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

1.1. Product identifier

Product form : Mixture

Trade name : LPG

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

1.2.1. Relevant identified uses

No additional information available

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

QATAR PETROCHEMICAL COMPANY (QAPCO)

P.O. Box 756
DOHA
QATAR
T 00974 424 2444

1.4. Emergency telephone number

Emergency number : For Chemical Emergency Call CHEMTREC 24hr/day 7days/week
Within USA and Canada: 1-800-424-9300 CCN724450
Outside USA and Canada: +1 703-741-5970; +1 703-527-3887
(collect calls accepted)

Country/Area	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable gases, Category 1A H220

Gases under pressure : Liquefied gas H280

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

Signal word :

Danger

Hazard statements (CLP) :

H220 - Extremely flammable gas.

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

Precautionary statements (CLP) :

P202 - Do not handle until all safety precautions have been read and understood.

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

2.3. Other hazards

Other hazards :

Results of PBT and vPvB assessment : Not applicable.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
butane substance with national workplace exposure limit(s) (AT, BE, BG, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, LV, PL, PT, SI, SK, IS, NO, MK, CH)	CAS-No.: 106-97-8 EC-No.: 203-448-7 EC Index: 601-004-00-0	60 – 80	Flam. Gas 1, H220 Press. Gas
propane substance with national workplace exposure limit(s) (AT, BE, BG, DE, DK, EE, ES, FI, GR, IE, LV, PL, PT, RO, SI, IS, NO, MK, CH, TR)	CAS-No.: 74-98-6 EC-No.: 200-827-9 EC Index: 601-003-00-5	20 – 40	Flam. Gas 1A, H220 Press. Gas
methane substance with national workplace exposure limit(s) (BE, BG, FI, IE, PT, RO, CH)	CAS-No.: 74-82-8 EC-No.: 200-812-7 EC Index: 601-001-00-4	< 1	Flam. Gas 1A, H220 Press. Gas

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Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Ethylene substance with national workplace exposure limit(s) (BE, ES, FI, IE, LT, LV, PT, SE, SK, CH)	CAS-No.: 74-85-1 EC-No.: 200-815-3 EC Index: 601-010-00-3	< 0,1	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 STOT SE 3, H336
Ethane substance with national workplace exposure limit(s) (BE, ES, FI, IE, PT, CH)	CAS-No.: 74-84-0 EC-No.: 200-814-8 EC Index: 601-002-00-X	< 0,1	Flam. Gas 1, H220 Press. Gas
Propene substance with national workplace exposure limit(s) (BE, DK, ES, FI, IE, LT, LV, PL, PT, SE, CH)	CAS-No.: 115-07-1 EC-No.: 204-062-1 EC Index: 601-011-00-9	< 0,1	Flam. Gas 1A, H220 Press. Gas
Propane substance with national workplace exposure limit(s) (AT, BE, BG, DE, DK, EE, FI, GR, IE, LV, PL, PT, RO, SI, NO, CH)	CAS-No.: 74-98-6 EC-No.: 200-827-9 EC Index: 601-003-00-5	< 0,006	Flam. Gas 1A, H220 Press. Gas (Comp.), H280

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice	: First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.
Inhalation	: Remove casualty to fresh air and keep warm and at rest. In case of doubt or persistent symptoms, consult always a physician.
Skin contact	: Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.
Eyes contact	: Rinse immediately carefully and thoroughly with eye-bath or water. In case of doubt or persistent symptoms, consult always a physician.
Ingestion	: Get medical advice/attention.

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

Symptoms/effects	: No information available.
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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	: carbon dioxide (CO2), powder, alcohol-resistant foam, water spray.
Unsuitable extinguishing media	: Strong water jet.

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5.2. Special hazards arising from the substance or mixture

Specific hazards : Not flammable. Heating will cause a rise in pressure with a risk of bursting.

5.3. Advice for firefighters

Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8. Do not breathe gas. Avoid contact with skin, eyes and clothing. Keep away from heat and direct sunlight. Use explosion-proof equipment.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so. Leave evaporate and disperse. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Do not breathe gas. Avoid contact with skin, eyes and clothing. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment. Keep away from heat and direct sunlight. Use explosion-proof equipment.

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Hygiene measures : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10.

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

Packaging materials : Keep only in the original container. Suitable material: Unsuitable material:

Switzerland

Storage class (LK) : LK 2 - Liquefied or pressurized gases

7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

propane (74-98-6)	
Austria - Occupational Exposure Limits	
Local name	Propan (R 290)
MAK (OEL TWA)	1800 mg/m ³
	1000 ppm
MAK (OEL STEL)	3600 mg/m ³
	2000 ppm
Regulatory reference	BGBl. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	Hydrocarbures aliphatiques sous forme gazeuse: (Alcanes C1-C3) # Alifatische koolwaterstoffen in gas-vorm: Alkanen (C1-C3)
OEL TWA	1000 ppm (gas)
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Пропан
OEL TWA	1800 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)

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propane (74-98-6)	
Denmark - Occupational Exposure Limits	
Local name	Propan (Flaskegas)
OEL TWA	1800 mg/m ³
	1000 ppm
OEL STEL	3600 mg/m ³
	2000 ppm
Regulatory reference	BEK nr 291 af 19/03/2024
Estonia - Occupational Exposure Limits	
Local name	Propaan
OEL TWA	1800 mg/m ³
	1000 ppm
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
Finland - Occupational Exposure Limits	
Local name	Propaani
HTP (OEL TWA)	1500 mg/m ³ (suffocating gas that displaces oxygen)
	800 ppm (suffocating gas that displaces oxygen)
HTP (OEL STEL)	2000 mg/m ³
	1100 ppm
Remark	Happea syrjäyttämällä tukahduttavat kaasut.
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Propan
Occupational exposure limit value (mg/m ³) (TRGS900)	1800 mg/m ³
Occupational exposure limit value (ppm) (TRGS900)	1000 ppm
Peak exposure limitation factor	4(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission)
Regulatory reference	TRGS900
Greece - Occupational Exposure Limits	
Local name	Προπάνιο
OEL TWA	1800 mg/m ³
	1000 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους

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propane (74-98-6)	
Ireland - Occupational Exposure Limits	
Local name	Aliphatic hydrocarbon gases Alkanes (C1-C3): Propane
OEL STEL	3000 ppm (calculated (Aliphatic hydrocarbon gases - Alkanes (C1-C4))
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values), Asphx. (Gaseous chemical substances which may not produce significant physiological effects in the exposed employee, but when present in high concentrations will act as simple asphyxiants)
OEL chemical category	Simple asphyxiant
Regulatory reference	Chemical Agents Code of Practice 2024
Latvia - Occupational Exposure Limits	
Local name	Propāns
OEL TWA	1800 mg/m ³
	1000 ppm
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2015. gada 7. aprīlī noteikumiem Nr. 163)
Poland - Occupational Exposure Limits	
Local name	Propan
NDS (OEL TWA)	1800 mg/m ³
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
OEL TWA	1000 ppm
Romania - Occupational Exposure Limits	
Local name	Propan
OEL TWA	1400 mg/m ³
	778 ppm
OEL STEL	1800 mg/m ³
	1000 ppm
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Slovenia - Occupational Exposure Limits	
Local name	propan
OEL TWA	1800 mg/m ³
	1000 ppm
OEL STEL	7200 mg/m ³
	4000 ppm
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Propano

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propane (74-98-6)	
VLA-ED (OEL TWA)	1000 ppm Hidrocarburos alifáticos alcanos (C1 – C4) y sus mezclas, gases (Butano; Etano; Metano; Propano)
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Iceland - Occupational Exposure Limits	
Local name	Própan (flöskugas)
OEL TWA	1800 mg/m ³
	1000 ppm
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Propan
Grenseverdi (OEL TWA)	900 mg/m ³
	500 ppm
Korttidsverdi (OEL STEL)	1125 mg/m ³ (value calculated)
	625 ppm (value calculated)
Regulatory reference	FOR-2023-12-18-2278
North Macedonia - Occupational Exposure Limits	
Local name	Пропан
OEL TWA	1800 mg/m ³
	1000 ppm
KTV	4
Short time value [mg/m ³]	7200 mg/m ³
Short time value	4000 ppm
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија” бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	Propane / Propan
MAK (OEL TWA)	1800 mg/m ³
	1000 ppm

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propane (74-98-6)	
KZGW (OEL STEL)	7200 mg/m ³
	4000 ppm
Remark	NIOSH
Regulatory reference	www.suva.ch, 01.01.2024
USA - ACGIH - Occupational Exposure Limits	
Local name	Propane
Remark (ACGIH)	TLV® Basis: Simple Asphyxiant
ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content
Regulatory reference	ACGIH 2024

butane (106-97-8)	
Austria - Occupational Exposure Limits	
Local name	Butan (beide Isomeren): n-Butan (R 600)
MAK (OEL TWA)	1900 mg/m ³ (Butane (all isomers))
	800 ppm (Butane (all isomers))
MAK (OEL STEL)	3800 mg/m ³
	1600 ppm
Regulatory reference	BGBI. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	Butane, tous isomères: n-butane # Butaan, alle isomeren: n-butaan
OEL STEL	2370 mg/m ³
	980 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	n-Бутан
OEL TWA	1900 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA)	1450 mg/m ³
	22 mg/m ³ (containing >=0.1% Butadiene)
	600 ppm 10 ppm (containing >=0.1% Butadiene)
KGVI (OEL STEL)	1810 mg/m ³
	750 ppm
OEL chemical category	Carcinogen Category 1A containing >=0.1% Butadiene, Mutagen Category 1B containing >=0.1% Butadiene

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butane (106-97-8)	
Denmark - Occupational Exposure Limits	
Local name	n-Butan
OEL TWA	1200 mg/m ³
	500 ppm
OEL STEL	2400 mg/m ³
	1000 ppm
Regulatory reference	BEK nr 291 af 19/03/2024
Estonia - Occupational Exposure Limits	
Local name	n-butaan
OEL TWA	1500 mg/m ³
	800 ppm
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 21.12.2022, 3)
Finland - Occupational Exposure Limits	
Local name	n-Butaani
HTP (OEL TWA)	1900 mg/m ³ (suffocating gas that displaces oxygen (Butane))
	800 ppm (suffocating gas that displaces oxygen (Butane))
HTP (OEL STEL)	2400 mg/m ³
	1000 ppm
Remark	Happea syrjäyttämällä tukahduttavat kaasut.
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	n-Butane
VME (OEL TWA)	1900 mg/m ³
	800 ppm
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Butan
Occupational exposure limit value (mg/m ³) (TRGS900)	2400 mg/m ³
Occupational exposure limit value (ppm) (TRGS900)	1000 ppm
Peak exposure limitation factor	4(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission)
Regulatory reference	TRGS900

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butane (106-97-8)	
Greece - Occupational Exposure Limits	
Local name	Βουτάνιο
OEL TWA	2350 mg/m ³
	1000 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	n-BUTÁN
AK (OEL TWA)	2350 mg/m ³
CK (OEL STEL)	9400 mg/m ³
Remark	N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Butane, all isomers: Butane
OEL TWA	1000 ppm (Aliphatic hydrocarbon gases - Alkanes (C1-C4))
OEL STEL	3000 ppm (calculated)
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024
Latvia - Occupational Exposure Limits	
Local name	Butāns (kas satur vairāk nekā 0,1 % butadiēna)
OEL TWA	300 mg/m ³
Remark	Carc. 1A; Muta. 1B
Regulatory reference	Ministru kabineta 2008. gada 29. septembra noteikumi Nr. 803 (Grozījumi Ministru kabineta 2020. gada 7. janvārī noteikumiem Nr. 10).
Poland - Occupational Exposure Limits	
Local name	Butan (n-butan)
NDS (OEL TWA)	1900 mg/m ³
NDSch (OEL STEL)	3000 mg/m ³
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Butano, todos os isómeros
OEL STEL	1000 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia - Occupational Exposure Limits	
Local name	Bután s obsahom ≥ 0,1% butadiénu (n-bután)

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butane (106-97-8)	
NPHV (OEL TWA)	2400 mg/m ³ (TSH)
	1000 ppm (TSH)
Remark	Kategória karcinogénov 1A – Dokázaný karcinogén pre ľudí
Regulatory reference	Nariadenie vlády č. 356/2006 Z. z. (235/2020 Z. z.)
Slovenia - Occupational Exposure Limits	
Local name	butan
OEL TWA	2400 mg/m ³ (containing >=0.1% Butadiene)
	1000 ppm (containing >=0.1% Butadiene)
OEL STEL	9600 mg/m ³ (containing >=0.1% Butadiene)
	4000 ppm (containing >=0.1% Butadiene)
OEL chemical category	Category 1B containing >=0.1% Butadiene, Category 1A containing >=0.1% Butadiene
Regulatory reference	Uradni list RS, št. 72/2021 z dne 11.5.2021
Spain - Occupational Exposure Limits	
Local name	Butano
VLA-ED (OEL TWA)	1000 ppm Hidrocarburos alifáticos alcanos (C1 – C4) y sus mezclas, gases (Butano; Etano; Metano; Propano)
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	Butane
WEL TWA (OEL TWA)	1450 mg/m ³
	600 ppm
WEL STEL (OEL STEL)	1810 mg/m ³
	750 ppm
Remark	Carc (Capable of causing cancer and/or heritable genetic damage, only applies if Butane contains more than 0.1% of buta-1,3-diene)
WEL chemical category	Capable of causing cancer and/or heritable genetic damage containing >0.1% Buta-1,3-diene
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	n-Bútan
OEL TWA	1200 mg/m ³
	500 ppm
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Butan

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butane (106-97-8)	
Grenseverdi (OEL TWA)	600 mg/m ³
	250 ppm
Korttidsverdi (OEL STEL)	750 mg/m ³ (value calculated)
	312,5 ppm (value calculated)
Regulatory reference	FOR-2023-12-18-2278
North Macedonia - Occupational Exposure Limits	
Local name	Бутан
OEL TWA	2400 mg/m ³
	1000 ppm
KTV	4
Short time value [mg/m ³]	9600 mg/m ³
Short time value	4000 ppm
Remark	(KTV) краткотрајна вредност (КТВ) значи концентрација на опасни хемиски супстанции во воздухот на работното место внатре во зона на дишење, на која работникот без опасност по здравјето може да е изложен на покусо време. Изложеноста на краткотрајни вредности може да трае највеќе 15 минути и не смее да се повтори повеќе од четирипати во работната смена, при што меѓу две изложености на оваа концентрација мора да измине најмалку 60 минути. Краткотрајната вредност е изразена во mg/m ³ или во ml/m ³ (ppm) а е дадена како многукратни дозволени пречекорувања на граничната вредност
Regulatory reference	Правилник за минималните барања за безбедност и здравје при работа на вработени од ризици поврзани со изложување на хемиски супстанции („Службен весник на Република Македонија“ бр.46/10)
Switzerland - Occupational Exposure Limits	
Local name	n-Butane / n-Butan
MAK (OEL TWA)	1900 mg/m ³ (Butane (all isomers))
	800 ppm (Butane (all isomers))
KZGW (OEL STEL)	7600 mg/m ³ (Butane both isomers)
	3200 ppm (Butane both isomers)
Regulatory reference	www.suva.ch, 01.01.2024
USA - ACGIH - Occupational Exposure Limits	
Local name	Butane
ACGIH OEL STEL	1000 ppm (explosion hazard (Butane, isomers))
Remark (ACGIH)	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2024

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Ethylene (74-85-1)	
Belgium - Occupational Exposure Limits	
Local name	Ethylène # Etheen
OEL TWA	233 mg/m ³
	200 ppm
Remark	A: la mention "A" signifie que l'agent libère un gaz ou une vapeur qui n'ont en eux-mêmes aucun effet physiologique mais peuvent diminuer le taux d'oxygène dans l'air. Lorsque le taux d'oxygène descend en dessous de 17-18 % (vol/vol) le manque d'oxygène provoque des suffocations qu'aucun symptôme préalable n'annonce. # A: de vermelding "A" betekent dat dit agens gas of damp vrijgeeft dat of die op zich geen fysiologische werking heeft, maar het zuurstofgehalte in de lucht verlaagt. Wanneer het zuurstofgehalte daalt onder de 17-18 % (vol/vol), veroorzaakt het zuurstoftekort verstikking, die zich manifesteert zonder dat er een waarschuwing aan voorafgaat.
OEL chemical category	Asphyxiant
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Finland - Occupational Exposure Limits	
Local name	Etyleni
HTP (OEL TWA)	200 ppm (suffocating gas that displaces oxygen)
Remark	Happea syrjäyttämällä tukahduttavat kaasut.
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveystieteiden ministeriö)
Ireland - Occupational Exposure Limits	
Local name	Ethylene
OEL TWA	200 ppm
OEL STEL	600 ppm (calculated)
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values), Asphx. (Gaseous chemical substances which may not produce significant physiological effects in the exposed employee, but when present in high concentrations will act as simple asphyxiants)
OEL chemical category	Simple asphyxiant
Regulatory reference	Chemical Agents Code of Practice 2024
Latvia - Occupational Exposure Limits	
Local name	Etilēns
OEL TWA	100 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325
Lithuania - Occupational Exposure Limits	
Local name	Etilenas
IPRV (OEL TWA)	100 mg/m ³
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)

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Ethylene (74-85-1)	
Portugal - Occupational Exposure Limits	
Local name	Etileno
OEL TWA	200 ppm
OEL chemical category	A4 - Not Classifiable as a Human Carcinogen
Remark	A4 (Agente não classificável como carcinogénico no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia - Biological limit values	
Local name	Etylén
BLV	180 µg/l Medium: red blood cells - Sampling time: not critical
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (Zmena: 471/2011 Z.z.)
Spain - Occupational Exposure Limits	
Local name	Etileno
VLA-ED (OEL TWA)	200 ppm
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Sweden - Occupational Exposure Limits	
Local name	Eten
NGV (OEL TWA)	330 mg/m ³
	250 ppm
KGV (OEL STEL)	1200 mg/m ³
	1000 ppm
Remark	V (Vägledande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
Switzerland - Occupational Exposure Limits	
Local name	Ethylène / Ethen [Ethylen]
MAK (OEL TWA)	11500 mg/m ³
	10000 ppm
Notation	M2 / M2
Remark	NIOSH
OEL chemical category	Category 2 mutagen
Regulatory reference	www.suva.ch, 01.01.2024
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethylene
ACGIH OEL TWA	200 ppm
Remark (ACGIH)	TLV® Basis: Asphyxia. Notations: A4 (Not classifiable as a Human Carcinogen)

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Ethylene (74-85-1)	
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2024

Ethane (74-84-0)	
Belgium - Occupational Exposure Limits	
OEL TWA	1000 ppm (gas)
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	1000 ppm (suffocating gas that displaces oxygen)
Ireland - Occupational Exposure Limits	
OEL STEL	3000 ppm (calculated (Aliphatic hydrocarbon gases - Alkanes (C1-C4))
OEL chemical category	Simple asphyxiant
Portugal - Occupational Exposure Limits	
OEL TWA	1000 ppm
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA)	1000 ppm
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	12500 mg/m ³
	10000 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content

methane (74-82-8)	
Belgium - Occupational Exposure Limits	
OEL TWA	1000 ppm (gas)
Bulgaria - Occupational Exposure Limits	
OEL TWA	500 mg/m ³
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	1000 ppm (suffocating gas that displaces oxygen)
Ireland - Occupational Exposure Limits	
OEL STEL	3000 ppm (calculated (Aliphatic hydrocarbon gases - Alkanes (C1-C4))
OEL chemical category	Simple asphyxiant
Portugal - Occupational Exposure Limits	
OEL TWA	1000 ppm
Romania - Occupational Exposure Limits	
OEL TWA	1200 mg/m ³
	1834 ppm

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methane (74-82-8)	
OEL STEL	1500 mg/m ³
	2292 ppm
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	6700 mg/m ³
	10000 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content

Propene (115-07-1)	
Belgium - Occupational Exposure Limits	
OEL TWA	875 mg/m ³
	500 ppm
Denmark - Occupational Exposure Limits	
OEL TWA	172 mg/m ³
	100 ppm
OEL STEL	344 mg/m ³
	200 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	500 ppm (suffocating gas that displaces oxygen)
Ireland - Occupational Exposure Limits	
OEL TWA	500 ppm
OEL STEL	1500 ppm (calculated)
OEL chemical category	Simple asphyxiant
Latvia - Occupational Exposure Limits	
OEL TWA	100 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	900 mg/m ³
	500 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	2000 mg/m ³
NDSch (OEL STEL)	8600 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	500 ppm
OEL chemical category	A4 - Not Classifiable as a Human Carcinogen
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA)	500 ppm

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Propene (115-07-1)	
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	900 mg/m ³
	500 ppm
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	17500 mg/m ³
	10000 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	500 ppm
ACGIH chemical category	Not Classifiable as a Human Carcinogen

Propane (74-98-6)	
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	1800 mg/m ³
	1000 ppm
MAK (OEL STEL)	3600 mg/m ³
	2000 ppm
Belgium - Occupational Exposure Limits	
OEL TWA	1000 ppm (gas)
Bulgaria - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
Denmark - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
	1000 ppm
OEL STEL	3600 mg/m ³
	2000 ppm
Estonia - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
	1000 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	1500 mg/m ³ (suffocating gas that displaces oxygen)
	800 ppm (suffocating gas that displaces oxygen)
HTP (OEL STEL)	2000 mg/m ³
	1100 ppm
Germany - Occupational Exposure Limits (TRGS 900)	
Occupational exposure limit value (mg/m ³) (TRGS900)	1800 mg/m ³

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Propane (74-98-6)	
Occupational exposure limit value (ppm) (TRGS900)	1000 ppm
Greece - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
	1000 ppm
Ireland - Occupational Exposure Limits	
OEL STEL	3000 ppm (calculated (Aliphatic hydrocarbon gases - Alkanes (C1-C4))
OEL chemical category	Simple asphyxiant
Latvia - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
	1000 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	1800 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA	1000 ppm
Romania - Occupational Exposure Limits	
OEL TWA	1400 mg/m ³
	778 ppm
OEL STEL	1800 mg/m ³
	1000 ppm
Slovenia - Occupational Exposure Limits	
OEL TWA	1800 mg/m ³
	1000 ppm
OEL STEL	7200 mg/m ³
	4000 ppm
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA)	900 mg/m ³
	500 ppm
Korttidsverdi (OEL STEL)	1125 mg/m ³ (value calculated)
	625 ppm (value calculated)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	1800 mg/m ³
	1000 ppm
KZGW (OEL STEL)	7200 mg/m ³
	4000 ppm

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Propane (74-98-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Personal air monitoring. Room air monitoring.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Additional information : Recommended monitoring procedures :. Personal air monitoring. Room air monitoring

8.1.5. Control banding

No additional information available

8.2. Exposure controls

Engineering measure(s)	: Provide adequate ventilation. Organisational measures to prevent/limit releases, dispersion and exposure. See Section 7 for information on safe handling.
Personal protective equipment	: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hand protection	: Wear chemically resistant gloves (tested to EN374) . Suitable material: The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	: Use suitable eye protection (EN166):
Body protection	: Wear suitable protective clothing
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. full face mask (DIN EN 136). Filter type: The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)
Thermal hazard protection	: Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	: Avoid release to the environment. Comply with applicable Community environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Colour	: Colourless.
Appearance	: Liquefied gas.

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Odour	: Not available
Odour threshold	: No data available
Melting / freezing point	: No data available
Freezing point	: Not applicable
Initial boiling point and boiling range	: No data available
Flammability	: Extremely flammable gas.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
pH	: No data available
Kinematic viscosity	: No data available
Dynamic viscosity	: No data available
Solubility	: Water: No data available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water	: No data available
Vapour pressure	: No data available
Vapour pressure at 50°C	: Not available
Density	: Not applicable
Relative density	: No data available
Vapour density	: No data available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reference to other sections: 10.4 & 10.5.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

See Section 7 for information on safe handling. Keep away from heat.

10.5. Incompatible materials

See Section 7 for information on safe handling.

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10.6. Hazardous decomposition products

Reference to other sections 5.2.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

propane (74-98-6)	
LC50/inhalation/4h/rat (ppm)	> 800000 ppm (Exposure time: 15 min Source: ECHA_API)

butane (106-97-8)	
LC50/inhalation/4h/rat	658 g/m ³ (Exposure time: 4 h Source: NLM_CIP)

Ethylene (74-85-1)	
LC50/inhalation/4h/rat (ppm)	> 57000 ppm/4h

Ethane (74-84-0)	
LC50/inhalation/4h/rat (ppm)	> 800000 ppm/4h

methane (74-82-8)	
LD50/dermal/rat	> 2000 mg/kg (Source: ECHA_API)
LC50/inhalation/4h/rat (ppm)	539600 ppm (Exposure time: 2 h Source: ECHA_API)

Propene (115-07-1)	
LC50/inhalation/4h/rat (ppm)	> 65000 ppm/4h

Propane (74-98-6)	
LC50/inhalation/4h/rat (ppm)	> 800000 ppm (Exposure time: 15 min Source: ECHA_API)

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: No data available
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: No data available
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)

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Ethylene (74-85-1)

IARC group	3 - Not classifiable
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Propene (115-07-1)

IARC group	3 - Not classifiable
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Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

Ethylene (74-85-1)

STOT-single exposure	May cause drowsiness or dizziness.
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STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not applicable

LPG

Kinematic viscosity	No data available
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11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2. Other information

Other information : Symptoms related to the physical, chemical and toxicological characteristics, For further information see section 4

SECTION 12: Ecological information

12.1. Toxicity

Environmental properties : According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

LPG

Persistence and degradability	No additional information available.
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12.3. Bioaccumulative potential

LPG	
Partition coefficient n-octanol/water	No data available
Bioaccumulative potential	No additional information available.

propane (74-98-6)	
Partition coefficient n-octanol/water	1,09 (at 20 °C (at pH 7)

butane (106-97-8)	
Partition coefficient n-octanol/water	2,31 (at 20 °C (at pH 7)

Ethylene (74-85-1)	
BCF - Fish [1]	4 – 4,6
Partition coefficient n-octanol/water	1,13 (at 25 °C (at pH 7)

Ethane (74-84-0)	
Partition coefficient n-octanol/water	1,09 – 2,8 (at 20 °C (at pH 7)

methane (74-82-8)	
Partition coefficient n-octanol/water	1,09

Propene (115-07-1)	
Partition coefficient n-octanol/water	1,77 (at 20 °C (at pH 7)

Propane (74-98-6)	
Partition coefficient n-octanol/water	1,09 (at 20 °C (at pH 7)

12.4. Mobility in soil

LPG	
Mobility in soil	No data available

12.5. Results of PBT and vPvB assessment

LPG	
Results of PBT assessment	Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations. Packaging contaminated by the product : Do not pierce or burn, even after use. Never use pressure to empty container.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : This material and its container must be disposed of as hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
1965	1965	1965	1965	1965
14.2. UN proper shipping name				
HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	Hydrocarbon gas mixture, liquefied, n.o.s.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.
Transport document description				
UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., 2.1, (B/D)	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., 2.1	UN 1965 Hydrocarbon gas mixture, liquefied, n.o.s., 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., 2.1
14.3. Transport hazard class(es)				
2.1	2.1	2.1	2.1	2.1
				
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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ADR	IMDG	IATA	ADN	RID
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Special precautions for user : No data available

- Overland transport

Classification code (ADR) : 2F
 Special provisions : 274, 392, 583, 652, 662, 674
 Limited quantities (ADR) : 0
 Excepted quantities (ADR) : E0
 Packing instructions (ADR) : P200
 Mixed packing provisions (ADR) : MP9
 Portable tank and bulk container instructions (ADR) : (M), T50
 Tank code (ADR) : PxBN(M)
 Tank special provisions (ADR) : TA4, TT9
 Vehicle for tank carriage : FL
 Transport category (ADR) : 2
 Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV10, CV36
 Special provisions for carriage - Operation (ADR) : S2, S20
 Hazard identification number (Kemler No.) : 23
 Orange plates :

23

1965

 Tunnel restriction code : B/D
 EAC code : 2YE

- Transport by sea

Special provisions (IMDG) : 274, 392
 Limited quantities (IMDG) : 0
 Excepted quantities (IMDG) : E0
 Packing instructions (IMDG) : P200
 Tank instructions (IMDG) : T50
 EmS-No. (Fire) : F-D
 EmS-No. (Spillage) : S-U
 Stowage category (IMDG) : E
 Stowage and handling (IMDG) : SW2

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Properties and observations (IMDG) : Liquefied flammable hydrocarbon gas obtained from natural gas or by distillation of mineral oils or coal, etc. May contain propane, cyclopropane, propylene, butane, butylene, etc., in varying proportions. Heavier than air.

- Air transport

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : 200
CAO max net quantity (IATA) : 150kg
Special provisions (IATA) : A1
ERG code (IATA) : 10L

- Inland waterway transport

Classification code (ADN) : 2F
Special provisions (ADN) : 274, 392, 583, 662, 674
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport

Classification code (RID) : 2F
Special provisions (RID) : 274, 392, 583, 662, 674
Limited quantities (RID) : 0
Excepted quantities (RID) : E0
Packing instructions (RID) : P200
Mixed packing provisions (RID) : MP9
Portable tank and bulk container instructions (RID) : T50(M)
Tank codes for RID tanks (RID) : PxBN(M)
Special provisions for RID tanks (RID) : TU38, TE22, TA4, TT9, TM6
Transport category (RID) : 2
Special provisions for carriage - Loading, unloading and handling (RID) : CW9, CW10, CW36
Colis express (express parcels) (RID) : CE3
Hazard identification number (RID) : 23

14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : No data available.

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
40.	propane ; butane ; Ethylene ; Ethane ; methane ; Propene ; Propane	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (EU 1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Detergent Regulation (648/2004/EC): Labelling of contents

15.1.2. National regulations

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France

Installations classées			
No ICPE	Désignation de la rubrique	Code Régime	Rayon
4310.text	Gaz inflammables catégorie 1 et 2. La quantité totale susceptible d'être présente dans les installations y compris dans les cavités souterraines (strates naturelles, aquifères, cavités salines et mines désaffectées) étant :		
4310.1	1. Supérieure ou égale à 10 t Quantité seuil bas au sens de l'article R. 511-10 : 10 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 t.	A	2
4310.2	2. Supérieure ou égale à 1 t et inférieure à 10 t Quantité seuil bas au sens de l'article R. 511-10 : 10 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 t.	DC	2

Germany

Employment restrictions	: Observe restrictions according Act on the Protection of Working Mothers (MuSchG). Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).
Water hazard class (WGK)	: WGK nwg, Non-hazardous to water (Classification according to AwSV, Annex 1).
Hazardous Incident Ordinance (12. BImSchV)	: Listed in the 12. BImSchV (Annex I) under: 1.2.2 - Quantity threshold for operational area under § 1 para. 1 - Sentence 1 :10000 kg - Sentence 2 :50000 kg

Netherlands

Waterbezwaarlijkheid	: B (4) - Weinig schadelijk voor in het water levende organismen
SZW-lijst van kankerverwekkende stoffen	: None of the components are listed
SZW-lijst van mutagene stoffen	: None of the components are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	: None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	: None of the components are listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	: None of the components are listed

Denmark

Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product
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15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Abbreviations and acronyms:

	ABM = Algemene beoordelingsmethodiek
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	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	EWC = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)
	STOT = Specific Target Organ Toxicity
	TWA = time weighted average
	VOC = Volatile organic compounds
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the : ECHA (European Chemicals Agency), Information supplier, Loli, Inchem. datasheet

Training advice : Training staff on good practice. Manipulations are to be done only by qualified and authorised persons.

Other information : Classification - Assessment method: CLP Calculation method (Article 9).
Physicochemical hazard assessment: Information given is based on tests on the mixture itself.

Full text of H- and EUH-statements:

Flam. Gas 1	Flammable gases, Category 1
Flam. Gas 1A	Flammable gases, Category 1A
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H336	May cause drowsiness or dizziness.
Press. Gas	Gases under pressure
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas

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STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis
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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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