Mapp Pure Propylene

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

1.1. Product identifier

Trade name/designation:

Mapp Pure Propylene

Article No.:
Y902210

UFI:
F6TX-R4C9-2QMU-K6FD

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

Use of the substance/mixture:
(Fuel) gases

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 (Comp.))*	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.
H280	Contains gas under pressure; may explode if heated.

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Supplemental hazard information: none

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	
P410 + P403	Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

Other adverse effects:

The product does not meet the PBT/vPvB criteria.
The product does not contain any substances with endocrine-disrupting properties in concentrations of ≥ 0.1%.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 115-07-1 EC No.: 204-062-1 Index No.: 601-011-00-9	**propene** Flam. Gas 1A (H220), Press. Gas (Comp.) (H280) Danger	≥ 99.5 Vol-%
CAS No.: 74-98-6 EC No.: 200-827-9 Index No.: 601-003-00-5 REACH No.: 01-2119486944-21	**propane** Flam. Gas 1A (H220), Press. Gas (Comp.) (H280) Danger **Acute Toxicity Estimate** ATE (oral) 5,840 mg/kg ATE (dermal) 13,900 mg/kg ATE (inhalation, gases) > 25 ppmV ATE (inhalation, vapour) ≥ 50 mg/L	≤ 0.5 Vol-%

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

Use fresh air masks when rescuing exposed persons. Take the injured person into fresh air, give oxygen immediately and take him to hospital as soon as possible.

Following inhalation:

Remove the injured person to the open air. If breathing has stopped, give artificial respiration. If breathing is difficult, trained personnel should administer oxygen. The injured person should be placed in a warm place with fresh air and a doctor should be called immediately.

In case of skin contact:

Remove contaminated clothing. Warm the exposed part of the body in lukewarm water if cold injury has occurred. DO NOT use water that is too warm. Frostbite should be treated by a doctor.

After eye contact:

If possible, remove any contact lenses immediately. Rinse eyes with lukewarm water for several minutes. If irritation persists, consult a doctor or ophthalmologist.

Following ingestion:

Consult a doctor if symptoms persist.

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

General: Contact with rapidly spreading gas may cause frostbite.
Inhalation: High concentrations may displace normal air and cause asphyxiation due to lack of oxygen. May cause drowsiness and dizziness.

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In case of eye contact: Frostbite, irritation.
In case of skin contact: Contact with rapidly spreading gas may cause frostbite. May cause dry skin or skin cracking with prolonged or frequently repeated exposure.
In case of ingestion: Frostbite.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Powder, Carbon dioxide, Foam

Unsuitable extinguishing media:

Must not be extinguished with water at high pressure.

5.2. Special hazards arising from the substance or mixture

In case of fire, harmful gases (carbon monoxide and carbon dioxide) may be produced. In the event of fire, pressure can build up which can cause the packaging to explode. The gas is explosive on contact with air. Flammable gas.

5.3. Advice for firefighters

Protective measures are taken with regard to the other material at the fire site. Containers near the fire should be removed and cooled with water. If the gas cylinder cannot be removed, cool with water for as long as the fire burns and then for at least another 10 minutes. Vapours are heavier than air and can spread over the ground. Use fresh air mask in case of fire. Wear full protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Use recommended protective equipment, see section 8. Do not breathe the gas. Clear the area and vent the gases. Note risk of ignition and explosion. Switch off equipment with open flame, embers or other heat generation. Note the risk of sparks from static electricity. Do not undress in the room where spillage/ fallout has occurred. Use mask with fresh air supply if oxygen level is low or unknown.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Notify emergency services in case of major spills. Prevent entry into sewers, cellars, working pits or other places where gas accumulation could be dangerous.

6.3. Methods and material for containment and cleaning up

Other information:

The gas from leaking gas cylinders must evaporate outdoors. Evacuate and ventilate the building.

6.4. Reference to other sections

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:

Avoid spillage, inhalation and contact with skin and eyes. Only experienced and properly trained persons should handle compressed gas. Only use compliant equipment suitable for this product, its pressure and temperature. If in doubt, contact your gas supplier. Take measures against electrostatic charges. Pressurised container: Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50°C. Use only in well-ventilated areas.

Check hoses and closures regularly, paying attention to gas leaks. Do not eat, drink or smoke in rooms where this product is used. Open flames, hot objects, sparks or other sources of ignition must not be present in the premises where this product is handled. Prevent static electricity from semi-conductive floor coverings, shoe soles and humidity above 50%. There must be an evacuation plan and evacuation routes must not be blocked.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:

The product should be stored in such a way that hazards to health and the environment are avoided. Avoid contact with humans and animals and release into the environment. Take the necessary precautions and protective measures for safe storage. Keep away from food and animal feed and from equipment or surfaces that come into contact with them. Keep out of reach of children. Store tightly closed in the original packaging. Always use sealed and clearly labelled packaging. Store in a well-ventilated area. Store in a dry place that is not above normal room temperature. Store at a maximum of 50 °C. Do not store in direct sunlight. Avoid naked flames, hot objects, sparks or other sources of ignition. Do not store near incompatible materials (see section 10.5).

7.3. Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
MAK (AT)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	② 2,000 ppm (3,600 mg/m³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
MAK (AT)	**propane** CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m³)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Ventilation in the workplace must ensure air quality that meets the specifications of the applicable working environment legislation. Local exhaust ventilation should be used to remove airborne contaminants at source. Since nitrogen gases could be released, oxygen meters should be used.

8.2.2. Personal protection equipment

Eye/face protection:

Use eye protection in case of risk of direct contact or splashes.

Skin protection:

Escaping gas can cause severe cold. It is recommended to wear cold protection gloves marked with the appropriate pictogram. The most suitable protective gloves should be selected in consultation with the glove supplier, taking into account the risk assessment of the specific activity and the properties of the chemicals involved. Please note that the breakthrough time of the material is influenced by the duration of exposure, temperature conditions, wear and tear, etc.

Respiratory protection:
Use respiratory protection if ventilation is poor. Fresh air breathing mask may be necessary. The most appropriate respiratory protective equipment should be selected in consultation with the appointed safety representative, taking into account the risk assessment of the specific activity.

Other protection measures:
The hazards posed by the product or its components must be considered in the activity-based risk assessment in accordance with the applicable working environment legislation. The risk assessment should be reviewed regularly and updated as necessary.

8.2.3. Environmental exposure controls
Do not allow to enter drains/surface water/ground water. Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
Physical state: gaseous
Form: Compressed gas
Colour: colourless
Odour: odourless
flammability: No data available

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	*not applicable*		② insoluble in: Water
Melting point	-185 °C		
Freezing point	-185 °C		
Initial boiling point and boiling range	-48 °C		
Flash point	-108 °C		
Evaporation rate	*No data available*		
Auto-ignition temperature	497 °C		
Upper/lower flammability or explosive limits	2 – 11 %		
Vapour pressure	900 kPa	15 °C	
Vapour density	1.5	0 °C	② air = 1
Density	0.6 kg/L		
Bulk density	*not applicable*		
Water solubility	practically insoluble		

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
No hazardous reactions expected under normal conditions.

10.2. Chemical stability
Stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions
Reacts strongly or explosively with certain oxidising agents.

10.4. Conditions to avoid
Direct sunlight, heat, open flames, sparks, hot surfaces, sources of ignition.

10.5. Incompatible materials
Avoid contact with: Oxidising substances, Halogens

10.6. Hazardous decomposition products
none

SECTION 11: Toxicological information

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

propane CAS No.: 74-98-6 EC No.: 200-827-9
LD_{50} oral: 5,840 mg/kg (Rat)
LD_{50} dermal: 13,900 mg/kg (Rabbit)
LC_{50} Acute inhalation toxicity (gas): >25 ppmV 4 h (Rat)
LC_{50} Acute inhalation toxicity (vapour): ≥50 mg/L 4 h (Rat)

Acute oral toxicity:
Based on available data, the classification criteria are not met.

Acute inhalation toxicity:
Caution: Inhalation of large quantities may cause suffocation due to lack of oxygen.

Skin corrosion/irritation:
Contact with compressed gas can cause frostbite.

Serious eye damage/irritation:
Contact with compressed gas can cause frostbite.

Respiratory or skin sensitisation:
Based on available data, the classification criteria are not met.

Germ cell mutagenicity:
Based on available data, the classification criteria are not met.

Carcinogenicity:
Based on available data, the classification criteria are not met.

Reproductive toxicity:
Based on available data, the classification criteria are not met.

STOT-single exposure:
High concentrations may displace normal air and cause asphyxiation due to lack of oxygen. Prolonged inhalation may cause unconsciousness and/or death.

STOT-repeated exposure:
Based on available data, the classification criteria are not met.

Aspiration hazard:
Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties:
The product does not contain any substances with endocrine-disrupting properties in concentrations of ≥ 0.1%.

SECTION 12: Ecological information

12.1. Toxicity

propane CAS No.: 74-98-6 EC No.: 200-827-9
LC_{50}: 9,640 mg/L 4 d (fish, Pimephales promelas)
LC_{50}: 0.41 mg/L 4 d (fish, Oncorhynchus mykiss)
LC_{50}: 49.9 mg/L 4 d (fish)
EC_{50}: >100 mg/L (Algae/water plant, Bacteria)
EC_{50}: 0.17 mg/L 3 d (Algae/water plant, Selenastrum capricornutum)
EC_{50}: 69.43 mg/L 2 d (crustaceans, Daphnia) Calculation with the ECOSAR programme v1.00.
NOEC: 0.017 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata)
ErC_{50}: 19.37 mg/L 4 d (Algae/water plant, Algae) Calculation with the ECOSAR programme v1.00.
LOEC: 1,000 mg/L (Algae/water plant, Algae)
LOEC: 1,000 mg/L (Algae/water plant, Alge)
IC_{50}: 11.3 mg/L 3 d (Algae/water plant)

Additional ecotoxicological information:
At the quantities where this product is used, environmental effects can be ignored. Note that the local environment can be affected and that all discharges affect the ecosystem.

12.2. Persistence and degradability

propane CAS No.: 74-98-6 EC No.: 200-827-9
Biodegradation: Yes, rapidly

Biodegradation:
Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

propane CAS No.: 74-98-6 EC No.: 200-827-9
Log K_{OW}: 1.09

Bioconcentration factor (BCF):
This product or its ingredients do not accumulate in nature.

12.4. Mobility in soil
Information on mobility in nature is lacking, but there is no reason to assume that the product is harmful to the environment for this reason. Evaporates rapidly in air.

12.5. Results of PBT and vPvB assessment

propane CAS No.: 74-98-6 EC No.: 200-827-9
Results of PBT and vPvB assessment: —

The product does not meet the PBT/vPvB criteria.

12.6. Endocrine disrupting properties
The product does not contain any substances with endocrine-disrupting properties in concentrations of ≥ 0.1%.

12.7. Other adverse effects
water hazard class 0: non-hazardous to water
Large emissions in the atmosphere can produce ground surface ozone in sunlight and are thus harmful to vegetation and can cause respiratory problems for humans and animals.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product and packaging must be treated as hazardous waste. Pressure vessels: Do not puncture or incinerate, even after use. Also consider local regulations on waste disposal. See Regulation 2008/98/

EC on waste. Please comply with national or regional regulations on waste disposal. This product is not normally recycled.

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 1077	UN 1077	UN 1077	UN 1077
14.2. UN proper shipping name			
PROPYLENE	PROPYLENE	PROPYLENE	PROPYLENE
14.3. Transport hazard class(es)			
 2.1	 2.1	 2.1	 2.1
14.4. Packing group			
		-	
14.5. Environmental hazards			
No data available	No data available	No data available	No data available
14.6. Special precautions for user			
Classification code: 2F **Tunnel restriction code:** (B/D)	**Classification code:** 2F	**EmS-No.:** F-D, S-U **Remark:** Transport category: 2; maximum total quantity per transport unit 333 kg or litres Congestion category: E	No data available

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

No data available

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
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
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service

CLP	Classification, Labelling and Packaging
DNEL	derived no-effect level
EC_{50}	Effective Concentration 50%
ES	Exposure scenario
EWC	European Waste Catalogue
IC_{50}	Inhibition Concentration 50 %
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC_{50}	Lethal (fatal) Concentration 50%
LD_{50}	Lethal (fatal) Dose 50%
MAK	Maximum concentration in the workplace air (CH)
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
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
TRGS	Technische Regeln für Gefahrstoffe
UN	United Nations

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 (Comp.))*	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.