Gas Ultra 2100°C 400ml

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

1.1. Product identifier

Trade name/designation:

Gas Ultra 2100°C 400ml

Article No.:
T902207

UFI:
S30R-E9EP-ST7V-67CT

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

Use of the substance/mixture:
Liquefied petroleum gas
Combustible gas cartridge for welding and filling of portable appliances.

1.3. Details of the supplier of the safety data sheet

Supplier:

KANDO Service GmbH
Hartleitnerstraße 3
4653 Eberstalzell
Austria
Telephone: +43 (0) 7241 213 79
E-mail: msds@kando.eu

1.4. Emergency telephone number

Vergiftungsinformationszentrale (VIZ), Stubenring 6, 1010 Wien, 24h: 01 406 43 43, Montag - Freitag: 8 bis 16 Uhr, Tel.: 01 406 68 98 (keine medizinische Auskunft) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Flammable gases *(Flam. Gas 1A)*	H220: Extremely flammable gas.	
Gases under pressure *(Press. Gas (Liq.))*	H280: Contains gas under pressure; may explode if heated.	

2.2. Label elements

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

Hazard pictograms:



GHS02
Flame

Signal word: Danger

Hazard statements for physical hazards	
H220	Extremely flammable gas.

Precautionary statements Prevention	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Precautionary statements Response	
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	In case of leakage, eliminate all ignition sources.

Precautionary statements Storage	
P403	Store in a well-ventilated place.

Additional information:

Derogation from labelling requirements: Mixtures containing liquefied petroleum gas placed on the market as cartirdges conforming to the EN 417 Standard («Non-refillable metalllic cartridges for liquefied petroleum gases, with or without a valve, for use with portable appliances; construction, inspection, testing and marking») are labelled only with the appropriate pictogram, the hazard indications and safety advice concening flammability.

2.3. Other hazards

Other adverse effects:

Vapours may form an explosive mixture with air, specially if in confined areas. The build-up of vapours in confined areas can cause suffocation due to the decrease in oxygen concentration. Vapours are invisible even if the liquid expansion produces mist in presence of wet air. LPG vapours are heavier than air and tend to drop to ground and stratify. Contact with the liquid phase of the product with skin and eyes can result in frostbite. The product combustion releases CO2 (carbon dioxide) which is an asphyxiant gas; decrease in oxyen concentration (due to insufficient ventilation/fumes exhaust) can also release CO (carbon monoxide), which is an extremely toxic gas. If containers are strongly heated (e.g. in case of fire), this may result in a strong increase in volume and pressure of the liquid contained inside and containers may explode. The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Additional information:

Composition: isobutane/n-butane = 70% ; propane = 30%. Classification as a carcinogenic or mutagenic product is not required since the substance contains 1,3-butadiene in a percentage lower than 0,1%.

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 68476-85-7 EC No.: 270-704-2 REACH No.: 01-2119486557-22	**Liquefied petroleum gas** Flam. Gas 1A (H220), Press. Gas (Liq.) (H280) Danger	> 99.9 Vol-%

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Following inhalation:

Move victim away from source of exposure and into fresh air. If respiratory symptoms ascribed to inhalation of vapours develop, seek medical attention immediately. In case of difficulties in breathing, apply artificial respiration.

In case of skin contact:

Carefully remove contaminated clothing. Flush affected skin with plenty of water. Seek medical attention so that the victim can be treated for possible frostbite.

After eye contact:

Rinse opened eye for several minutes under running water. Consult a doctor if symptoms persist

Following ingestion:

Ingestion is not considered a predictable route of exposure.

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

Inhalation of vapours can cause depression of the central nervous system, with symptoms like drowsiness, dizziness, blurred vision and arrhythmia. Contact with the rapidly evaporating liquid results in frostbite.

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

For indications on the possible need to seek medical attention and/or special treatments, please refer to SECTION 4.1. Symptoms connected with the inhalation of vapours may develp at a later time after the exposure. Show the doctor the product label and/or the product safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Fires of a smaller nature or fires involving the means of transport can be extinguished with suitable extinguishing agents suitable for fire class C (e.g. chemical powder or carbon dioxide).

Unsuitable extinguishing media:

Full water jet

5.2. Special hazards arising from the substance or mixture

The product is a highly flammable gas under pressure. In case of fire, gas container(s) can explode and generate irritant fumes and toxic gases (carbon monoxide) and ejection of metallic fragments. Vapours can form explosive mixtures with air. Vapours are heavier than air and tend to drop and stratify near the ground.

5.3. Advice for firefighters

Evacuate and isolate the area. Only well trained personnel must have access to the area. In case of fire due to gas leakage, do not extinguish the fire unless leak can be stopped safely. It is better to fight an ignited gas release fire than a gas cloud expanding towards an ignition source. Large ignited gas releases which cannot be extinguished by stopping the gas flow must be kept under control with the use of fractional jet hydrants; this for decreasing the concentration of possible gas clouds. Ask for firemen intervention if you are not sure to extinguish the fire shortly and with the available fire exstinguishing media. Cool down containers exposed to fire with atomized water so to avoid overheating and explosion of containers. Fire fighters must always werar appropriate individual protection equipment (helmet, fire-proof gloves and self-contained, positive-pressure, breathing apparatus with face shield) [ref. EN 469]. Prevent contaminated extinction water from flowing into drains or rivers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Evacuate and isolate the area. Only well trained personnel must have access to the area. Remove any ignition sources if this can be be done safely. Try to contain product release at source if this can be done

safely. Ensure proper ventilation. Do not inhale vapours and avoid contact of the liquid with skin and eyes. Warn the authorities according to what provided for by the emergency plan.
For personnel not intervening directly: Use adequate personal protective equipment (please refer to SECTION 8.2). For personnel intervening directly: Use adequate protection equipment (please refer to SECTION 8.2). In case of intervention in areas where gas presence is high (e.g. confined areas), use a self-contained, positive-pressure breathing apparatus. Work windward, if safe to do so. Use fractioned-jet hydrants also in order to decrease the concentration of possible gas clouds below the lower limit of explosivity. Prevent gas from spreading into low-lying areas, since gas vapours density is higher than air and vapours tend to stratify near the ground. Orient containers in such a way to prevent liquid from flowing out if safe to do this.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Limit product flowing out as much as possible. Prevent the product from spreading into environment and flowing to sewage system, surface water and groundwater. Warn authorities in case of large spillage into drains or waterways.

6.3. Methods and material for containment and cleaning up

For cleaning up:

If the product has not volatized, soak up residuals with inert material (e.g. sand, meerschaum/sepiolite, concrete or sawdust) and store in a properly labeled container. Only use anti-sparking tools. DO NOT use electrical equipment/tools which are not provided with an explosion-proof system. Temporarily store the product residuals in open air before conveying them to the waste disposal system. Wash the involved area with water in order to eliminate the residual contamination.

6.4. Reference to other sections

See section 7 for further information on safe handling.
For further information on personal protective equipment: see section 8.
For further information on disposal: see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Product handling operations are to be carried out only by qualified personnel, well trained on the specific risks connected with this operation and on the safety precautions to take. Ensure proper ventilation. Do not inhale vapours and avoid contact of the liquid with skin and eyes. Wear appropriate personal protective equipment (please refer to SECTION 8.2). Only use anti-sparking tools. DO NOT use electrical equipment/tools that are not provided with an explosion-proof system. Keep away from heat sources, hot surfaces, sparks, open flames and any other ignition source. No smoking. Provide grounding of containers, pipes and equipment. Avoid the build-up of electrostatic charges. DO not pierce/burn containers even if empty after use. Do not spray on open flames or on any other ignition source. DO not eat, drink while using the product. After use, carefully wash your hands as well as the other areas of the skin exposed to the product. Periodically wash work clothing and personal protective equipment to remove contaminants.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Store in a cool, dry place in well-sealed containers. Store in a well-ventilated place.

Further information on storage conditions:

Protect from sunlight. Do no expose to temperatures exceeding 50 °C. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Take precautionary measures against static discharge.

7.3. Specific end use(s)

Recommendation:

Uses other than those indicated in SECTION 1.2 are strongly discouraged. Carefully read the instructions for installing the cartridge before using it. Storage and handling of the product intended for the use of

gas cartridge and the relevant container must meet the reference standards covering the transport of hazardous goods and, in a special way, the packing instructions.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No data available

8.2.2. Personal protection equipment

Eye/face protection:

Wear safety goggles with protection. In case of thermal risk (frostbite) due to jets of liquid product, wear a face shield or a visor for splash protection [ref. EN 166].

Skin protection:

Hand protection:
Wear antistatic, high-abrasion resistant gloves to protect yourselves against the mechanical risks. [ref. EN 388 Standard]. In case of thermal risk (frostbite) due to jets of liquid product, wear thermoinsulated gloves [ref. EN 511 Standard]. Immediately replace contaminated or broken gloves.

Body protection:
Wear full work clothing (appropriate to cover also upper and lower limbs) showing antistatic and fire-proof characteristics [ref. EN 340 Standard].

Respiratory protection:

In case of insufficient ventilation, wear a full face mask with filter for organic vapours [ref. EN 136 Standard]. In case of intervention in areas where gas presence is high /e.g. confined areas), wear a self-contained respiratory apparatus [ref. EN 529].

Other protection measures:

General protective and hygienic measures:
Plan a localized ventilation through suction or other appropriate devices in order to keep particles in the air below the recommended exposure limit. Do not eat, drink or smoke while using the product. After use, wash your hands and the other areas of the skin exposed to the product. Periodically wash the work clothing and the personal protective equipment to remove contaminants.

8.2.3. Environmental exposure controls

Operate in compliance with the standard in force (Legislative Decree nr. 152/2006).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: gaseous
Colour: colourless
Odour: characteristic
flammability: No data available
Odour threshold: 2,9 - 14,6 mg/m³ (butane)

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	*not applicable*		
Melting point	< 130 °C		
Freezing point	< 130 °C		
Initial boiling point and boiling range	-0.5 °C		
Flash point	-74 °C		
Evaporation rate			② Evaporates quickly into atmosphere and causes abrupt cooling of the surfaces with which it comes into contact.
Auto-ignition temperature	*No data available*		

Parameter	Value	at °C	① Method ② Remark
Upper/lower flammability or explosive limits	1.8 – 10 Vol-%		
Vapour pressure	1,820 – 7,150 mm Hg	25 °C	
Vapour density	1.56 – 2.07		
Relative density	0.5 – 0.6		
Bulk density	*not applicable*		
Water solubility	*No data available*		
Self ignition temperature	405 °C		
Solubility	48.9 – 62.4 mg/L	25 °C	② Soluble in ether and chloroform.

9.2. Other information
Vapours may form explosive misture with air.
Not oxidizing.
Critical temperature: 153.2°C (n-butane), 134.69°C (isobutane), 96.81°C (propane)
Critical pressure: 35.7 atm (butane), 35.82 atm (isobutane), 42.01 atm (propane)

9.2.1. Information with regard to physical hazard classes
Flammable gases:
Extemely flammable gas (at 20°C and 101.3 kPa).

SECTION 10: Stability and reactivity

10.1. Reactivity
No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability
The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions
Vapours may form explosive mixtures with air, specially in confined areas. Contact with strong oxidants (hypochlorites, nitrates, perchlorates, permanganates and dichromate) and halogens may cause highly exothermic reactions and result in explosion. The product can also react violently with oxidizing substances (peroxides, chlorine dioxide, nitrogen dioxide). Strong heating of the containers (e.g. in case of fire) results in a strong increase in volume and pressure of the liquid and this may cause the container to explode.

10.4. Conditions to avoid
Do not expose to sun rays and temperatures higher than 50 °C. Avoid contact with heat sources, hot surfaces, sparks, open flames and any other ignition sources. Avoid the build-up of electrostatic charges. Do not pierce/burn containers) even after use. Do not vaporize on open flames or other ignition source. Avoid contact with incompatible materials (please refer to SECTION 10.5).

10.5. Incompatible materials
Oxidizing agent, Halogens, Oxidising substances

10.6. Hazardous decomposition products
Thermal decomposition may result in the release of CO2 (carbon dioxide), asphyxiating gas and CO (carbon monoxide), which is a highly toxic gas.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute oral toxicity:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of acute toxicity by oral and dermal routes are considered to be neither practical nor important.

Acute dermal toxicity:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of acute toxicity by oral and dermal routes are considered to be neither practical nor important.

Acute inhalation toxicity:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of acute toxicity by oral and dermal routes are considered to be neither practical nor important.

Skin corrosion/irritation:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of skin corrosion/irritation are considered to be neither practical nor important. Dose-response studies carried out on humans have pointed out that propane and butane are not irritant/corrosive to skin and mucous membranes. Contact of the liquefied gas with the skin can result in frostbite.

Serious eye damage/irritation:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of corrosion/irritation to the eyes are considered to be neither practical nor important. Contact of the liquefied gas with eyes can result in frostbite.

Respiratory or skin sensitisation:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of respiratory or skin sensitisation are considered to be neither practical nor important.

Germ cell mutagenicity:
No indications of human germ cell mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
No indications of human reproductive toxicity exist.

STOT-single exposure:
No STOT effect due to single exposure are known for the product.

STOT-repeated exposure:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure and can form explosive mixtures with air. Therefore, experiments on possible effects of chronic toxicity by oral and dermal routes are considered to be neither practical nor important. During a study conducted thoughout a 6-week period on male and female rats no neurological, hematological or clinic effects have been observed. Atdoses equal to 12,000 ppm, male animals have shown a 25% decrease in weight during the first week of exposure (LOAEC = 12.000 ppm / 21.641 mg/m3) [data on propane].

Aspiration hazard:
not applicable

Additional information:
Toxicokinetics, metabolism and distribution: Toxicokinetic studies revealed how short-chain alkanes (C1-C4), which at ambient temperature exist in the form of vapour, have a poor absorption potential and, if absorbed, they are rapidly breathed out.

11.2. Information on other hazards
No data available

SECTION 12: Ecological information

12.1. Toxicity
Assessment/classification:
Liquefied petroleum gas is highly flammable at ambient temperature and standard pressure; it is formed by gaseous substances which are mainly distributed in air, rather than in water, sediments and soil. These constituents have no adverse effects to acquatic life.

12.2. Persistence and degradability

Abiotic degradation:
Liquefied petroleum gas can contribute to the ground level ozone formation. However, the photochemical ozone formation depends on a complicated interaction with other atmospheric pollutants as well as on environmental conditions.

Biodegradation:
Studies conducted on a similar substance have revealed 100% biodegradability in 16 days [data on ethane].

12.3. Bioaccumulative potential

Liquefied petroleum gas CAS No.: 68476-85-7 EC No.: 270-704-2
Log K_{OW}: 2.8

Accumulation / Evaluation:
Based on the estimated value of the partition coefficient/n-octanol/water of the liquefied petroleum gas (log Pow = 1.09 – 2.8), the product does not bioaccumulate.

12.4. Mobility in soil

Standard absorption tests cannot be applied to the liquefied petroleum gas (UVCB substance). However, at ambient temperature and standard pressure, it is constituted by gaseous substances, which are mainly distributed in air, rather than in water, sediments and soil.

12.5. Results of PBT and vPvB assessment

Liquefied petroleum gas CAS No.: 68476-85-7 EC No.: 270-704-2
Results of PBT and vPvB assessment: —

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

None of the ingredients are included.

12.7. Other adverse effects

Liquefied petroleum gas can contribute to the ozone formation in atmosphere.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product gives dangerous properties to the waste containing LPG residuals because of gas flammability and possibility to form explosive atmospheres. It is therefore compulsory to take all the required measures and precautions to avoid dispersing the product in air. Do not dispose of the product into the sewerage system, in the environment or through waste water. Do not puncture or incinerate the container(s). The product and contaminated containers must be disposed of in compliance with the Legislative Decree n° 152/2006 through qualified and authorized facilities for the treatment of flammable waste.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

16 05 04 *	Gases in pressure containers (including halons) containing hazardous substances

**: Evidence for disposal must be provided.*

SECTION 14: Transport information

Land transport (ADR/RID)	**Inland waterway craft (ADN)**	**Sea transport (IMDG)**	**Air transport (ICAO-TI / IATA-DGR)**
14.1. UN number or ID number			
UN 2037	UN 2037	UN 2037	UN 2037
14.2. UN proper shipping name			
RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES)	GAS CARTRIDGES

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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.3. Transport hazard class(es)			
 2.1	 2.1	 2.1	 2.1
14.4. Packing group			
		-	
14.5. Environmental hazards			
No	No	No	No
14.6. Special precautions for user			
Special Provisions: 191 | 303 | 327 | 344 **Limited quantity (LQ):** 1 L **Excepted Quantities (EQ):** E0 **Classification code:** 5F **Tunnel restriction code:** (D)	**Special Provisions:** 191 | 303 | 327 | 344 **Limited quantity (LQ):** 1 L **Excepted Quantities (EQ):** E0 **Classification code:** 5F	**Special Provisions:** 191 | 277 | 303 | 327 | 344 | 959 **Limited quantity (LQ):** Siehe SV277 **Excepted Quantities (EQ):** E0 **EmS-No.:** F-D, S-U	**Special Provisions:** A145 | A167 **Limited quantity (LQ):** Y203 **Excepted Quantities (EQ):** E0

14.7. Maritime transport in bulk according to IMO instruments
not applicable

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Authorisations:

Legislative Decree n° 81/2008 – consolidated law on safety in workplaces: Legislative Decree n° 152/2006 – protection of water (Title III) and waste (Title IV); Legislative Decree n° 334/99 – control of major-accident hazards involving given dangerous substances; The product does not contain: Substances of very high concern (SVHC) subject to authorisation; Substances of very high concern (SVHC) subject to authorization procedure (Annex XIV); Substances subject to restriction procedure (Annex XVII); According to EC Regulation n° 1907/2006 (REACH).

15.1.2. National regulations
No data available

15.2. Chemical Safety Assessment
No data available

SECTION 16: Other information

16.1. Indication of changes
No data available

16.2. Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DNEL	derived no-effect level
EN	European Standard
EWC	European Waste Catalogue

ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
OSHA	Occupational Safety & Health Administration
PBT	persistent and bioaccumulative and toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation and Authorization of Chemicals
RID	Dangerous goods regulations for transport by rail
SVHC	substances of very high concern
UN	United Nations
UVCB	substance of unknown or variable composition, complex reaction products or biological materials

16.3. Key literature references and sources for data
No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Flammable gases *(Flam. Gas 1A)*	H220: Extremely flammable gas.	
Gases under pressure *(Press. Gas (Liq.))*	H280: Contains gas under pressure; may explode if heated.	

16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

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

16.6. Training advice
No data available

16.7. Additional information
To the best of our knowledge, the information contained herein is accurate. However, neither the above-mentioned supplier nor its subsidiaries assume any liability with regard to the correctness or completeness of the information provided. A final determination of the suitability of individual materials is the sole responsibility of the user. All materials may involve unknown risks and should be used with caution. While certain risks are described herein, we cannot guarantee that these are the only possible risks.