

Page 1 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 24.03.2022 / 0003
Replacing version dated / version: 01.11.2021 / 0002
Valid from: 24.03.2022
PDF print date: 24.03.2022
Butane/Isobutane
9120000991 / GA0227

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Butane/Isobutane
9120000991 / GA0227

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

Relevant identified uses of the substance or mixture:

Cartridge

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

GB

Dometic UK Awnings
Little Braxted Hall, Little Braxted, Witham
GB- CM8 3EU Essex
Tel.: +44 (0) 1376 500111

Dometic Germany GmbH
Hollefeldstr. 63
48282 Emsdetten
Tel.: +49 (0) 2572 879 0

IRL

Dometic UK Awnings
Little Braxted Hall, Little Braxted, Witham
GB- CM8 3EU Essex
Tel.: +44 (0) 1376 500111

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

IRL

National Poisons Information Centre, Beaumont Hospital, Dublin 9, Ireland, Tel.:
+353 (0)1 809 2166 (Public Poisons Info Line, 8am-10pm, 7 days a week)
+353 (0)1 809 2566 (Info for Healthcare Professionals ONLY, 24 h, 7 days a week)

Telephone number of the company in case of emergencies:

+44 (0) 1376 500111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Flam. Gas	1A	H220-Extremely flammable gas.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 24.03.2022 / 0003
 Replacing version dated / version: 01.11.2021 / 0002
 Valid from: 24.03.2022
 PDF print date: 24.03.2022
 Butane/Isobutane
 9120000991 / GA0227

Press. Gas (Liq.) H280-Contains gas under pressure, may explode if heated.

2.2 Label elements
Labeling according to Regulation (EC) 1272/2008 (CLP)



Danger

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

P102-Keep out of reach of children.
 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.

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
 The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
 The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

---	---
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	---
content %	
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	---

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aiders should ensure they are protected!
 Never pour anything into the mouth of an unconscious person!

Inhalation

Page 3 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 24.03.2022 / 0003
Replacing version dated / version: 01.11.2021 / 0002
Valid from: 24.03.2022
PDF print date: 24.03.2022
Butane/Isobutane
9120000991 / GA0227

Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.
If the person is unconscious, place in a stable side position and consult a doctor.
Respiratory arrest - Artificial respiration apparatus necessary.

Skin contact

Normally not irritating to skin.
In contact with liquefied gas:
Wash in water.
Do not rub.
Cover frostbite aseptically.

Eye contact

Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

Ingestion

Typically no exposure pathway.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

The following may occur:

Irritation of the respiratory tract
Nausea
Headaches
Effect on the central nervous system
Coordination disorders
Narcotic effect.
Unconsciousness
Respiratory distress
Asphyxia
Death
In contact with liquefied gas:
Frostbite

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

CO2
Foam
Extinction powder

Do not extinguish entirely until the escape of gas has been completely stopped.

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon
Danger of bursting (explosion) when heated
Possible build up of explosive/highly flammable vapour/air mixture.

5.3 Advice for firefighters

For personal protective equipment see Section 8.
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
Cool container at risk with water.
Dispose of contaminated extinction water according to official regulations.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 24.03.2022 / 0003

Replacing version dated / version: 01.11.2021 / 0002

Valid from: 24.03.2022

PDF print date: 24.03.2022

Butane/Isobutane

9120000991 / GA0227

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.

Ensure sufficient ventilation, remove sources of ignition.

Avoid dust formation with solid or powder products.

Leave the danger zone if possible, use existing emergency plans if necessary.

Keep non-essential personnel away.

Remove possible causes of ignition - do not smoke.

Ensure sufficient supply of air.

If a tank is leaking, let the gas escape into the atmosphere.

Search for leaks using soapy water, never with an ignition source.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

6.2 Environmental precautions

Prevent penetration into drains, cellars, working pits or other places in which accumulation could be hazardous.

6.3 Methods and material for containment and cleaning up

If spray or gas escapes, ensure ample fresh air is available.

Without adequate ventilation, formation of explosive mixtures may be possible.

Allow to evaporate.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.

Keep away from sources of ignition - Do not smoke.

Take measures against electrostatic charging, if appropriate.

Do not use on hot surfaces.

Handle and open container with care.

Only use equipment that is suitable for this product and the intended pressure and temperature.

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

Observe directions on label and instructions for use.

Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.

Not to be stored in gangways or stair wells.

Do not store with flammable or self-igniting materials.

Observe special storage conditions.

Observe special regulations for gases.

Keep protected from direct sunlight and temperatures over 50°C.

Store in a well-ventilated place.

Store cool.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 24.03.2022 / 0003

Replacing version dated / version: 01.11.2021 / 0002

Valid from: 24.03.2022

PDF print date: 24.03.2022

Butane/Isobutane

9120000991 / GA0227

8.1 Control parameters

(GB)	Chemical Name	Butane	Content %:
	WEL-TWA: 600 ppm (1450 mg/m ³)	WEL-STEL: 750 ppm (1810 mg/m ³)	---
	Monitoring procedures:	- Compur - KITA-221 SA (549 459) - OSHA PV2010 (n-Butane) - 1993	
	BMGV: ---	Other information: ---	
(IRL)	Chemical Name	Butane	Content %:
	OELV-8h: ---	OELV-15min: 1000 ppm	---
	Monitoring procedures:	- Compur - KITA-221 SA (549 459) - OSHA PV2010 (n-Butane) - 1993	
	BLV: ---	Other information: ---	
(GB)	Chemical Name	Propane	Content %:
	WEL-TWA: 1000 ppm (ACGIH)	WEL-STEL: ---	---
	Monitoring procedures:	- Compur - KITA-125 SA (549 954) - OSHA PV2077 (Propane) - 1990	
	BMGV: ---	Other information: ---	
(GB)	Chemical Name	Isobutane	Content %:
	WEL-TWA: 1000 ppm (EX) (ACGIH)	WEL-STEL: ---	---
	Monitoring procedures:	- Compur - KITA-113 SB(C) (549 368)	
	BMGV: ---	Other information: ---	
(IRL)	Chemical Name	Isobutane	Content %:
	OELV-8h: ---	OELV-15min: 1000 ppm	---
	Monitoring procedures:	- Compur - KITA-113 SB(C) (549 368)	
	BLV: ---	Other information: ---	
(IRL)	Chemical Name	But-1-ene	Content %:
	OELV-8h: 250 ppm	OELV-15min: ---	---
	Monitoring procedures:	- Draeger - Olefine 0,05%/a Butylene (CH 31 201) - Draeger - Olefine 0,05%/a Propylene (CH 31 201)	
	BLV: ---	Other information: ---	
(IRL)	Chemical Name	Butene, mixed-1-and-2-isomers	Content %:
	OELV-8h: 250 ppm	OELV-15min: ---	---
	Monitoring procedures:	- Draeger - Olefine 0,05%/a Butylene (CH 31 201) - Draeger - Olefine 0,05%/a Propylene (CH 31 201)	
	BLV: ---	Other information: ---	

Propene						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	1,38	mg/l	
	Environment - marine		PNEC	1,38	mg/l	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	860	mg/m ³	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	860	mg/m ³	

(GB) WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period)

EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).

(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).

Page 6 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 24.03.2022 / 0003
Replacing version dated / version: 01.11.2021 / 0002
Valid from: 24.03.2022
PDF print date: 24.03.2022
Butane/Isobutane
9120000991 / GA0227

(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

IRL OELV-8h = Occupational Exposure Limit Value (8-hour reference period). (IFV) = Inhalable Fraction and Vapour. (I) = Inhalable Fraction. (R) = Respirable Fraction.

(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). |

OELV-15min = Occupational Exposure Limit Value (15-minute reference period). (IFV) = Inhalable Fraction and Vapour. (I) = Inhalable Fraction. (R) = Respirable Fraction.

(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). |

BLV = Biological limit value |

Other information: Carc1A, Carc1B = carcinogenic substance, Cat. 1A or 1B. Muta1A, Muta1B = mutagenic substance, Cat. 1A or 1B. Repr1A, Repr1B = Substances known to be toxic for reproduction, Cat. 1A or 1B. Sk = can be absorbed through skin. Asphx = asphyxiant. Sen = Respiratory sensitizer. BOELV = Binding Occupational Exposure Limit Values. IOELV = Indicative Occupational Exposure Limit Values.

(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. EN 14042.

EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Protective goggles (EN 166)

Skin protection - Hand protection:

Normally not necessary.

If applicable

Protective nitrile gloves (EN ISO 374).

Minimum layer thickness in mm:

0,4

Permeation time (penetration time) in minutes:

> 480

The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.

The recommended maximum wearing time is 50% of breakthrough time.

Protective hand cream recommended.

In contact with liquefied gas:

Insulating gloves EN 511 (cold).

Page 7 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 24.03.2022 / 0003
Replacing version dated / version: 01.11.2021 / 0002
Valid from: 24.03.2022
PDF print date: 24.03.2022
Butane/Isobutane
9120000991 / GA0227

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
Normally not necessary.
If OES or MEL is exceeded.
Gas mask filter AX (EN 14387), code colour brown.
At high concentrations:
Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138)
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquefied gas
Colour:	Colourless
Odour:	Characteristic
Melting point/freezing point:	Does not apply to gases.
Boiling point or initial boiling point and boiling range:	<2 °C
Flammability:	Flammable
Lower explosion limit:	1,9 Vol-% (21°C)
Upper explosion limit:	8,5 Vol-% (21°C)
Flash point:	-60 °C
Auto-ignition temperature:	405
Decomposition temperature:	There is no information available on this parameter.
pH:	Mixture is non-soluble (in water).
Kinematic viscosity:	Does not apply to gases.
Solubility:	Insoluble
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	There is no information available on this parameter.
Density and/or relative density:	Does not apply to gases.
Relative vapour density:	>1
Particle characteristics:	Does not apply to gases.

9.2 Other information

Explosives:	When using: development of explosive vapour/air mixture possible.
Oxidising gases:	No

SECTION 10: Stability and reactivity

10.1 Reactivity

Not to be expected

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Heating, open flame, ignition sources

Pressure increase will result in danger of bursting.

10.5 Incompatible materials

Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

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

Possibly more information on health effects, see Section 2.1 (classification).

Butane/Isobutane 9120000991 / GA0227						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Butane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Human being	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Rat	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Aspiration hazard:						No

Page 9 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 24.03.2022 / 0003
 Replacing version dated / version: 01.11.2021 / 0002
 Valid from: 24.03.2022
 PDF print date: 24.03.2022
 Butane/Isobutane
 9120000991 / GA0227

Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEC	21,394	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	
Symptoms:						ataxia, breathing difficulties, drowsiness, unconsciousness, frostbite, disturbed heart rhythm, headaches, cramps, intoxication, dizziness, nausea and vomiting.

Propane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Acute toxicity, by inhalation:	LC50	260000	ppmV/4h	Rat		Gasses, Male, Analogous conclusion
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity (Developmental toxicity):	NOAEC	21,641	mg/l		OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	
Aspiration hazard:						No
Symptoms:						breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting.

Page 10 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 24.03.2022 / 0003
 Replacing version dated / version: 01.11.2021 / 0002
 Valid from: 24.03.2022
 PDF print date: 24.03.2022
 Butane/Isobutane
 9120000991 / GA0227

Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	7,214	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	LOAEL	21,641	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	

Isobutane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Acute toxicity, by inhalation:	LC50	260000	ppmV/4h	Rat		Gasses, Male
Serious eye damage/irritation:				Rabbit		Not irritant
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No
Symptoms:						unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting.
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	21,394	mg/l	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Development. Tox. Screening Test)	

11.2. Information on other hazards

Butane/Isobutane 9120000991 / GA0227						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

Butane/Isobutane 9120000991 / GA0227						
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Page 11 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 24.03.2022 / 0003
 Replacing version dated / version: 01.11.2021 / 0002
 Valid from: 24.03.2022
 PDF print date: 24.03.2022
 Butane/Isobutane
 9120000991 / GA0227

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Endocrine disrupting properties:							Does not apply to mixtures.
12.7. Other adverse effects:							No information available on other adverse effects on the environment.

Butane							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	24,11	mg/l		QSAR	
12.1. Toxicity to daphnia:	LC50	48h	14,22	mg/l		QSAR	
12.3. Bioaccumulative potential:	Log Pow		2,98				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Propane							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.3. Bioaccumulative potential:	Log Pow		2,28				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Isobutane							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.3. Bioaccumulative potential:							A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.1. Toxicity to fish:	LC50	96h	27,98	mg/l			
12.1. Toxicity to algae:	EC50	96h	7,71	mg/l			
12.2. Persistence and degradability:							Readily biodegradable

Page 12 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 24.03.2022 / 0003
 Replacing version dated / version: 01.11.2021 / 0002
 Valid from: 24.03.2022
 PDF print date: 24.03.2022
 Butane/Isobutane
 9120000991 / GA0227

12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
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SECTION 13: Disposal considerations

13.1 Waste treatment methods
For the substance / mixture / residual amounts

EC disposal code no.:
 The waste codes are recommendations based on the scheduled use of this product.
 Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
 16 05 04 gases in pressure containers (including halons) containing hazardous substances
 Recommendation:
 Sewage disposal shall be discouraged.
 Pay attention to local and national official regulations.
 Burn unused gas using a suitable burner with flame backfire protection.

For contaminated packing material
 Pay attention to local and national official regulations.
 Recycling
 Do not perforate, cut up or weld uncleaned container.
 Residues may present a risk of explosion.
 15 01 04 metallic packaging

SECTION 14: Transport information

General statements

14.1. UN number or ID number: 2037

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name: UN 2037 RECEPTACLES, SMALL, CONTAINING GAS
 14.3. Transport hazard class(es): 2.1
 14.4. Packing group: -
 Classification code: 5F
 LQ: 1 L
 14.5. Environmental hazards: Not applicable
 Tunnel restriction code: D



Transport by sea (IMDG-code)

14.2. UN proper shipping name: RECEPTACLES, SMALL, CONTAINING GAS
 14.3. Transport hazard class(es): 2.1
 14.4. Packing group: -
 EmS: F-D, S-U
 Marine Pollutant: n.a
 14.5. Environmental hazards: Not applicable



Transport by air (IATA)

14.2. UN proper shipping name: Receptacles, small, containing gas
 14.3. Transport hazard class(es): 2.1
 14.4. Packing group: -
 14.5. Environmental hazards: Not applicable



14.6. Special precautions for user

Persons employed in transporting dangerous goods must be trained.
 All persons involved in transporting must observe safety regulations.
 Precautions must be taken to prevent damage.

14.7. Maritime transport in bulk according to IMO instruments

Page 13 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 24.03.2022 / 0003
 Replacing version dated / version: 01.11.2021 / 0002
 Valid from: 24.03.2022
 PDF print date: 24.03.2022
 Butane/Isobutane
 9120000991 / GA0227

Freight as packaged goods rather than in bulk, therefore not applicable.
 Minimum amount regulations have not been taken into account.
 Danger code and packing code on request.
 Comply with special provisions.

SECTION 15: Regulatory information

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

Observe restrictions:
 Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
 Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered according to storage, handling etc.):

Hazard categories	Notes to Annex I	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements
P2		10	50

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 2 - This product contains the substances listed below:

Entry Nr	Dangerous substances	Notes to Annex I	Qualifying quantity (tonnes) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) for the application of - Upper-tier requirements
18	Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas	19	50	200

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2010/75/EU (VOC): 100 %

Observe incident regulations.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 14
 Employee training in handling dangerous goods is required.
 These details refer to the product as it is delivered.
 Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Flam. Gas 1A, H220	Classification based on test data.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 24.03.2022 / 0003

Replacing version dated / version: 01.11.2021 / 0002

Valid from: 24.03.2022

PDF print date: 24.03.2022

Butane/Isobutane

9120000991 / GA0227

Press. Gas (Liq.), H280

Classification based on the form or physical state.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

Flam. Gas — Flammable gases - Flammable gas

Press. Gas (Liq.) — Gases under pressure-Liquefied gas

Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.

Guidelines for the preparation of safety data sheets as amended (ECHA).

Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).

Safety data sheets for the constituent substances.

ECHA Homepage - Information about chemicals.

GESTIS Substance Database (Germany).

German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).

EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.

National Lists of Occupational Exposure Limits for each country as amended.

Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ASTM ASTM International (American Society for Testing and Materials)

ATE Acute Toxicity Estimate

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

BSEF The International Bromine Council

bw body weight

CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

DOC Dissolved organic carbon

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)

EC European Community

ECHA European Chemicals Agency

ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect

EEC European Economic Community

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

EN European Norms

EPA United States Environmental Protection Agency (United States of America)

ErCx, EµCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)

etc. et cetera

EU European Union

EVAL Ethylene-vinyl alcohol copolymer

Page 15 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 24.03.2022 / 0003
Replacing version dated / version: 01.11.2021 / 0002
Valid from: 24.03.2022
PDF print date: 24.03.2022
Butane/Isobutane
9120000991 / GA0227

Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
Koc Adsorption coefficient of organic carbon in the soil
Kow octanol-water partition coefficient
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC (Code) International Bulk Chemical (Code)
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
LC50 Lethal Concentration to 50 % of a test population
LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)
Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
Log Kow, Log Pow Logarithm of octanol-water partition coefficient
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available
NIOSH National Institute for Occupational Safety and Health (USA)
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
OECD Organisation for Economic Co-operation and Development
org. organic
OSHA Occupational Safety and Health Administration (USA)
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
TOC Total organic carbon
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.

These statements were made by:

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