1. Identification of the substance / preparation and company / undertaking

Product name
Propane, R290

Chemical formula
C3H8

REACH registration number
01-2119486944-21

Company
Harp International Ltd
Gellihirion Industrial Estate
Pontypridd
Rhondda Cynon Taff
CF37 5SX
Tel: +44 (0) 1443 842255
Fax: +44 (0) 1443 841805
Email: harp@harpintl.com

Emergency phone number
+44 (0) 1270 502891 (24 hour)

Use
Refrigerant

2. Hazards identification

EC Classification of the substance or mixture

Hazard Class & category code:

- Physical hazards
  Flammable gases - Category 1 - Danger (H220)
  Gases under pressure - Liquefied gas -Warning (H280)

Label Elements

Labelling Regulation EC 1272/2008 (CLP)
- Hazard pictogram(s)
  GHS02
  GHS04
- Hazard pictograms code
  GHS02 - GHS04.
- Signal word
  Danger
- Hazard statements
  H220 : Extremely flammable gas
  H280 : Contains gas under pressure; may explode if heated.
- Precautionary statements
  -Prevention
    P210 : Keep away from heat/sparks/open flames/hot surfaces - No smoking.
  -Response
    P377 : Leaking gas fire : Do not extinguish unless leak can be stopped safely.
    P381 : Eliminate all ignition sources if safe to do so.
  -Storage
    P403 : Store in a well ventilated place.
3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Substance / Preparation</th>
<th>Substance name</th>
<th>Contents</th>
<th>CAS no.</th>
<th>EC No</th>
<th>Index no.</th>
<th>Registration no.</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Propane</td>
<td>100%</td>
<td>74-98-6</td>
<td>200-827-2</td>
<td>601-004-00-0</td>
<td>01-2119486944-21</td>
<td>Flam. Gas 1 (H220)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Liq. Gas (H280)</td>
</tr>
</tbody>
</table>

Contains no other components or impurities which will influence the classification of the product

4. First aid measures

Inhalation
Remove patient from exposure, keep warm and at rest. Administer oxygen if necessary. Apply artificial respiration if breathing has ceased or shows signs of failing. In the event of cardiac arrest apply external cardiac massage. Obtain immediate medical attention.

Skin contact
Thaw affected areas with water. Remove contaminated clothing. Caution: clothing may adhere to the skin in the case of freeze burns. After contact with skin, wash immediately with plenty of warm water. If irritation or blistering occur, obtain medical attention.

Eye contact
Immediately irrigate with eyewash solution or clean water, holding the eyelids apart for at least 15 minutes. Obtain immediate medical attention.

Ingestion
Unlikely route of exposure. Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300ml (half a pint) of water to drink. Obtain immediate medical attention.

5. Fire-fighting measures

Specific hazards
Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products
Incomplete combustion may form carbon monoxide.

Extinguishing media
All known extinguishants can be used.

-Suitable extinguishing media
If possible, stop flow of product. Move away from the container and cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

Specific methods
In confined space use self-contained breathing apparatus.
6. Accidental release measures

Personal precautions
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Evacuate area.
Ensure adequate air ventilation.
Eliminate ignition sources.

Environmental precautions
Try to stop release.
Prevent from entering sewers, basements and work-pits or any place where its accumulation can be dangerous.

Clean up measures
Ventilate area.

7. Handling and storage

Handling
Take precautionary measures against static discharge.
Suck back of water into the container must be prevented.
Purge air from systems before introducing gas.
Do not allow back-feed into the container.
Use properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Keep away from ignition sources (including static discharges).
Refer to suppliers container handling instructions.

Storage
Segregate from oxidant gases and other oxidants in store.
Keep container below 50°C in a well ventilated place.

8. Exposure controls / personal protection

Personal protection
Wear suitable protective clothing, gloves and eye/face protection.
Wear thermal insulating gloves when handling liquefied gases. In cases of insufficient ventilation, where exposure to high concentrations of vapour is possible, suitable respiratory protective equipment with positive air supply should be used.
Do not smoke while handling product.

Eye Protection

Gloves

Occupational exposure limits
Propane : TLV – TWA [ppm] : 2500
9. Physical and chemical properties

Form: Liquefied gas
Physical state at 20°C: Gas
Colour: Colourless
Odour: Sweetish. Poor warning properties at low concentrations.
Molecular weight: 44
Solubility in water [mg/l]: 75
Boiling point (°C): -42.1
Melting point (°C): -188.0
Relative density, gas (air=1): 1.5
Relative density, liquid (water =1): 0.58
Vapour pressure (20°C): 8.3 bar
Flammability range [vol% in air]: 1.7 to 9.5
Auto ignition temperature [°C]: 470
Other data: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10. Stability and reactivity

Hazardous decomposition products: None.
Incompatible materials: Can form explosive mixture with air.
May react violently with oxidants.
Air, oxidiser.
Conditions to avoid: Keep away from heat, sparks, open flames, hot surfaces. No smoking.

11. Toxicological information

Toxicity information: No known toxicological effects from this product.

12. Ecological information

Ecological effects information: No known ecological damage caused by this product.

13. Disposal information

General: Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flashback arrestor.
Do not discharge into a place where its accumulation could be dangerous. Contact supplier if guidance is needed.
14. Transport information

UN No. 1978
Labelling ADR, IMDG, IATA

Land transport
ADR/RID
H.Lnr 23
UN Proper shipping name Propane
Transport hazard class(es) 2
-ADR/RID Classification code 2 F
-Packing instruction(s) - General P200
-Tunnel instructions B/D Tank carriage: Passage forbidden through tunnels of category B, C, D and E;
Other carriage: Passage forbidden through tunnels of category D and E.

Sea transport
-IMO-IMDG code
Proper shipping name Propane
Class 2.1
-IMO Packing group P200
-Emergency schedule (EmS) - Fire F-D
-Emergency schedule (EmS) - Spillage S-U
-Instructions – Packing P200

Air transport
-ICAO/IATA
-Proper shipping name Propane
Class 2.1
Passenger and cargo aircraft -
Cargo aircraft only -
-Packing instruction 200

Avoid transport on vehicles where the load space is not separated from the drivers compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or emergency.

Before transporting containers:
-Ensure containers are firmly secured.
-Ensure cylinder valve is closed and not leaking
-Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
-Ensure valve protection device (where provided) is correctly fitted.
-Ensure there is adequate ventilation.
-Compliance with applicable regulations.

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Ensure all national/local regulations are observed.

SEVESO Regulation 96/82/EC Listed.
16. Other information

Ensure operators understand the flammability hazard.
Contact with liquid may cause burns/frostbite.
The hazard of asphyxiation is often overlooked and must be stressed during operator training.

This data sheet contains changes from the previous version, CLP02 dated January 2018. Section 2 & 3 has been updated.

This datasheet was prepared in accordance with Regulation (EC) No. 1907/2006.

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