

isobutane 95%

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

1.1 Product identifier:

Product name	: isobutane 95%
Synonyms	: 2-methylpropane; Aeron [®] isobutan; isobutane; isobutane, liquefied, under pressure; propane, 2-methyl-
Registration number REACH	: 01-2119485395-27
Product type REACH	: Substance/mono-constituent
CAS number	: 75-28-5
EC index number	: 601-004-00-0
EC number	: 200-857-2
RTECS number	: TZ4300000
Molecular mass	: 58.12 g/mol
Formula	: C4H10

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

1.2.1 Relevant identified uses

Solvent
Fuel
Chemical raw material
Industrial use

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

CHEMOGAS NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
✉ +32 2 252 17 51
info@chemogas.com

Distributor of the product

CHEMOGAS NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
✉ +32 2 252 17 51
info@chemogas.com

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

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

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

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

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC
F+; R12 - Extremely flammable.

2.2 Label elements:

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



Signal word

Danger

H-statements

H220

Extremely flammable gas.

H280

Contains gas under pressure; may explode if heated.

P-statements

P210

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

P381

Eliminate all ignition sources if safe to do so.

P377

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

P403

Store in a well-ventilated place.

P410 + P403

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

2.3 Other hazards:

CLP

May build up electrostatic charges: risk of ignition

May be ignited by sparks

Gas/vapour spreads at floor level: ignition hazard

Heat may cause pressure rise in tanks/drums: explosion risk

Odour threshold is well above the exposure limit

May cause frostbites

Large spills/in enclosed spaces: risk of oxygen deficiency

Toxic to fishes

Harmful to invertebrates (Daphnia)

Toxic to algae

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
isobutane 01-2119485395-27	75-28-5 200-857-2	C>95 %	F+; R12	Flam. Gas 1; H220 Press. Gas - Liquefied gas; H280	(1)(2)(10)	Constituent
butane	106-97-8 203-448-7	C<5 %	F+; R12	Flam. Gas 1; H220 Press. Gas - Liquefied gas; H280	(1)(2)(10)	Impurity
propane	74-98-6 200-827-9	C<5 %	F+; R12	Flam. Gas 1; H220 Press. Gas - Liquefied gas; H280	(1)(2)(10)	Impurity

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

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

(2) Substance with a Community workplace exposure limit

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

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

After inhalation:

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

After skin contact:

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

After eye contact:

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

After ingestion:

Not applicable.

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

4.2.1 Acute symptoms

After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Headache. Nausea. Central nervous system depression. Dizziness. Narcosis. Coordination disorders. Disturbed motor response. Disturbances of consciousness. Respiratory difficulties.

After skin contact:

Frostbites.

After eye contact:

Redness of the eye tissue. Frostbites. Lacrimation.

After ingestion:

Not applicable.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Preferably: BC powder. Water spray. Polyvalent foam. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: CO and CO₂ are formed. On heating: release of harmful/irritant gases/vapours.

5.3 Advice for firefighters:

5.3.1 Instructions:

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

5.3.2 Special protective equipment for fire-fighters:

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

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

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

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

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

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

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6.3 Methods and material for containment and cleaning up:

Prevent evaporation by covering with: foam. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

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

7.1 Precautions for safe handling:

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

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: < 50 °C. Store in a cool area. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Under a shelter/in the open. Aboveground. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, combustible materials, oxidizing agents, (strong) acids, (strong) bases, highly flammable materials, peroxides, halogens.

7.2.3 Suitable packaging material:

Steel, stainless steel, monel steel, aluminium, copper.

7.2.4 Non suitable packaging material:

No data available

7.3 Specific end use(s):

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

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

The Netherlands

n-Butaan	Time-weighted average exposure limit 8 h (Private occupational exposure limit value)	592 ppm	
	Time-weighted average exposure limit 8 h (Private occupational exposure limit value)	1430 mg/m ³	

Belgium

Hydrocarbures aliphatiques sous forme gazeuse : (Alcanes C1-C4)	Time-weighted average exposure limit 8 h	1000 ppm	
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USA (TLV-ACGIH)

Butane, all isomers	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	1000 ppm	
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Germany

Butan	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm	
	Time-weighted average exposure limit 8 h (TRGS 900)	2400 mg/m ³	
Isobutan	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm	
	Time-weighted average exposure limit 8 h (TRGS 900)	2400 mg/m ³	
Propan	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm	
	Time-weighted average exposure limit 8 h (TRGS 900)	1800 mg/m ³	

France

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n-Butane	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	800 ppm	
	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	1900 mg/m ³	

UK

Butane	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	600 ppm	
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1450 mg/m ³	
	Short time value (Workplace exposure limit (EH40/2005))	750 ppm	
	Short time value (Workplace exposure limit (EH40/2005))	1810 mg/m ³	

b) National biological limit values

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

8.1.2 Sampling methods

If applicable and available it will be listed below.

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

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

8.1.4 DNEL/PNEC values

If applicable and available it will be listed below.

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

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

8.2.1 Appropriate engineering controls

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

8.2.2 Individual protection measures, such as personal protective equipment

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

a) Respiratory protection:

High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Insulated gloves.

- materials (good resistance)

Neoprene, polyurethane, leather.

c) Eye protection:

Protective goggles.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Liquefied gas
Odour	Odourless
Odour threshold	Not applicable
Colour	Colourless
Particle size	Not applicable (gas)
Explosion limits	1.8 - 8.5 vol %
Flammability	Extremely flammable gas.
Log Kow	2.76 - 2.88 ; Experimental value
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	-11.7 °C
Flash point	-81 °C
Evaporation rate	No data available

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Relative vapour density	No data available
Vapour pressure	2200 hPa ; 20 °C
Solubility	water ; <0.01 g/100 ml ; 20 °C
	ethanol ; soluble
	ether ; soluble
	chloroform ; soluble
Relative density	0.56 ; 20 °C
Decomposition temperature	No data available
Auto-ignition temperature	460 °C
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

9.2 Other information:

Absolute density	560 kg/m ³ ; 20 °C
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SECTION 10: Stability and reactivity

10.1 Reactivity:

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

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

Reacts with (strong) oxidizers: (increased) risk of fire/explosion.

10.4 Conditions to avoid:

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

10.5 Incompatible materials:

Combustible materials, oxidizing agents, (strong) acids, (strong) bases, highly flammable materials, peroxides, halogens.

10.6 Hazardous decomposition products:

Upon combustion: CO and CO₂ are formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

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No (test) data available

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Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral						Data waiving	
Dermal						Data waiving	
Inhalation (gases)	LC50		1443 mg/l	15 minutes	Rat (male/female)	Experimental value	
Inhalation (gases)	LC50	Other	520400 ppm	2 h	Mouse (male)	Experimental value	
Inhalation (gases)	LC50	Other	1237 mg/l	2 h	Mouse (male)	Experimental value	

As the substance is a gas, inhalation is the most appropriate route of exposure

Conclusion

Low acute toxicity by the inhalation route

Corrosion/irritation

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No (test) data available

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Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye						Data waiving	
Skin						Data waiving	

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The liquid form can cause frostbites, typical for all liquified gases

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

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No (test) data available

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Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin						Data waiving	
Inhalation (gases)						Data waiving	

The study on skin sensitisation does not need to be conducted as the substance is a gas

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

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No (test) data available

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Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral								Data waiving
Dermal								Data waiving
Inhalation (gases)	NOAEC systemic effects	OECD 422	9000 ppm		No effect	6 weeks (6h/day, 7 days/week)	Rat (male/female)	Experimental value
Inhalation (gases)	NOAEC systemic effects	OECD 422	21394 mg/m ³ air		No effect	6 weeks (6h/day, 7 days/week)	Rat (male/female)	Experimental value

As the substance is a gas, inhalation is the most appropriate route of exposure

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

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No (test) data available

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Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	OECD 473	Human lymphocytes	No effect	Experimental value
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value

Mutagenicity (in vivo)

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No (test) data available

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Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474	13 weeks (6h/day, 5 days/week)	Rat (male/female)	Bone marrow	Read-across

Carcinogenicity

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No (test) data available

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Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation (gases)						Data waiving		
Dermal						Data waiving		
Oral						Data waiving		

Reproductive toxicity

isobutane 95%

No (test) data available

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	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEC	OECD 422	12000 ppm	6 weeks (6h/day, 7 days/week)	Rat (female)	No effect		Experimental value
	NOAEC	OECD 422	21641 mg/m ³ air	6 weeks (6h/day, 7 days/week)	Rat (female)	No effect		Experimental value
Maternal toxicity	NOAEC	OECD 422	12000 ppm	6 weeks (6h/day, 7 days/week)	Rat (female)	No effect		Experimental value
	NOAEC	OECD 422	21641 mg/m ³ air	6 weeks (6h/day, 7 days/week)	Rat (female)	No effect		Experimental value
Effects on fertility	NOAEC (P/F1)	OECD 422	9000 ppm	6 weeks (6h/day, 7 days/week)	Rat (male/female)	No effect		Experimental value
	NOAEC (P/F1)	OECD 422	21394 mg/m ³ air	6 weeks (6h/day, 7 days/week)	Rat (male/female)	No effect		Experimental value

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

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No (test) data available

Chronic effects from short and long-term exposure

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ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Disturbances of heart rate. Dry/sore throat. Gastrointestinal complaints.

SECTION 12: Ecological information

12.1 Toxicity:

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	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		9.89 mg/l	96 h	Pimephales promelas			QSAR
Acute toxicity invertebrates	LC50		10.67 mg/l	48 h	Daphnia magna			QSAR
Toxicity algae and other aquatic plants	EC0		1.07 mg/l		Algae			QSAR
	EC50		7.15 mg/l	72 h	Algae			QSAR
Long-term toxicity fish	EC0		1.42 mg/l	768 h	Pimephales promelas			QSAR
Long-term toxicity aquatic invertebrates	EC0		0.77 mg/l	504 h	Daphnia magna			QSAR

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	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		9.89 mg/l	96 h	Pimephales promelas			QSAR
	LC50	Other	27.98 mg/l	96 h	Pisces		Fresh water	QSAR
Acute toxicity invertebrates	LC50		10.67 mg/l	48 h	Daphnia magna			QSAR
	LC50		16.33 mg/l	48 h	Daphnia sp.		Fresh water	QSAR
Toxicity algae and other aquatic plants	EC50		7.15 mg/l	72 h	Algae			QSAR
	EC50		8.57 mg/l	96 h	Chlorophyta		Fresh water	QSAR
Long-term toxicity fish	NOEC		1.42 mg/l	768 h	Pimephales promelas			QSAR
Long-term toxicity aquatic invertebrates	NOEC		0.77 mg/l	504 h	Daphnia magna			QSAR

Conclusion

Toxic to fishes

Harmful to invertebrates (Daphnia)

Toxic to algae

Classification concerning the environment: not applicable

12.2 Persistence and degradability:

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Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
Not applicable (gas)			

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Biodegradation water

Method	Value	Duration	Value determination
	72.6 %	35 day(s)	Literature study
	100 %	385.5 h	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
Other	1906 day(s)	5.105 molecule/cm ³	Calculated value

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
			Not applicable (gas)

Conclusion

Inherently biodegradable

Readily biodegradable in water

Biodegradable in the soil

12.3 Bioaccumulative potential:

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BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		20 - 52		Pisces	QSAR

Log Kow

Method	Remark	Value	Temperature	Value determination
		2.76 - 2.88		Experimental value

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BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		20 - 52		Pisces	QSAR

BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF		20 - 52		Daphnia magna	QSAR

Log Kow

Method	Remark	Value	Temperature	Value determination
		2.8	20 °C	Experimental value

Conclusion

Low potential for bioaccumulation (BCF < 500)

12.4 Mobility in soil:

Not applicable (gas)

12.5 Results of PBT and vPvB assessment:

Substance does not meet the criteria of PBT, nor the criteria of vPvB according to Annex XIII of Regulation (EC) No 1907/2006, so is neither PBT nor vPvB.

12.6 Other adverse effects:

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Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

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

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing dangerous substances).

Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

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

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	1965
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14.2 UN proper shipping name:

Proper shipping name	Hydrocarbon gas mixture, liquefied, n.o.s.
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14.3 Transport hazard class(es):

Hazard identification number	23
Class	2
Classification code	2F

14.4 Packing group:

Packing group	
Labels	2.1

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	274
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Special provisions	583
Special provisions	652
Limited quantities	none.

Rail (RID)

14.1 UN number:	
UN number	1965
14.2 UN proper shipping name:	
Proper shipping name	Hydrocarbon gas mixture, liquefied, n.o.s.
14.3 Transport hazard class(es):	
Hazard identification number	23
Class	2
Classification code	2F
14.4 Packing group:	
Packing group	
Labels	2.1 (+13)
14.5 Environmental hazards:	
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	274
Special provisions	583
Special provisions	660
Special provisions	
Limited quantities	none.

Inland waterways (ADN)

14.1 UN number:	
UN number	1965
14.2 UN proper shipping name:	
Proper shipping name	Hydrocarbon gas mixture, liquefied, n.o.s.
14.3 Transport hazard class(es):	
Class	2
Classification code	2F
14.4 Packing group:	
Packing group	
Labels	2.1
14.5 Environmental hazards:	
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	274
Special provisions	583
Special provisions	660
Special provisions	
Limited quantities	none.

Sea (IMDG/IMSBC)

14.1 UN number:	
UN number	1965
14.2 UN proper shipping name:	
Proper shipping name	hydrocarbon gas mixture, liquefied, n.o.s.
14.3 Transport hazard class(es):	
Class	2.1
14.4 Packing group:	
Packing group	
Labels	2.1
14.5 Environmental hazards:	
Marine pollutant	-
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	274
Limited quantities	none.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	
Annex II of MARPOL 73/78	Not applicable

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Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	1965
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14.2 UN proper shipping name:

Proper shipping name	Hydrocarbon gas mixture, liquefied, n.o.s.
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14.3 Transport hazard class(es):

Class	2.1
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14.4 Packing group:

Packing group	
Labels	2.1

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
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14.6 Special precautions for user:

Special provisions	A1
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
100 %	

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
isobutane	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 that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — "whoopee" cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs.2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: "For professional users only".3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

National legislation The Netherlands

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 06
Waterbezwaarlijkheid	6

National legislation Germany

WGK	nwg; Classification non-water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 1)
TA-Luft	5.2.5

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2 Chemical safety assessment:

Reason for revision: ATP4

Publication date: 2013-03-07

Date of revision: 2014-10-24

Reference number: 1250

Revision number: 0100

Product number: 53476

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isobutane 95%

A chemical safety assessment has been performed.

SECTION 16: Other information

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

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

Labels



Extremely flammable

R-phrases

12 Extremely flammable

S-phrases

(02) (Keep out of the reach of children)
09 Keep container in a well-ventilated place
16 Keep away from sources of ignition - No smoking

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

R12 Extremely flammable

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

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

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

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

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