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

### 1.1. Product identifier

Product form : Substance  
Trade name : Propane - Butane Mixture  
Chemical name : Petroleum gases, liquefied  
EC Index : 649-202-00-6  
EC-No. : 270-704-2  
CAS-No. : 68476-85-7  
REACH registration No : 01-2119485911-31-0009  
Product group : Trade product

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

#### 1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use  
Use of the substance/mixture : Fuels  
Propellant  
Blowing agent  
Intermediate, functional monomer  
Formulation  
Distribution

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

NIS a.d. Novi Sad  
Narodnog Fronta 12  
21000 Novi Sad - Serbia  
T + 381 (0) 21 481 1111  
[Dragana.Cvetkov@nis.eu](mailto:Dragana.Cvetkov@nis.eu) (REACH)

#### Only Representative

BENS Consulting d.o.o.  
Špruha 19  
1236 Trzin - Slovenija  
T +386 41 979 800  
[info@bens-consulting.eu](mailto:info@bens-consulting.eu)

### 1.4. Emergency telephone number

Emergency number : + 381 (0) 21 481 1111 (08-16h)  
+ 381 (0)11 360 8440 (24 h)  
+ 381 (0)11 266 1122 (24 h)  
+ 381 (0)11 266 2755 (24 h)


Country	Official advisory body	Address	Emergency number
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]

Flam. Gas 1A H220

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Press. Gas (Liq.) H280

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

## 2.2. Label elements

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

Hazard pictograms (CLP)



Signal word

: Danger

Hazard statements (CLP)

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

Precautionary statements (CLP)

: 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.

Listed in Annex VI

: EC Index-No.: 649-202-00-6

## 2.3. Other hazards

Other hazards

: PBT/vPvB data. This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is 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

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Comments

: \* Note K : The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w 1,3-butadiene (EINECS No 203-450-8). If the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P210-P403 should apply. This note applies only to certain complex oil-derived substances in Part 3.

Substance name

: Propane - Butane Mixture

CAS-No.


: 68476-85-7

EC-No.

: 270-704-2

EC Index

: 649-202-00-6

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Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene) (*)	(CAS-No.) 68476-85-7 (EC-No.) 270-704-2 (EC Index) 649-202-00-6 (REACH-no) 01-2119485911-31-0009	≤ 100	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 Muta. 1B, H340 Carc. 1A, H350
1,3-Butadiene	(CAS-No.) 106-99-0 (EC-No.) 203-450-8 (EC Index) 601-013-00-X	< 0,1	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 Muta. 1B, H340 Carc. 1A, H350

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

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Additional advice	: First aider: Pay attention to self-protection!. Show this safety data sheet to the doctor in attendance. In case of doubt or persistent symptoms, consult always a physician. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. Give oxygen or artificial respiration as needed.
Inhalation	: Keep at rest. Give oxygen or artificial respiration if necessary. 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. In case of frostbite, wash with plenty of water; do not remove clothing. Wash contaminated clothing before reuse. Get medical advice/attention.
Eyes contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of doubt or persistent symptoms, consult always a physician.
Ingestion	: Rinse mouth immediately and drink plenty of water. Get medical advice/attention.

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

Inhalation	: May be irritating. The following symptoms may occur: Dizziness, Headache, Nausea, Vomiting.
Skin contact	: May be irritating. The following symptoms may occur: Can cause frostbite.
Eyes contact	: May be irritating. The following symptoms may occur: Can cause frostbite.
Ingestion	: Ingestion unlikely.


### 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. dry extinguishing powder. carbon dioxide (CO <sub>2</sub> ), 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 : Extremely flammable gas. Heating may cause an explosion. Vapours may form explosive mixture with air. Vapours are heavier than air and may spread along floors. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours. Heating will cause a rise in pressure with a risk of bursting. Container may explode if heated.

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO<sub>2</sub>).

### **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. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

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 : Stay upwind/keep distance from source. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Do not breathe gas. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure equipment is adequately earthed. Use explosion-proof equipment. Use only non-sparking tools.

#### **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. Hose down gases, fumes and/or dust with water. All processes must be supervised by specialists or authorised personnel. 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.

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Extremely cold liquid and gas under pressure. Causes severe frostbite. Provide adequate ventilation. Do not breathe gas. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Keep away from heat and direct sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tight closed. 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. Ground/bond container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools.

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

Technical measures : Gases under pressure.

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. Protect from sunlight.

Special rules on packaging : Containers which are opened should be properly resealed and kept upright to prevent leakage. After use replace the closing cap immediately. Do not pierce or burn, even after use. Do not puncture or incinerate, even when empty.

Packaging materials : Keep only in the original container.


### 7.3. Specific end use(s)

For further information see section 1.


## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters


1,3-Butadiene (106-99-0)		
EU	IOEL TWA	2,2 mg/m <sup>3</sup>
EU	IOEL TWA [ppm]	1 ppm
Austria	TRK (OEL TWA)	2,2 mg/m <sup>3</sup>
Austria	TRK (OEL TWA) [ppm]	1 ppm
Belgium	OEL TWA	4,5 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	2 ppm
Bulgaria	OEL TWA	2,2 mg/m <sup>3</sup>
Bulgaria	OEL TWA [ppm]	1 ppm
Croatia	GVI (OEL TWA) [1]	2,2 mg/m <sup>3</sup>
Croatia	GVI (OEL TWA) [2]	1 ppm
Cyprus	OEL TWA	2,2 mg/m <sup>3</sup>
Cyprus	OEL TWA [ppm]	1 ppm
Czech Republic	PEL (OEL TWA)	10 mg/m <sup>3</sup>
Denmark	OEL TWA [1]	2,2 mg/m <sup>3</sup>

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1,3-Butadiene (106-99-0)		
Denmark	OEL TWA [2]	1 ppm
Estonia	OEL TWA	1 mg/m <sup>3</sup>
Estonia	OEL TWA [ppm]	0,5 ppm
Estonia	OEL STEL	10 mg/m <sup>3</sup>
Estonia	OEL STEL [ppm]	5 ppm
Finland	HTP (OEL TWA) [1]	2,2 mg/m <sup>3</sup> (Annex 3)
Finland	HTP (OEL TWA) [2]	1 ppm (Annex 3)
Germany	Occupational exposure limit value (mg/m <sup>3</sup> ) (TRGS900)	0,5 - 5 mg/m <sup>3</sup>
Germany	Occupational exposure limit value (ppm) (TRGS900)	0,2 - 2 ppm
Germany	TRGS 910: Risk-related concept of measures for activities involving carcinogenic hazardous substances : 0,5 - 5 mg/m <sup>3</sup> & 0,2 - 2 ppm	
Greece	OEL TWA	2,2 mg/m <sup>3</sup>
Greece	OEL TWA [ppm]	1 ppm
Hungary	AK (OEL TWA)	2,2 mg/m <sup>3</sup>
Ireland	OEL TWA [1]	2,2 mg/m <sup>3</sup>
Ireland	OEL TWA [2]	1 ppm
Ireland	OEL STEL	6,6 mg/m <sup>3</sup> (calculated)
Ireland	OEL STEL [ppm]	3 ppm (calculated)
Italy	OEL TWA	2,2 mg/m <sup>3</sup>
Italy	OEL TWA [ppm]	1 ppm
Latvia	OEL TWA	2,2 mg/m <sup>3</sup>
Latvia	OEL TWA [ppm]	1 ppm
Lithuania	IPRV (OEL TWA)	1 mg/m <sup>3</sup>
Lithuania	IPRV (OEL TWA) [ppm]	0,5 ppm
Lithuania	TPRV (OEL STEL)	10 mg/m <sup>3</sup>
Lithuania	TPRV (OEL STEL) [ppm]	5 ppm
Netherlands	TGG-8u (OEL TWA)	2 mg/m <sup>3</sup>
Poland	NDS (OEL TWA)	2,2 mg/m <sup>3</sup>
Portugal	OEL TWA	2,2 mg/m <sup>3</sup>
Portugal	OEL TWA [ppm]	1 ppm
Romania	OEL TWA	22 mg/m <sup>3</sup>
Romania	OEL TWA [ppm]	10 ppm
Slovenia	OEL TWA	2,2 mg/m <sup>3</sup>
Slovenia	OEL TWA [ppm]	1 ppm
Spain	VLA-ED (OEL TWA) [1]	2,2 mg/m <sup>3</sup> (manufacturing, commercialization and use restrictions according to REACH)
Spain	VLA-ED (OEL TWA) [2]	1 ppm (manufacturing, commercialization and use restrictions according to REACH)
Sweden	NGV (OEL TWA)	1 mg/m <sup>3</sup>

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<b>1,3-Butadiene (106-99-0)</b>		
Sweden	NGV (OEL TWA) [ppm]	0,5 ppm
Sweden	KTV (OEL STEL)	10 mg/m <sup>3</sup>
Sweden	KTV (OEL STEL) [ppm]	5 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	2,2 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	1 ppm
United Kingdom	WEL STEL (OEL STEL)	6,6 mg/m <sup>3</sup> (calculated)
United Kingdom	WEL STEL (OEL STEL) [ppm]	3 ppm (calculated)
Norway	Grenseverdi (OEL TWA) [1]	2,2 mg/m <sup>3</sup>
Norway	Grenseverdi (OEL TWA) [2]	1 ppm
Norway	Korttidsverdi (OEL STEL)	4,4 mg/m <sup>3</sup> (value calculated)
Norway	Korttidsverdi (OEL STEL) [ppm]	3 ppm (value calculated)
Switzerland	MAK (OEL TWA) [1]	4,4 mg/m <sup>3</sup>
Switzerland	MAK (OEL TWA) [2]	2 ppm
Australia	OES TWA [1]	22 mg/m <sup>3</sup>
Australia	OES TWA [2]	10 ppm
Canada (Quebec)	VEMP (OEL TWA)	4,4 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (OEL TWA) [ppm]	2 ppm
USA - ACGIH	ACGIH OEL TWA [ppm]	2 ppm
USA - IDLH	IDLH [ppm]	2000 ppm (10% LEL)
USA - OSHA	OSHA PEL TWA [2]	1 ppm (Butadiene)
USA - OSHA	OSHA PEL STEL [2]	5 ppm (see 29 CFR 1910.1051)
<b>Petroleum gas; Petroleum gases, liquefied (&lt; 0,1% butadiene) (68476-85-7)</b>		
Belgium	OEL TWA	1826 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	1000 ppm
Croatia	GVI (OEL TWA) [1]	1750 mg/m <sup>3</sup> (applies if not containing >=0.1% 1,3-Butadiene)
Croatia	GVI (OEL TWA) [2]	1000 ppm (applies if not containing >=0.1% 1,3-Butadiene)
Croatia	KGVI (OEL STEL)	2180 mg/m <sup>3</sup> (applies if not containing >=0.1% 1,3-Butadiene)
Croatia	KGVI (OEL STEL) [ppm]	1250 ppm (applies if not containing >=0.1% 1,3-Butadiene)
Czech Republic	PEL (OEL TWA)	1800 mg/m <sup>3</sup> (in original source under this CAS number Propan-butan (LPG))
Greece	OEL TWA	2250 mg/m <sup>3</sup>
Greece	OEL TWA [ppm]	1250 ppm
Greece	OEL STEL	2250 mg/m <sup>3</sup>
Greece	OEL STEL [ppm]	1250 ppm
Portugal	OEL TWA [ppm]	1000 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	1750 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	1000 ppm
United Kingdom	WEL STEL (OEL STEL)	2180 mg/m <sup>3</sup>
United Kingdom	WEL STEL (OEL STEL) [ppm]	1250 ppm
Australia	OES TWA [1]	1800 mg/m <sup>3</sup>

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Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene) (68476-85-7)		
Australia	OES TWA [2]	1000 ppm
Canada (Quebec)	VEMP (OEL TWA)	1800 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (OEL TWA) [ppm]	1000 ppm
USA - IDLH	IDLH [ppm]	2000 ppm
USA - NIOSH	NIOSH REL TWA	1800 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL TWA [ppm]	1000 ppm
USA - OSHA	OSHA PEL TWA [1]	1800 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL TWA [2]	1000 ppm

Additional information : Personal air monitoring. Room air monitoring

## 8.2. Exposure controls


Engineering measure(s)	: Closed system. Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Take precautionary measures against static discharge. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Use only explosion-proof equipment. 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 suitable gloves. Suitable material: cold insulating gloves. 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	: During splash contact: Use suitable eye protection (EN166): face shield
Body protection	: Wear suitable protective clothing. Overalls, apron and boots recommended.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. full face mask (DIN EN 136). Filter type: ABEK (EN 14387). 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.
Thermal hazard protection	: cold insulating gloves (EN 511). 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
Appearance	: Gas.
Colour	: Colourless.
Odour	: Characteristic.
Odour threshold	: No data available
pH	: Not applicable



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Relative evaporation rate (butylacetate=1)	: No data available
Melting / freezing point	: < -138 °C literature value
Freezing point	: No data available
Initial boiling point and boiling range	: -165 – -0,5 °C literature value
Flash point	: < -56 °C literature value
Auto-ignition temperature	: 287 – 540 °C literature value
Decomposition temperature	: No data available
Flammability	: Extremely flammable gas.
Vapour pressure	: ≤ 1550 kPa (40°C)
Vapour density	: > 1,5 (Air = 1.0)
Relative density	: 0,56 g/cm <sup>3</sup> (SRPS EN ISO 8973)
Solubility	: Soluble in organic solvents. Water: 0,024 – 0,061 g/l at 20 °C
Partition coefficient n-octanol/water	: ≤ 2,8
Kinematic viscosity	: No additional information available
Dynamic viscosity	: No data available
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: 1,9 – 5,3 vol % literature value 8,5 – 15 vol % literature value
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: 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**

Gas group : Compressed gas


## **SECTION 10: Stability and reactivity**

### **10.1. Reactivity**

Extremely flammable gas. Reference to other sections 10.4 & 10.5.

### **10.2. Chemical stability**

Stable under normal conditions.

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### 10.3. Possibility of hazardous reactions

Reacts vigorously with strong oxidizers and acids. Vapours may form explosive mixture with air. Reference to other sections 10.4 & 10.5.

### 10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight. See Section 7 for information on safe handling.

### 10.5. Incompatible materials

Strong oxidizing agents. See Section 7 for information on safe handling.

### 10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. 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 : Not classified (Based on available data, the classification criteria are not met)

1,3-Butadiene (106-99-0)	
LD50/oral/rat	5480 mg/kg
LC50/inhalation/4h/rat	285 g/m <sup>3</sup> (Exposure time: 4h)
LC50/inhalation/4h/rat (ppm)	12800 ppm/4h Gas
LC50 Inhalation - Rat (Vapours)	285 mg/l/4h

Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene) (68476-85-7)	
LC50/inhalation/4h/rat	658 mg/l

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)  
pH: Not applicable

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)  
pH: Not applicable

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)

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)

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

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)


Propane - Butane Mixture (68476-85-7)	
Kinematic viscosity	No additional information available

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

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is 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

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### 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 : Ecological injuries are not known or expected under normal use.

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

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

#### 1,3-Butadiene (106-99-0)

EC50 - Other aquatic organisms [1]	24- 33 mg/l Invertebrates.
------------------------------------	----------------------------

ErC50 algae	11- 33 mg/l algae
-------------	-------------------

#### Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene) (68476-85-7)

LC50 - Fish [1]	> 24,11 mg/l
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EC50 - Crustacea [1]	> 14,22 mg/l
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ErC50 algae	> 7,71 mg/l
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### 12.2. Persistence and degradability

#### Propane - Butane Mixture (68476-85-7)

Persistence and degradability	Readily biodegradable.
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### 12.3. Bioaccumulative potential

#### Propane - Butane Mixture (68476-85-7)

Partition coefficient n-octanol/water	≤ 2,8
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Bioaccumulative potential	No additional information available.
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#### 1,3-Butadiene (106-99-0)

BCF - Fish [1]	13 – 19,1
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Partition coefficient n-octanol/water	1,99 (at 25 °C (at pH 7)
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#### Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene) (68476-85-7)


Partition coefficient n-octanol/water	≤ 2,8
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### 12.4. Mobility in soil

#### Propane - Butane Mixture (68476-85-7)

Mobility in soil	No data available
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Ecology - soil	No data available.
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### 12.5. Results of PBT and vPvB assessment

Propane - Butane Mixture (68476-85-7)	
Results of PBT assessment	Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is 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

### 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. 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
<b>14.1. UN number</b>				
1965	1965	1965	1965	1965
<b>14.2. UN proper shipping name</b>				
HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene))	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene))	Hydrocarbon gas mixture, liquefied, n.o.s. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene))	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene))	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene))
<b>Transport document description</b>				
UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)), 2.1, (B/D)	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)), 2.1	UN 1965 Hydrocarbon gas mixture, liquefied, n.o.s. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)), 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)), 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)), 2.1


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ADR	IMDG	IATA	ADN	RID
<b>14.3. Transport hazard class(es)</b>				
2.1	2.1	2.1	2.1	2.1
				
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
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 :   
 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

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Tank instructions (IMDG) : T50  
 EmS-No. (Fire) : F-D  
 EmS-No. (Spillage) : S-U  
 Stowage category (IMDG) : E  
 Stowage and handling (IMDG) : SW2  
 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

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#### 14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : No data available.

### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

40. 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.	1,3-Butadiene ; Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)
28. Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.	1,3-Butadiene ; Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)
29. Substances which are classified as germ cell mutagen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 3 or Appendix 4, respectively.	1,3-Butadiene ; Petroleum gas; Petroleum gases, liquefied (< 0,1% butadiene)

Propane - Butane Mixture is not on the REACH Candidate List

Propane - Butane Mixture is not on the REACH Annex XIV List

##### 15.1.2. National regulations

###### France

No ICPE	Installations classées Désignation de la rubrique	Code Régime	Rayon
4718.text	Gaz inflammables liquéfiés de catégorie 1 et 2 (y compris GPL) et gaz naturel (y compris biogaz affiné, lorsqu'il a été traité conformément aux normes applicables en matière de biogaz purifié et affiné, en assurant une qualité équivalente à celle du gaz naturel, y compris pour ce qui est de la teneur en méthane, et qu'il a une teneur maximale de 1 % en oxygène). 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 :		
4718.1	1. Supérieure ou égale à 50 t Quantité seuil bas au sens de l'article R. 511-10 : 50 t. Quantité seuil haut au sens de l'article R. 511-10 : 200 t.	A	1
4718.2	2. Supérieure ou égale à 6 t mais inférieure à 50 t Quantité seuil bas au sens de l'article R. 511-10 : 50 t. Quantité seuil haut au sens de l'article R. 511-10 : 200 t.	DC	1

###### Germany


Regulatory reference : WGK 1, Slightly hazardous to water

German storage class (LGK) : LGK 2A - Gases (except aerosol dispensers and lighters)

Hazardous Incident Ordinance (12. BlmSchV) : Listed in the 12. BlmSchV (Annex I) under: 1.2.2

Quantity threshold for operational area under § 1 para. 1

- Sentence 1: 10000 kg
- Sentence 2: 50000 kg

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#### Netherlands

Waterbezwaarlijkheid	: B (4) - Weinig schadelijk voor in het water levende organismen
SZW-lijst van kankerverwekkende stoffen	: The substance is not listed
SZW-lijst van mutagene stoffen	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	: The substance is not listed

#### Denmark

Class for fire hazard	: Class I-1
Store unit	: 1 liter
Classification remarks	: F+ <Flam. Gas 1A; Press. Gas (Liq.)>; Emergency management guidelines for the storage of flammable liquids must be followed
Recommendations Danish Regulation	: Young people below the age of 18 years are not allowed to use the product

#### 15.2. Chemical safety assessment


For this substance a chemical safety assessment has not been carried out

#### SECTION 16: Other information

Indication of changes:

1.1	Synonyms	Added	
1.2	Main use category	Added	
1.3	Company	Modified	
2.3	ED text	Added	
4.3	Indication of any immediate medical attention and special treatment needed	Added	
7.2	Heat and ignition sources	Added	
7.2	Special rules on packaging	Added	
7.3	Specific end use(s)	Added	
9.2	Information with regard to physical hazard classes	Added	
9.2	Other safety characteristics	Added	
10.4	Conditions to avoid	Modified	
11.2	Adverse health effects caused by endocrine disrupting properties	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
14.7	Maritime transport in bulk according to IMO	Added	



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	instruments		
15.1	Installations classées	Added	
15.1	12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	Added	
15.1	Waterbezwaarlijkheid	Added	

Abbreviations and acronyms:


	DNEL = Derived No Effect Level
	DMEL = Derived Minimal Effect level
	PNEC = Predicted No Effect Concentration
	OEL-STEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	TWA = time weighted average
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal 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
	NOEL = no-observed-effect level
	NOEC = No observed effect concentration
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	EWC = European waste catalogue
	NA = Not applicable
	N.O.S. = Not Otherwise Specified
	VOC = Volatile organic compounds
	mg/kg BW = mg/kg bodyweight
	QSAR = Quantitative structure-activity relationship (QSAR)
	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
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)
	ABM = Algemene beoordelingsmethodiek
	BTT = Breakthrough time (maximum wearing time)
	NOEL: no-observed-effect level
	STOT = Specific Target Organ Toxicity

Sources of key data used to compile the : European Chemicals Bureau SDS provided by supplier. datasheet

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

Full text of H- and EUH-statements:

Carc. 1A	Carcinogenicity, Category 1A
Flam. Gas 1A	Flammable gases, Category 1A

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H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H340	May cause genetic defects.
H350	May cause cancer.
Muta. 1B	Germ cell mutagenicity, Category 1B
Press. Gas (Liq.)	Gases under pressure : Liquefied gas

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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