification: Special provisions: 301

Date of issue: 09/01/2017
Section 14. Transport information

**IMDG**
- Emergency schedules: F-A, _S-P_
- Special provisions: 301

**IATA**
- Special provisions: A48, A107

**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.

**Transport in bulk according to Annex II of MARPOL and the IBC Code**
- Not available.

Section 15. Regulatory information

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

**U.S. Federal regulations**
- TSCA 8(a) CDR Exempt/Partial exemption: Not determined
- Clean Air Act (CAA) 112 regulated flammable substances: Ethylene; Propylene; Propane
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed
- Clean Air Act Section 602 Class I Substances: Not listed
- Clean Air Act Section 602 Class II Substances: Not listed
- DEA List I Chemicals (Precursor Chemicals): Not listed
- DEA List II Chemicals (Essential Chemicals): Not listed
- SARA 302/304
  - Composition/information on ingredients: No products were found.
  - SARA 304 RQ: Not applicable.
  - SARA 311/312
    - Classification: **R1150 ETHYLENE**
      - Fire hazard
      - Sudden release of pressure
      - Immediate (acute) health hazard
    - Refrigerant R1270 - PROPYLENE
      - Fire hazard
      - Sudden release of pressure
      - Immediate (acute) health hazard
    - R290 PROPANE
      - Fire hazard
      - Sudden release of pressure
      - Immediate (acute) health hazard

**Composition/information on ingredients**
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
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<tr>
<td>R1150 ETHYLENE</td>
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<td>Ethylene</td>
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<tr>
<td>Refrigerant R1270 - PROPYLENE</td>
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<tr>
<td>Propylene</td>
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<td>R290 PROPANE</td>
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<td>No.</td>
<td>Yes.</td>
<td>No.</td>
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</table>

SARA 313

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<td>Propylene</td>
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</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: ETHYLENE; ETHENE; PROPYLENE; PROPENE; PROPANE

New York: None of the components are listed.

New Jersey: The following components are listed: ETHYLENE; ETHENE; PROPYLENE; 1-PROPENE; PROPANE

Pennsylvania: The following components are listed: ETHENE; 1-PROPENE; PROPANE

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia: All components are listed or exempted.

Canada: All components are listed or exempted.

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China: All components are listed or exempted.
Europe: All components are listed or exempted.
Japan: Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.
Malaysia: All components are listed or exempted.
New Zealand: All components are listed or exempted.
Philippines: All components are listed or exempted.
Republic of Korea: All components are listed or exempted.
Taiwan: All components are listed or exempted.
Thailand: Not determined.
Turkey: All components are listed or exempted.
United States: All components are listed or exempted.
Viet Nam: Not determined.

Section 16. Other information

History
Date of issue: 09/01/2017
Date of previous issue: 01/31/2017.
Version: 2.1

Notice to reader
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