Created: 3 September 2025

SAFETY DATA SHEET

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

1.1 Product identifier

Product Name:	Propane
Product Description:	Popane gas, liquefied (odorised)
Synonyms:	Petroleum gas; LPG; [A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C3 through C7 and boiling in the range of approximately – 40 °C to 80 °C (– 40 °F to 176 °F).]

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

Use of the substance/mixture:	Fuel gas/Industrial use
Use advised against:	No information available

1.3 Details of the supplier of the safety data sheet

Manufactured by:	SGS Gases Ltd
Address of Supplier:	Poplar Farm Eastertown Weston-super-Mare Somerset BS24 0HY UK
Telephone:	01934 751265
Email:	enquiries@sgsgases.co.uk

1.4 Emergency telephone number

Emergency Telephone:	01934 751265 Monday – Friday 8:30am – 5pm

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Flam. Gas 1, H220; Press. Gas (Liq.), H280

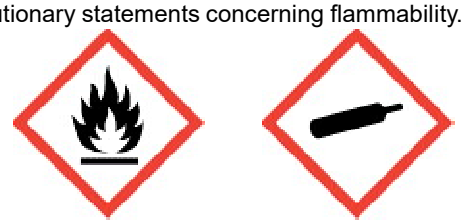
Additional information: For full text of Hazard- and EU Hazard-statements: see section 16

2.2 Label elements

Exemptions from CLP (Annex I, Part 1, 1.3.1 and 1.3.2)
1.3.1. Transportable gas cylinders
For transportable gas cylinders, one of the following shall be permitted to be used for gas cylinders with a water capacity of less than or equal to 150 litres:
(a) A format and dimensions following the prescriptions of the current edition of Standard ISO 7225 relating to 'Gas cylinders — Precautionary labels'. In this case, the label can bear the generic name or industrial or commercial name of the substance or mixture provided that the hazardous substances in a mixture are shown on the body of the gas cylinder in a clear and indelible way.
(b) The information specified in Article 17 provided on a durable information disc or label held captive on the cylinder.
1.3.2. Gas containers intended for propane, butane or liquefied petroleum gas (LPG)
1.3.2.1. If propane, butane and liquefied petroleum gas or a mixture containing these substances classified in accordance with the criteria of this Annex, is placed on the market in closed refillable cylinders or in non-refillable cartridges within the scope of EN 417 as fuel gases which are only released for combustion (current edition of EN 417, relating to 'Non-refillable metallic gas cartridges for liquefied petroleum gases, with or without a valve, for use with portable appliances; construction, inspection, testing and marking'), these cylinders or cartridges need be labelled only with the appropriate pictogram

SECTION 2: Hazards identification (....)

and the hazard and precautionary statements concerning flammability.



Signal Word: Danger

Hazardous ingredients which must be listed on the label: Propane/Petroleum gases, liquefied (contains < 0.1% w/w 1,3-butadiene)

Hazard statements

H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.

Precautionary statements

P102 - Keep out of reach of children.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - In case of leakage, eliminate all ignition sources.
P403 - Store in a well-ventilated place.
P410+P412 - Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.

Supplemental Hazard information (EU)

None

2.3 Other hazards

Asphyxiant in high concentrations

May form explosive vapour/air mixtures

Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback

Contact with liquid may cause cold burns/frostbite

Does not contain any substances considered to be PBT or vPvB at levels of 0.1% or higher

Does not contain any substances with endocrine disrupting properties at levels of 0.1% or higher

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	Conc.	CAS No.	EC No.	Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]	SCL/ M-Factor/ ATE	REACH Registration Number	WEL / OEL
Propane/LPG	> 99%	74-98-6 68476-85-7	200-827-9 270-704-2	Flam. Gas 1, H220 Press. Gas (Liq.), H280 Note U	-	-	Yes
1,3-butadiene; buta-1,3-diene	< 0.1%	106-99-0	203-450-8	Flam. Gas 1, H220 Muta. 1B, H340 Carc. 1A, H350 Note U Note D	-	-	Yes

SECTION 3: Composition/information on ingredients (....)

Methanol (anti-icing agent)	< 0.3%	67-56-1	200-659-6	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370	STOT SE 1, H370: C ≥ 10 % STOT SE 2, H371: 3 % ≤ C < 10 %	-	Yes
Ethyl mercaptan (odorant)	< 0.005%	75-08-01	200-837-3	Flam. Liq. 1, H224 Acute Tox. 4, H302 Acute Tox. 3, H331 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE oral = 680 mg/kg ATE inhalation (vapours) = 7.1 mg/L	-	Yes

SECTION 4: First aid measures

Rescuers should put on approved personal protective equipment (PPE) before administering first aid

No action shall be taken involving any personal risk or without suitable training

4.1 Description of first aid measures

Contact with eyes

If substance has got into eyes, immediately wash out with plenty of water
Irrigate eyes thoroughly whilst lifting eyelids
Remove contact lenses, if present and easy to do. Continue rinsing.
If there are signs of frostbite, pain, swelling, lachrimation or photophobia persists, the patient should be seen in a specialist health care facility

Contact with skin

Wash frost-bitten areas with plenty of water
Do not remove clothing that adheres due to freezing
Immediately flush affected area with plenty of water – continue for at least 15 minutes
Cover wounds with sterile dressing
If there are signs of frostbite, (blanching or redness of skin or burning or tingling sensation), do not rub, massage or compress the affected area. Send the casualty immediately to hospital .

Ingestion

Not considered a likely route of exposure as this product rapidly becomes a gas when released.
Refer to the inhalation section.
Frostbite to the lips and mouth may occur if in contact with the liquid.
If frostbite occurs, get medical attention.

Inhalation

Remove person to fresh air and keep comfortable for breathing.
Keep warm and at rest, in a half upright position. Loosen clothing
If breathing is difficult, oxygen should be given by a trained person
Apply artificial respiration only if patient is not breathing
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation
If heartbeat is absent, give external cardiac compression
Get immediate medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Contact with eyes

Contact with liquid may cause cold burns/frostbite
Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

Contact with skin

Contact with liquid may cause cold burns/frostbite

SECTION 4: First aid measures (....)

Ingestion

Contact with liquid may cause cold burns/frostbite
As this product is a gas, refer to the inhalation section

Inhalation

Exposure to oxygen deficient atmosphere may cause the following symptoms: dizziness, salivation, nausea, vomiting, loss of mobility/consciousness.
In high concentrations may cause asphyxiation.
Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.
In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

Treat cold burns as frostbite.

Anaesthetic effects at high concentrations.

Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	In case of fire use extinguishing media appropriate to surrounding conditions; Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Extremely flammable liquefied gas

In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion

Inform Fire Brigade of potential danger of exploding and rocketing cylinders

Gas is heavier than air and may collect in low areas or travel along from the substance or the ground where there may be an ignition source present

If flames are accidentally extinguished, explosive re-ignition may occur; therefore, appropriate measures should be taken (e.g. total evacuation to protect persons from container fragments and toxic fumes should a rupture occur).

Decomposition products may include carbon oxides

5.3 Advice for firefighters

Shut off all ignition sources

Evacuate the area and keep personnel upwind

Move containers from fire area if this can be done without risk

Use water spray to keep fire-exposed containers cool

If possible, shut-off source of gas and allow the fire to burn itself out

Extinguish fire only if gas flow can be stopped. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur

Extinguish any other fire

Fight fire from protected location or maximum possible distance.

Move away from container and cool with water from a protected position

Keep adjacent cylinders cool by spraying with large amounts of water until fire burns itself out

Collect contaminated fire extinguishing water separately. This MUST not be discharged into drains. Prevent fire extinguishing water from contaminating surface or ground water.

Special protective equipment: Wear self-contained breathing apparatus (SCBA). Wear full protective

SECTION 5: Firefighting measures (....)

clothing including chemical protection suit.

Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training

Only trained and authorised personnel should carry out emergency response

Personal precautions for non-emergency personnel: Evacuate the area and keep personnel upwind; Shut off all ignition sources; Avoid breathing vapours, mist or gas; Do not touch or walk through spilt material; Ventilate area

Personal precautions for emergency responders: Evacuate the area and keep personnel upwind; Ensure adequate ventilation; Avoid breathing vapours, mist or gas; Gas/vapour is heavier than air and may accumulate in confined spaces, particularly at or below ground level; Never enter a confined space or other area where the flammable gas concentration is greater than 10% of its lower flammable limit; Monitor oxygen level; Wear protective clothing as per section 8

6.2 Environmental precautions

Do not release to the environment except for emergency ventilation.

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous

In confined spaces, sewers, etc., the vapours may collect to form explosive mixtures with air

6.3 Methods and material for containment and cleaning up

Ventilate area

Shut off all ignition sources

Use non-sparking tools

Use explosion-proof ventilating and lighting equipment.

The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Where appropriate, use water spray to disperse the gas or vapour and to protect personnel attempting to stop leakage.

A combustible gas detector can be used to check for flammable gas or vapours

Contain spillage – ventilate area and allow to evaporate

Additional advice: If possible, stop flow of product. Increase ventilation to the release area and monitor oxygen level. If leak is from cylinder or cylinder valve, call the SGS Gases telephone number. If the leak is in the user's system, close the cylinder valve and safely vent the pressure, and purge with an inert gas before attempting repairs.

Cylinder should be inspected and tested if leak occurs.

Wash thoroughly after dealing with spillage

6.4 Reference to other sections

See section(s): 7, 8 & 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Do not handle until all safety precautions have been read and understood.

Do not reuse empty containers

Wear protective clothing as per section 8

SECTION 7: Handling and storage (....)

Do not eat, drink or smoke when using this product.

Ensure adequate ventilation

Avoid breathing vapours, mist or gas

In case of inadequate ventilation wear respiratory protection.

Protect cylinders from physical damage; do not drag, roll, slide or drop.

Do not allow storage area temperature to exceed 50°C (122°F).

Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use.

When doubt exists as to the correct handling procedure for a particular gas, contact the supplier.

Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

When moving cylinders, even for short distances, use a cart, trolley, hand truck, etc designed to transport cylinders.

Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.

Use an adjustable strap wrench to remove over-tight or rusted caps

Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials.

Before connecting the container for use, ensure that back feed from the system into the container is prevented.

Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use.

Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container.

Never insert an object (e.g. wrench, screwdriver, pry bar, etc) into valve cap openings. Doing so may damage valve, causing a leak to occur.

Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.

Close container valve after each use and when empty, even if still connected to equipment.

Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier.

Close valve after each use and when empty.

Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment.

Do not subject containers to abnormal mechanical shocks which may cause damage to their valve or safety devices.

Never attempt to lift a cylinder by its valve protection cap or guard.

Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied.

Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.

Do not smoke while handling product or cylinders.

Never re-compress a gas or a gas mixture without first consulting the supplier.

Never attempt to transfer gases from one cylinder/container to another.

Always use backflow protective device in piping.

Purge air from system before introducing gas

When returning cylinder install valve outlet cap or plug leak tight.

Never use direct flame or electrical heating devices to raise the pressure of a container.

Containers should not be subjected to temperatures above 50°C (122°F).

Prolonged periods of cold temperature below -30°C (-20°F) should be avoided.

Never attempt to increase liquid withdrawal rate by pressurizing the container without first checking with the supplier.

Never permit liquefied gas to become trapped in parts of the system as this may result in hydraulic rupture.

Ensure equipment is adequately earthed.

Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.

Take precautionary measures against static discharges

Use non-sparking handtools

Wash thoroughly after use

Ensure eyewash stations and safety showers are nearby

SECTION 7: Handling and storage (....)

7.2 Conditions for safe storage, including any incompatibilities

Keep out of reach of children
Containers should not be stored in conditions likely to encourage corrosion
Store in a cool, dry well-ventilated place. Keep container tightly closed.
Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air.
Do not expose to temperatures exceeding 50°C/ 122°F.
Protect from sunlight.
Full containers should be stored so that oldest stock is used first.
Observe all regulations and local requirements regarding storage of containers.
Stored containers should be periodically checked for general condition and leakage.
Protect containers stored in the open against rusting and extremes of weather.
Containers should be stored in the vertical position and properly secured to prevent toppling.
The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged.
Container valve guards or caps should be in place.
Store containers in location free from fire risk and away from sources of heat and ignition.
Smoking should be prohibited within storage areas or while handling product or containers.
Display "No Smoking or Open Flames" signs in the storage areas.
The amounts of flammable or toxic gases in storage should be kept to a minimum.
All electrical equipment in the storage areas should be compatible with flammable materials stored.
Full and empty cylinders should be segregated. Containers should be segregated in the storage area according to the various categories - (e.g. flammable, toxic,etc.) and in accordance with local regulations.
Containers containing flammable gases should be stored away from other combustible materials Where necessary containers containing oxygen and oxidants should be separated from flammable gases by a fire resistant partition.
Return empty containers in a timely manner.

7.3 Specific end use(s)

Fuel gas/industrial use

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace exposure - Measurement of exposure by inhalation to chemical agents - Strategy for testing compliance with occupational exposure limit values). 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 exposure. 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.

Petroleum gases, liquefied

WEL (long term) 1 000 ppm, 1 750 mg/m³ (UK)
WEL (short term limit value) 1 250 ppm, 2 180 mg/m³ (UK)
DMEL (inhalational) 2.21 mg/m³ Industry, Long Term, Systemic Effects
DNEL (dermal) 23.4 mg/kg bw/day Industry, Long Term, Systemic Effects
DMEL (inhalational) 66.4 µg/m³ Consumer, Long Term, Systemic Effects

Propane

Propane is identified as an asphyxiant and UK EH40 paragraphs 57 & 59 apply

SECTION 8: Exposure controls/personal protection (....)

1,3-butadiene

(EU) IOELV (long term TWA) 1 ppm, 2.2 mg/m³
WEL (long term) 1 ppm, 2.2 mg/m³ (UK)
DMEL (inhalational) 2.21 mg/m³ Industry, Long Term, Systemic Effects
DMEL (inhalational) 265.2 µg/m³ Consumer, Long Term, Systemic Effects

Methanol

(EU) IOELV (long term TWA) 200 ppm, 260 mg/m³
WEL (long term) 200 ppm, 260 mg/m³ (UK, Can be absorbed through the skin)
WEL (short term) 250 ppm, 333 mg/m³ (UK. Can be absorbed through the skin)
DNEL (inhalational) 130 mg/m³ Industry, LongTerm, Systemic Effects
DNEL (inhalational) 130 mg/m³ Industry, Acute/Short Term, Systemic Effects
DNEL (inhalational) 130 mg/m³ Industry, Long Term, Local Effects
DNEL (inhalational) 130 mg/m³ Industry, Acute/Short Term, Local Effects
DNEL (dermal) 20 mg/kg bw/day Industry, Long Term, Systemic Effects
DNEL (dermal) 20 mg/kg bw/day Industry, Acute/Short Term, Systemic Effects
DNEL (inhalational) 26 mg/m³ Consumer, Long Term, Systemic Effects
DNEL (inhalational) 26 mg/m³ Consumer, Acute/Short Term, Systemic Effects
DNEL (inhalational) 26 mg/m³ Consumer, Long Term, Local Effects
DNEL (inhalational) 26 mg/m³ Consumer, Acute/Short Term, Local Effects
DNEL (dermal) 4 mg/kg bw/day Consumer, Long Term, Systemic Effects
DNEL (dermal) 4 mg/kg bw/day Consumer, Acute/Short Term, Systemic Effects
DNEL (oral) 4 mg/kg bw/day Consumer, Long Term, Systemic Effects
DNEL (oral) 4 mg/kg bw/day Consumer, Acute/Short Term, Systemic Effects

Ethyl mercaptan

WEL (long term) 0.5 ppm, 1.3 mg/m³ (UK)
WEL (short term) 2 ppm, 5.2 mg/m³ (UK)
DNEL (inhalational) 11 mg/m³ Industry, LongTerm, Systemic Effects
DNEL (dermal) 1.6 mg/kg bw/day Industry, Long Term, Systemic Effects
DNEL (inhalational) 1.96 mg/m³ Consumer, Long Term, Systemic Effects
DNEL (oral) 800 µg/kg bw/day Consumer, Long Term, Systemic Effects
PNEC aqua (freshwater) 100 ng/L
PNEC aqua (intermittent releases, freshwater) 1 µg/L
PNEC aqua (marine water) 10 ng/L
PNEC (STP) 8.81 mg/L
PNEC sediment (freshwater) 490 ng/kg
PNEC sediment (marine water) 49 ng/kg
PNEC terrestrial (soil) 40.9 ng/kg

8.2 Exposure controls

Selection and use of personal protective equipment should be based on a risk assessment of exposure potential

Engineering controls

Provide natural or explosion-proof ventilation that is adequate to ensure flammable gas does not reach its lower explosive limit
Gas detectors should be used when flammable gases/vapours may be released

Respiratory protection

Use appropriate respiratory protection where atmosphere exceeds recommended limits
If required, the respiratory device must be certified as safe in defined explosive atmospheres (EX Label)
Where a full face mask respirator is required, use EN 136, with gas/vapour filter EN 14387 type AX
Gas filters do not protect against oxygen deficiency
Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

Skin protection

Wear suitable protective clothing
Wear appropriate thermal protective clothing, when necessary

SECTION 8: Exposure controls/personal protection (....)

Sturdy work gloves are recommended for handling cylinders. Standard EN 388 - Protective gloves against mechanical risk.

The breakthrough time of the selected glove(s) must be greater than the intended use period.

Safety shoes are recommended when handling cylinders. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

Wear flame resistant and anti-static safety clothing and shoes.

Standard EN ISO 11612 - Protective clothing: Clothing to protect against heat and flame.

Standard EN ISO 14116 - Limited flame spread materials.

Standard EN ISO 1149-5 - Protective clothing: Electrostatic properties

Eye/face protection

If there is a risk of product getting into eyes, wear safety glasses approved to standard EN 166.

Thermal hazards

Wear thermal insulating gloves when handling liquefied gases.

Hygiene measures

Use good personal hygiene practices
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Contaminated clothing should be laundered before reuse
Ensure eyewash stations and safety showers are nearby

Environmental exposure controls

Do not release to the environment except for emergency ventilation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquefied gas
Colour:	Colourless
Odour:	Odorant added to provide a distinctive smell
Melting point/freezing point:	-187.6 - -138.3 °C @ 101.3 kPa
Boiling point or initial boiling point and boiling range:	-42 °C @ 768 mm Hg
Flammability:	Extremely flammable
Lower and upper explosion limit:	Upper explosive limit: 11% (in air); Lower explosive limit: 2% (in air)
Flash point:	-104 °C @ 101.3 kPa
Auto-ignition temperature:	410 - 585 °C
Decomposition temperature:	No data available
pH:	Not applicable
Kinematic viscosity:	Not applicable
Solubility:	(water) 24.4 - 60.4 mg/L @ 20 - 25 °C
Partition coefficient n-octanol/water (log value):	1.09 - 2.8 @ 20 °C
Vapour pressure:	4.1 bar @ 20 °C
Density and/or relative density:	~ 0.5 @ 15 °C (water = 1)
Relative vapour density:	1.56 (air = 1)
Particle characteristics:	Not applicable

9.2 Other information

Gas/vapour is heavier than air and may accumulate in confined spaces, particularly at or below ground level.

Molecular mass: 44.1 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

Considered stable under normal conditions

10.2 Chemical stability

Stable under recommended storage and handling conditions

10.3 Possibility of hazardous reactions

Reacts violently with oxidizing substances

May form explosive vapour/air mixtures

Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Containers can burst violently or explode when heated, due to excessive pressure build-up

10.5 Incompatible materials

Incompatible with oxidizing substances

10.6 Hazardous decomposition products

Decomposition products may include carbon oxides

SECTION 11: Toxicological information

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

Acute Toxicity

Based on available data, the classification criteria are not met

Substances

Chemical Name	LD_{50} (oral, rat)	LC_{50} (inhalation, rat)	LD_{50} (dermal, rabbit)
Propane/LPG	No data available	(2 h) 520 400 - 539 600 ppm (mouse)	No data available
1,3-butadiene	No data available	No data available	No data available
Methanol	1 187 - 2 769 mg/kg	(4 h) 115.9 - 130.7 mg/L	17 100 mg/kg
Ethyl mercaptan	680 mg/kg	(4 h) 7.1 mg/L (vapours)	2 000 mg/kg (rat)

Skin corrosion/irritation

Based on available data, the classification criteria are not met

Substances

Chemical Name	Irritation/corrosion
Propane/LPG	No adverse effect observed (not irritating)
1,3-butadiene	No study available
Methanol	No adverse effect observed (not irritating)
Ethyl mercaptan	No adverse effect observed (not irritating)

Serious eye damage/irritation

Based on available data, the classification criteria are not met

SECTION 11: Toxicological information (....)

Substances

Chemical Name	Irritation/corrosion
Propane/LPG	No adverse effect observed (not irritating)
1,3-butadiene	No adverse effect observed (not irritating)
Methanol	No adverse effect observed (not irritating)
Ethyl mercaptan	No adverse effect observed (not irritating)

Respiratory or skin sensitisation

Based on the available data, the classification criteria are not met

Substances

Chemical Name	Skin sensitisation	Respiratory sensitisation
Propane/LPG	No adverse effect observed (not sensitising)	No data available
1,3-butadiene	No study available	No study available
Methanol	No adverse effect observed (not sensitising)	No study available
Ethyl mercaptan	No data available	No data available

Germ cell mutagenicity

Contains < 0.1% 1,3-butadiene

Substances

Chemical Name	Toxicity - In Vitro	Toxicity - In Vivo
Propane/LPG	No data available	No data available
1,3-butadiene	No data available	No data available
Methanol	Adverse effect observed (positive)	No adverse effect observed (negative)
Ethyl mercaptan	No adverse effect observed (negative)	No data available

Carcinogenicity

Contains < 0.1% 1,3-butadiene
1,3-butadiene is classified by IARC as Group 1 (carcinogenic to humans)

Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Propane/LPG	No data available	No data available	No data available
1,3-butadiene	No data available	No data available	No data available
Methanol	No data available	1 300 mg/m³ (mouse)	No data available
Ethyl mercaptan	No data available	No data available	No data available

Reproductive toxicity

Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Propane/LPG	No data available	No data available	No data available
1,3-butadiene	No data available	13 276 mg/m³	No data available
Methanol	1 000 mg/kg bw/day (mouse) (Effect on fertility) LOAEL (mouse) 1 700 mg/kg bw/day (Effect on developmental toxicity)	1 300 mg/m³ (Effect on fertility) 1 330 mg/m³ (Effect on developmental toxicity)	No data available
Ethyl mercaptan	200 mg/kg bw/day (Effect on fertility) 50 mg/kg bw/day (Effect on developmental toxicity)	495.5 mg/m³ (Effect on developmental toxicity)	No data available

SECTION 11: Toxicological information (....)

Specific target organ toxicity (STOT) - single exposure

Substances

Chemical Name	Route	Remarks
Propane/LPG	Respiratory	No adverse effect observed (not irritating)
1,3-butadiene	Respiratory	No study available
Methanol	Respiratory	No study available
Ethyl mercaptan	Respiratory	No adverse effect observed (not irritating)

Specific target organ toxicity (STOT) - repeated exposure

Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Propane/LPG	No data available	4 000 - 16 000 ppm	No data available
1,3-butadiene	No data available	2 212 mg/m³	No data available
Methanol	LOAEL 2 340 mg/kg bw/day (monkey)	260 - 6 660 mg/m³	No data available
Ethyl mercaptan	200 mg/kg bw/day	550 mg/m³	No data available

Aspiration hazard

Contact with eyes

Extremely cold material, can cause burns similar to frostbite.
Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

Contact with skin

Contact with frozen liquid may cause cold burns/frostbite

Ingestion

Contact with frozen liquid may cause cold burns/frostbite
As this product is a gas, refer to the inhalation section

Inhalation

Danger of suffocation at high concentrations due to oxygen displacement
Exposure to oxygen deficient atmosphere may cause the following symptoms: dizziness, salivation, nausea, vomiting, loss of mobility/consciousness.
Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.
In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

11.2 Information on other hazards

Does not contain any substances with endocrine disrupting properties at levels of 0.1% or higher

SECTION 12: Ecological information

12.1 Toxicity

Based on available data, the classification criteria are not met

Substances

Chemical Name	LC_{50} (fish)	EC_{50} (aquatic invertebrates)	EC_{50} (aquatic algae)
Propane/LPG	(4 days) 24.11 - 147.54 mg/L	LC_{50} (48 h) 14.22 - 69.43 mg/L	(4 days) 7.71 - 16.5 mg/L
1,3-butadiene	(4 days) 41.5 - 45 mg/L	(48 h) 33 mg/L	(72 h) 33 mg/L

SECTION 12: Ecological information (....)

Methanol	(4 days) 15.4 g/L	(4 days) 18.26 g/L	(4 days) 22 g/L
Ethyl mercaptan	(4 days) 2.4 mg/L	(48 h) 100 µg/L	(72 h) 750 - 3 000 µg/L

12.2 Persistence and degradability

Readily biodegradable (100%)

Substances

Chemical Name	Biodegradation
Propane/LPG	Readily biodegradable (100%)
1,3-butadiene	Readily biodegradable (100%)
Methanol	Readily biodegradable in water (100%)
Ethyl mercaptan	Under test conditions no biodegradation observed (100%)

12.3 Bioaccumulative potential

Bioaccumulation is not expected

Substances

Chemical Name	Bioconcentration Factor (BCF)	Log Kow
Propane/LPG	Low potential for bioaccumulation (Log Pow < 3)	(Log Pow) 1.09 - 2.8 @ 20 °C
1,3-butadiene	9.8 dimensionless	(Log Pow) 1.99 @ 20 °C
Methanol	< 10	(Log Pow) -0.77 @ 20 °C
Ethyl mercaptan	Low potential for bioaccumulation (Log Pow < 3)	(Log Pow) 1.5 @ 20 °C

12.4 Mobility in soil

The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces

Substances

Chemical Name	Adsorption/desorption
Propane/LPG	No data available
1,3-butadiene	Koc 51.5 @ 20°C
Methanol	Koc 0.13 - 1
Ethyl mercaptan	Koc 12.96 @ 20°C

12.5 Results of PBT and vPvB assessment

Does not contain any substances considered to be PBT or vPvB at levels of 0.1% or higher

12.6 Endocrine disrupting properties

Does not contain any substances with endocrine disrupting properties at levels of 0.1% or higher

12.7 Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Contact supplier if guidance is required
Return unused product in original cylinder to supplier
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 flash back arrestor
Do not discharge into any place where its accumulation could be dangerous
Disposal should be in accordance with local, state or national legislation
Cylinders should be returned to suppliers
Empty containers represent a fire hazard as they may contain flammable product residues and vapour.

SECTION 13: Disposal considerations (....)

Never weld, solder or braze empty containers.

13.2 Classification

The waste must be identified according to the List of Wastes (2000/532/EC)

Hazardous Property Code(s): HP 3 Flammable

SECTION 14: Transport information

14.1 UN number or ID number

UN No.: 1978

14.2 UN proper shipping name

Proper Shipping Name: PROPANE

14.3 Transport hazard class(es)

Hazard Class: 2

14.4 Packing group

Packing Group: Not applicable

14.5 Environmental hazards

Not classified

14.6 Special precautions for user

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Before transporting product containers ensure there is adequate ventilation and:
• they are firmly secured and the cylinder valve is closed and not leaking;
• the valve outlet cap nut or plug (where provided) is correctly fitted;
• the valve protection device (where provided) is correctly fitted.
The transportation information is not intended to convey all specific regulatory data relating to this material.
For complete transportation information, contact a SGS Gases customer service representative.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable

14.8 Road/Rail (ADR/RID)

ADR UN No.:	1978
Proper Shipping Name:	PROPANE
ADR Hazard Class:	2
ADR Packing Group:	Not applicable
Tunnel Restriction Code:	(B/D)

14.9 Sea (IMDG)

IMDG UN No.:	1978
Proper Shipping Name:	PROPANE
IMDG Hazard Class:	2.1
IMDG Packing Group.:	Not applicable

14.10 Air (ICAO/IATA)

SECTION 14: Transport information (....)

ICAO UN No.: 1978
Proper Shipping Name: PROPANE
ICAO Hazard Class: 2.1
ICAO Packing Group: Not applicable
Forbidden for air transport
Special Provision(s): A1

SECTION 15: Regulatory information

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

This safety data sheet is provided in compliance with REACH Regulation (EC) No 1907/2006 (as amended by Regulation (EU) 2020/878) and UK REACH

The GB Classification, Labelling and Packaging Regulation (GB CLP) applies in Great Britain

Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe

Seveso III Directive (2012/18/EU), Dangerous Substances in Annex I: Listed Part 2 – Extremely Flammable

Restrictions on use according to Annex XVII to REACH Regulation: Entry 40 - Flammable substances in aerosol generators for entertainment and decorative purposes.

15.2 Chemical safety assessment

A REACH chemical safety assessment has not been carried out

SECTION 16: Other information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Sources of data: Information from company data, published literature and supplier safety data sheets

Training advice

Workers must be informed of the presence of hazardous ingredients and trained in the proper use and handling of this product as required under applicable regulations

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Flam. Gas 1, H220: Classification based on bridging principles of substantially similar mixtures
Press. Gas, H280: Classification based on bridging principles of substantially similar mixtures

Text not given with phrase codes where they are used elsewhere in this safety data sheet:

H220: Extremely flammable gas

H224: Extremely flammable liquid and vapour

H225: Highly flammable liquid and vapour.

H280: Contains gas under pressure; may explode if heated

H301: Toxic if swallowed

H302: Harmful if swallowed

H311: Toxic in contact with skin

SECTION 16: Other information (....)

H331: Toxic if inhaled

H340: May cause genetic defects

H350: May cause cancer

H370: Causes damage to organs

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long lasting effects

Acronyms

ATE: Acute Toxicity Estimate

BOELV: Binding Occupational Exposure Limit Value

CAS: Chemical Abstracts Service

DMEL: Derived Minimal Effect Level

DNEL: Derived No-Effect Level

EC: European Community

EC_{50}: Effective Concentration, 50%

GHS: Globally Harmonised System

IARC: International Agency for Research on Cancer

IOELV: Indicative Occupational Exposure Limit Value

LC_{50}: Lethal Concentration, 50%

LD_{50}: Lethal Dose, 50%

LOAEC: Lowest Observed Adverse Effect Concentration

LOAEL: Lowest Observed Adverse Effect Level

NOAEC: No Observed Adverse Effect Concentration

NOAEL: No Observed Adverse Effect Level

OEL: Occupational Exposure Limit

PBT: Persistent, Bioaccumulative and Toxic

PNEC: Predicted No-Effect Concentration

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals

SCL: Specific Concentration Limit

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

WEL: Workplace Exposure Limit