

GC 11

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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Version: 23.1

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

1.1. Product identifier

Product form	Mixture
Name	GC 11
Product code	BU Direct Fastening
Vaporizer	Aerosol

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

1.2.1. Relevant identified uses

Industrial/Professional use spec	For professional use only
Use of the substance/mixture	Gas can for use exclusively with the Hilti GX 100 tool Propellant for direct fastening tools

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier	Department issuing data specification sheet
Hilti SMN doo	Hilti Entwicklungsgesellschaft mbH
11080 Zemun	Hiltistrasse 6
Belgrade - Serbien	86916 Kaufering - Deutschland
T +381 11 6556896 - F +381 11 6556891	T +49 8191 906310 - F +49 8191 90176310
	df-hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +381 11 6556896
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Aerosol 1 H222;H229

Full text of hazard classes and H-statements : see section 16

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

Hazard pictograms (CLP)



GHS02

Signal word (CLP)

Danger

Hazard statements (CLP)

H222 - Extremely flammable aerosol
H229 - Pressurised container: May burst if heated

Precautionary statements (CLP)

P102 - Keep out of reach of children
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P211 - Do not spray on an open flame or other ignition source
P251 - Do not pierce or burn, even after use

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P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Dimethyl ether	(CAS No) 115-10-6 (EC no) 204-065-8 (EC index no) 603-019-00-8	20 - <30	Flam. Gas 1, H220 Compressed gas, H280
propene	(CAS No) 115-07-1 (EC no) 204-062-1 (EC index no) 601-011-00-9	20 - <30	Flam. Gas 1, H220 Compressed gas, H280
Isobutane	(CAS No) 75-28-5 (EC no) 200-857-2 (EC index no) 601-004-00-0	10 - <20	Flam. Gas 1, H220 Compressed gas, H280
ethanol	(CAS No) 64-17-5 (EC no) 200-578-6 (EC index no) 603-002-00-5	10 - <20	Flam. Liq. 2, H225
Propane	(CAS No) 74-98-6 (EC no) 200-827-9 (EC index no) 601-003-00-5	5 - <15	Flam. Gas 1, H220 Compressed gas, H280
Butane	(CAS No) 106-97-8 (EC no) 203-448-7 (EC index no) 601-004-00-0 (REACH-no) 01-2119474691-32	5 - 10	Flam. Gas 1, H220 Compressed gas, H280

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	Remove/Take off immediately all contaminated clothing.
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion	Get immediate medical advice/attention.

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

Symptoms/injuries after inhalation	Shortness of breath.
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4.3. Indication of any immediate medical attention and special treatment needed

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray. Carbon dioxide. Dry powder. Foam. Sand.
 Unsuitable extinguishing media Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard Extremely flammable aerosol.
 Explosion hazard Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
 Hazardous decomposition products in case of fire Formation of toxic gases is possible during heating or in case of fire. Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

5.3. Advice for firefighters

Precautionary measures fire Fight fire remotely due to the risk of explosion.
 Firefighting instructions DO NOT fight fire when fire reaches explosives. Evacuate area.
 Protection during firefighting Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures Evacuate area. No flames, no sparks. Eliminate all sources of ignition.
6.1.1. For non-emergency personnel
 Emergency procedures Ventilate spillage area. Avoid breathing vapours. Evacuate unnecessary personnel.
6.1.2. For emergency responders
 Protective equipment Do not attempt to take action without suitable protective equipment. Breathing apparatus.
 Emergency procedures Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Do not flush with water.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed Hazardous waste due to potential risk of explosion. Pressurized container: Do not pierce or burn, even after use.
 Precautions for safe handling Do not eat, drink or smoke when using this product. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Hygiene measures Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures Proper grounding procedures to avoid static electricity should be followed.
 Storage conditions Keep cool. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. Keep in fireproof place.
 Incompatible materials Heat sources. Direct sunlight.

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Storage temperature 5 - 25 °C
 Heat and ignition sources Keep away from heat and direct sunlight.
 Prohibitions on mixed storage Do not store with DX powder cartridges.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Dimethyl ether (115-10-6)		
EU	Local name	Dimethylether
EU	IOELV TWA (mg/m ³)	1920 mg/m ³
EU	IOELV TWA (ppm)	1000 ppm

8.2. Exposure controls

Appropriate engineering controls Ensure good ventilation of the work station.
 Hand protection In case of repeated or prolonged contact wear gloves

Type	Material	Permeation	Thickness (mm)	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,4	EN 374

Eye protection Chemical goggles or safety glasses. EN 166. EN 170

Type	Use	Characteristics	Standard
Safety glasses	Droplet	clear	EN 166, EN 170

Skin and body protection When using setting tools, sufficient ear protection must be worn



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Gas
 Colour Colourless.
 Odour characteristic.
 Odour threshold No data available
 pH No data available
 Relative evaporation rate (butylacetate=1) No data available
 Melting point No data available
 Freezing point No data available
 Boiling point No data available
 Flash point No data available
 Auto-ignition temperature < 300 °C
 Decomposition temperature No data available
 Flammability (solid, gas) No data available
 Vapour pressure 8300 hPa @ 20°C
 Relative vapour density at 20 °C No data available
 Relative density No data available

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Density	1.02 g/cm ³ (DIN 51757), @20°C
Solubility	Insoluble in water.
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	Product is not explosive. In use may form flammable/explosive vapour-air mixture.
Oxidising properties	No data available
Explosive limits	1.7 vol % 18.6 vol %

9.2. Other information

VOC content	1018.6 mg/l EU-VOC
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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

No additional information available

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat. Sparks. Open flame. Direct sunlight. Overheating.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Not classified
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Dimethyl ether (115-10-6)	
LC50 inhalation rat (mg/l)	309 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	164000 ppm/4h (Rat; Literature study)
propene (115-07-1)	
LC50 inhalation rat (mg/l)	658 mg/l/4h (Rat; Literature)
Isobutane (75-28-5)	
LC50 inhalation rat (mg/l)	> 50 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	11000 ppm
ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit; Literature study)
Propane (74-98-6)	
LC50 inhalation rat (mg/l)	513 mg/l/4h (Rat; Literature)
LC50 inhalation rat (ppm)	280000 ppm/4h (Rat; Literature)
Butane (106-97-8)	
LC50 inhalation rat (mg/l)	658 mg/l/4h (Rat; Literature)
LC50 inhalation rat (ppm)	276000 ppm/4h (Rat; Literature)

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Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified
Aspiration hazard	Not classified

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Vaporizer	Aerosol

SECTION 12: Ecological information

12.1. Toxicity

Dimethyl ether (115-10-6)	
LC50 fish 1	3082 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
EC50 Daphnia 1	756.2 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	> 1000 mg/l (96 h; Pisces)
EC50 Daphnia 2	> 4400 mg/l (48 h; <i>Daphnia magna</i>)
Threshold limit algae 1	154.9 mg/l (96 h; Algae)
propene (115-07-1)	
Threshold limit algae 1	3 - 15, Algae; QSAR
Threshold limit algae 2	10 - 100, Algae; Estimated value
Isobutane (75-28-5)	
Threshold limit algae 1	1.07 mg/l (Algae)
Threshold limit algae 2	7.15 mg/l (72 h; Algae)
ethanol (64-17-5)	
LC50 fish 1	14200 mg/l (96 h; <i>Pimephales promelas</i> ; Nominal concentration)
EC50 Daphnia 1	9300 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	13000 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
EC50 Daphnia 2	10800 mg/l (24 h; <i>Daphnia magna</i>)
Threshold limit other aquatic organisms 1	65 mg/l (72 h; Protozoa)
Threshold limit algae 1	1450 mg/l (192 h; <i>Microcystis aeruginosa</i> ; Growth rate)
Threshold limit algae 2	5000 mg/l (168 h; <i>Scenedesmus quadricauda</i> ; Growth rate)
Propane (74-98-6)	
TLM fish 1	17.8 - 19.7, 96 h; <i>Pimephales promelas</i>
Threshold limit algae 1	1.45 - 4.53, 72 h; Algae
Threshold limit algae 2	8 mg/l (72 h; Algae)
Butane (106-97-8)	
TLM fish 1	1000 mg/l (96 h; Pisces)
Threshold limit other aquatic organisms 1	0.6 - 0.9, 504 h; <i>Daphnia magna</i>
Threshold limit algae 1	0.88 - 1.76, Algae

12.2. Persistence and degradability

Dimethyl ether (115-10-6)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Not applicable (gas).
propene (115-07-1)	
Persistence and degradability	Not readily biodegradable in water. Inherently biodegradable. Biodegradable in the soil. Ozonation in the air. Photodegradation in the air.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
ThOD	3.43 g O ₂ /g substance
BOD (% of ThOD)	(5 day(s)) 0
Isobutane (75-28-5)	
Persistence and degradability	Inherently biodegradable. Biodegradable in the soil. Not applicable (gas).

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ethanol (64-17-5)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O ₂ /g substance
Chemical oxygen demand (COD)	1.70 g O ₂ /g substance
ThOD	2.10 g O ₂ /g substance

Propane (74-98-6)	
Persistence and degradability	Readily biodegradable in water. Not applicable (gas). Photodegradation in the air.

Butane (106-97-8)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

Dimethyl ether (115-10-6)	
Log Pow	0.10 (Experimental value; 0.07; QSAR; KOWWIN; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

propene (115-07-1)	
Log Pow	1.77 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Isobutane (75-28-5)	
BCF fish 1	20 - 52 (Pisces; QSAR)
BCF other aquatic organisms 1	20 - 52 (Daphnia magna; QSAR)
Log Pow	2.8 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

ethanol (64-17-5)	
Log Pow	-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Propane (74-98-6)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Butane (106-97-8)	
Log Pow	2.89 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Dimethyl ether (115-10-6)	
Surface tension	0.020 N/m (-40 °C)

propene (115-07-1)	
Surface tension	0.02 N/m (-50 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

Isobutane (75-28-5)	
Surface tension	0.014 N/m (-10 °C)

ethanol (64-17-5)	
Surface tension	0.0245 N/m (20 °C)

Propane (74-98-6)	
Surface tension	0.016 N/m (-47 °C)

Butane (106-97-8)	
Surface tension	< 0.1 N/m (0 °C)

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations





13.1. Waste treatment methods

Regional legislation (waste)	Disposal must be done according to official regulations.
Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations	Container under pressure. Do not drill or burn even after use.
Additional information	Flammable vapours may accumulate in the container.
European List of Waste (LoW) code	14 06 03* - other solvents and solvent mixtures 16 05 04* - gases in pressure containers (including halons) containing dangerous substances 15 01 04 - metallic packaging

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG / RID

Other information No supplementary information available

ADR	IMDG	IATA	RID
14.1. UN number			
1950	1950	1950	1950
14.2. UN proper shipping name			
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS
Transport document description			
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1		
14.3. Transport hazard class(es)			
2.1	2.1	2.1	2.1
			
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

Classification code (ADR)	5F
Special provisions (ADR)	190, 327, 344, 625
Limited quantities (ADR)	11
Packing instructions (ADR)	P207, LP02
Mixed packing provisions (ADR)	MP9
Tunnel restriction code (ADR)	D

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- Transport by sea

Special provisions (IMDG)	63, 190, 277, 327, 344, 959
Limited quantities (IMDG)	SP277
Packing instructions (IMDG)	P207, LP02
EmS-No. (Fire)	F-D
EmS-No. (Spillage)	S-U
Stowage category (IMDG)	None
Stowage and segregation (IMDG)	Protected from sources of heat For AEROSOLS with a maximum capacity of 1 litre: Category A. Segregation as for class 9 but 'Separated from' class 1 except division 1.4. For AEROSOLS with a capacity above 1 litre: Category B. Segregation as for the appropriate sub-division of class 2. For WASTE AEROSOLS: Category C. Clear of living quarters. Segregation as for the appropriate sub-division of class 2.
MFAG-No	126

- Air transport

PCA packing instructions (IATA)	203
PCA max net quantity (IATA)	75kg
Special provisions (IATA)	A145, A167

- Rail transport

Special provisions (RID)	190, 327, 344, 625
Limited quantities (RID)	1L
Packing instructions (RID)	P207, LP02
Carriage prohibited (RID)	No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
 Contains no substance on the REACH candidate list
 Contains no REACH Annex XIV substances

VOC content 1018.6 mg/l EU-VOC

15.1.2. National regulations

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:

Aerosol 1	Aerosol, Category 1
Compressed gas	Gases under pressure : Compressed gas
Flam. Gas 1	Flammable gases, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
H220	Extremely flammable gas
H222	Extremely flammable aerosol

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H225	Highly flammable liquid and vapour
H229	Pressurised container: May burst if heated
H280	Contains gas under pressure; may explode if heated

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product