

propylene, liquefied, under pressure

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

1.1 Product identifier:

Product name	: propylene, liquefied, under pressure
Synonyms	: 1-propen, liquefied, under pressure; propylene; propene; 1-propene; 1-propylene; 1-propylene, liquefied, under pressure; linde FG-2; liquefied petroleum gas (=propene); methylethene; methylethene, liquefied, under pressure; methylethylene; methylethylene, liquefied, under pressure; propylène, liquefied, under pressure; propylene-E; R 1270
Product type REACH	: Substance/mono-constituent (Organic)
CAS number	: 115-07-1
EC index number	: 601-011-00-9
EC number	: 204-062-1
RTECS number	: UC6740000
Molecular mass	: 42.08 g/mol
Formula	: C ₃ H ₆

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

1.2.1 Relevant identified uses

Chemical raw material
Propellant
Monomer

1.2.2 Uses advised against

See heading 15.1: Reach Annex XVII - Restriction

1.3 Details of the supplier of the safety data sheet:

Supplier of the SDS

CHEMOGAS NV
Westvaardijk 85
B-1850 Grimbergen Belgium
Tel: +32 2 251 60 87
Fax: +32 2 252 17 51
info@chemogas.com

Distributor of the substance

CHEMOGAS NV
Westvaardijk 85
B-1850 Grimbergen Belgium
Tel: +32 2 251 60 87
Fax: +32 2 252 17 51
info@chemogas.com

1.4 Emergency telephone number:

24h/24h: +32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statement code(s)
Flam. Gas	category 1	H220: Extremely flammable gas.
Press. Gas	Liquefied gas	H280: Contains gas under pressure; may explode if heated.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

F+; R12 - Extremely flammable.

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2.2 Label elements:

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

Hazard pictograms



Signal word

Danger

H-statements

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

P-statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P381 Eliminate all ignition sources if safe to do so.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

2.3 Other hazards:

CLP

Substance does not meet the screening criteria for persistency nor bioaccumulation so is neither PBT nor vPvB
May build up electrostatic charges: risk of ignition
May be ignited by sparks
Gas/vapour spreads at floor level: ignition hazard
Heat may cause pressure rise in tanks/drums: explosion risk
May cause frostbites
Large spills/in enclosed spaces: risk of oxygen deficiency
Slightly irritant to eyes
Not readily biodegradable in water

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name (REACH Registration No)	CAS No EC No	Conc.	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
propylene	115-07-1 204-062-1		F+; R12	Flam. Gas 1; H220 Press. Gas - Liquefied gas; H280	(1)(2)	Mono-constituent

(1) For R-phrases and H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/ aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

After ingestion:

Not applicable.

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

4.2.1 Acute symptoms

After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Feeling of weakness. Headache. Nausea. Irritation of the respiratory tract. Disturbed tactile sensibility. Coordination disorders. Disturbances of consciousness. Vomiting. Respiratory difficulties.

After skin contact:

Frostbites.

After eye contact:

Frostbites.

After ingestion:

Not applicable.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Preferably: dry chemical powder. Water spray. Polyvalent foam. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

5.2 Special hazards arising from the substance or mixture:

Upon combustion CO and CO₂ are formed.

5.3 Advice for firefighters:

5.3.1 Instructions:

If no hazard for/from the surroundings: controlled burning. If hazardous substances are nearby: consider extinguishment. Extinguish only if gas supply/leak can be shut afterwards. Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion.

5.3.2 Special protective equipment for fire-fighters:

Large spills/in enclosed spaces: compressed air apparatus. Protective clothing. Insulating gloves. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep upwind. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Avoid ingress of water in the containers.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Insulating gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Tip the container on one side to stop the leakage. Try to reduce evaporation. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

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7.1 Precautions for safe handling:

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Gas/vapour heavier than air at 20°C. Observe normal hygiene standards.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

< 50 °C. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Keep only in the original container. Under a shelter/in the open. Meet the legal requirements.

7.2.2 Keep away from:

Oxidizing agents, (strong) acids, halogens.

7.2.3 Suitable packaging material:

Aluminium, copper, steel, stainless steel, monel steel, carbon steel.

7.2.4 Non suitable packaging material:

Plastics.

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer .

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Indicative exposure limit (the Netherlands)

Propyleen	Time-weighted average exposure limit 8 h	900 mg/m ³	
	Time-weighted average exposure limit, calculated	514 ppm	

Limit Value (Belgium)

Propylène	Short time value	- ppm - mg/m ³	
	Time-weighted average exposure limit 8 h	- ppm - mg/m ³	

TLV (USA)

Propylene	Short time value	-	
	Time-weighted average exposure limit 8 h	500 ppm	

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

If applicable and available it will be listed below.

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Before use: check for peroxides and eliminate them. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Do not eat, drink or smoke during work.

a) Respiratory protection:

b) Hand protection:

Insulated gloves.

- materials for protective clothing (good resistance)

Nitrile rubber, polyethylene, PVC, tetrafluoroethylene, viton.

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- materials for protective clothing (poor resistance)
Butyl rubber, chlorosulfonated polyethylene, natural rubber, neoprene.

c) Eye protection:

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Gas
Odour	Characteristic odour
Odour threshold	23 - 80 ppm 38 - 138 mg/m ³
Colour	Colourless
Particle size	Not applicable (gas)
Explosion limits	2.0 - 11.1 vol % 35 - 200 g/m ³
Flammability	Extremely flammable gas.
Log Kow	1.77
Dynamic viscosity	0.0002 Pa.s ; -50 °C
Kinematic viscosity	No data available
Melting point	-185 °C
Boiling point	-48 °C
Flash point	No data available
Evaporation rate	No data available
Vapour pressure	10300 hPa ; 20 °C 20600 hPa ; 50 °C
Relative vapour density	1.5
Solubility	water ; 0.02 g/100 ml ether ; soluble ethanol ; soluble acetic acid ; soluble
Relative density	0.61 ; -48 °C
Decomposition temperature	815 °C
Auto-ignition temperature	455 °C
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

Physical hazards

Flammable gas
Gas under pressure

9.2 Other information:

Minimum ignition energy	0.28 mJ
Surface tension	0.02 N/m ; -50 °C

SECTION 10: Stability and reactivity

10.1 Reactivity:

May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Substance has neutral reaction.

10.2 Chemical stability:

Unstable on exposure to air.

10.3 Possibility of hazardous reactions:

Oxidizes on exposure to air: peroxidation resulting in increased fire or explosion risk. Reacts violently with (strong) oxidizers and with (some) acids: (increased) risk of fire/explosion. Polymerizes on exposure to some compounds e.g.: with (some) halogens.

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10.4 Conditions to avoid:

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5 Incompatible materials:

Oxidizing agents, (strong) acids, halogens, plastics.

10.6 Hazardous decomposition products:

Upon combustion CO and CO₂ are formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

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	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Inhalation	LC50		658 mg/l/4h		Rat		literature

Conclusion

Low acute toxicity by the inhalation route

Corrosion/irritation

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No data available

Conclusion

No data available

Respiratory or skin sensitisation

propylene, liquefuid, under pressure

No data available

Conclusion

No data available

Specific target organ toxicity

propylene, liquefuid, under pressure

No data available

Conclusion

No data available

Mutagenicity (in vitro)

propylene, liquefuid, under pressure

No data available

Mutagenicity (in vivo)

propylene, liquefuid, under pressure

No data available

Carcinogenicity

propylene, liquefuid, under pressure

No data available

Reproductive toxicity

propylene, liquefuid, under pressure

No data available

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

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No data available

Conclusion

No data available

SECTION 12: Ecological information

12.1 Toxicity:

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No data available

Conclusion

12.2 Persistence and degradability:

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Biodegradation water

Method	Value	Duration	Value determination
OECD 301D: Closed Bottle Test	0 %		Experimental value

Conclusion

Not readily biodegradable in water

Literature reports: inherently biodegradable

12.3 Bioaccumulative potential:

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Log Kow

Method	Value	Temperature	Value determination
	1.77		Experimental value

Conclusion

Low potential for bioaccumulation (Log Kow < 4)

12.4 Mobility in soil:

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Volatile organic compounds (VOC)	100 %
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Insoluble in water

12.5 Results of PBT and vPvB assessment:

Substance does not meet the screening criteria for persistency nor bioaccumulation so is neither PBT nor vPvB.

12.6 Other adverse effects:

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Global warming potential (GWP)

No data available

Ozone-depleting potential (ODP)

Ozone layer	Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)
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SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, decision 2001/118/EC).

16 05 04* (gases in pressure containers (including halons) containing dangerous substances). Depending on branch of industry and production process, also other EURAL codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Refer to manufacturer/supplier for information on recovery/ recycling. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. May be discharged to company wastewater treatment plant. Do not discharge into the sewer.

13.1.3 Packaging/Container

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Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	1077
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14.2 UN proper shipping name:

Proper shipping name	Propylene
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14.3 Transport hazard class(es):

Hazard identification number	23
Class	2
Classification code	2F

14.4 Packing group:

Packing group	
Labels	2.1

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Rail (RID)

14.1 UN number:

UN number	1077
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14.2 UN proper shipping name:

Proper shipping name	Propylene
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14.3 Transport hazard class(es):

Hazard identification number	23
Class	2
Classification code	2F

14.4 Packing group:

Packing group	
Labels	2.1 (+ 13)

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Inland waterways (ADN)

14.1 UN number:

UN number	1077
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14.2 UN proper shipping name:

Proper shipping name	Propylene
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14.3 Transport hazard class(es):

Class	2
Classification code	2F

14.4 Packing group:

Packing group	
Labels	2.1

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Sea (IMDG)

14.1 UN number:

UN number	1077
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14.2 UN proper shipping name:

Proper shipping name	Propylene
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14.3 Transport hazard class(es):

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Class	2.1
14.4 Packing group:	
Labels	2.1
14.5 Environmental hazards:	
Marine pollutant	-
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	
Limited quantities	
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	
Annex II of MARPOL 73/78	

Air (ICAO-TI/IATA-DGR)

14.1 UN number:	
UN number	1077
14.2 UN proper shipping name:	
Proper shipping name	Propylene
14.3 Transport hazard class(es):	
Class	2.1
14.4 Packing group:	
Packing group	
Labels	2.1
14.5 Environmental hazards:	
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	A1
Cargo transport: maximum net quantity per packaging	150 kg
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	Forbidden

SECTION 15: Regulatory information

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

European legislation:

REACH Annex XVII - Restriction

Enumerated in Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

National legislation

- The Netherlands

Waterbezwaarlijkheid (for NL)	8
Waste identification other lists of waste materials	LWCA (the Netherlands): KGA category 06

- Germany

WGK	-	Classification non-water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 1)
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15.2 Chemical safety assessment:

No chemical safety assessment has been conducted.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Enumerated in substance list Annex I of directive 67/548/EEC et sequens

Labels



F+

R-phrases

12 Extremely flammable

S-phrases

(02) (Keep out of the reach of children)

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- 09 Keep container in a well-ventilated place
16 Keep away from sources of ignition - No smoking
33 Take precautionary measures against static discharges

Full text of any R-phrases referred to under headings 2 and 3:

R12 Extremely flammable

Full text of any H-statements referred to under headings 2 and 3:

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

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