

GC 11

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

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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

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

Use of the substance/mixture	Gas can for use exclusively with the Hilti GX 100 tool Propellant for direct fastening tools
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1.3. Details of the supplier of the safety data sheet

Supplier Hilti Far East Private Ltd. No 20 Harbour Drive, 117612 Singapore - Singapur T +65 6777 7887 - F +65 6777 3057 sg-customer-service@hilti.com	Department issuing data specification sheet Hilti Entwicklungsgesellschaft mbH Hiltistrasse 6 86916 Kaufering - Deutschland T +49 8191 906310 - F +49 8191 90176310 df-hse@hilti.com
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1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +65 6777 7887
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Physical hazards	Flammable aerosols, Category 1
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2.2. Label elements

Hazard pictograms (GHS-SG)



GHS02

Signal word (GHS-SG)	Danger
Hazard statements (GHS-SG)	H222 - Extremely flammable aerosol
Precautionary statements (GHS-SG)	Keep out of reach of children (P102) Keep away from heat, hot surfaces, open flames, sparks. - No smoking (P210) Do not spray on an open flame or other ignition source (P211) Do not pierce or burn, even after use (P251) Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F (P410+P412)

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

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3.2. Mixture

Name	Concentration(%)	Formula	Product identifier
Dimethyl ether	20 - <30	C2H6O	(CAS No) 115-10-6 (EC no) 204-065-8 (EC index no) 603-019-00-8
propene	20 - <30	CH2=CHCH3	(CAS No) 115-07-1 (EC no) 204-062-1 (EC index no) 601-011-00-9
Isobutane	10 - <20	C4H10	(CAS No) 75-28-5 (EC no) 200-857-2 (EC index no) 601-004-00-0
ethanol	10 - <20	C2H6O	(CAS No) 64-17-5 (EC no) 200-578-6 (EC index no) 603-002-00-5
Propane	5 - <15	CH3CH2CH3	(CAS No) 74-98-6 (EC no) 200-827-9 (EC index no) 601-003-00-5
Butane	5 - 10	CH3CH2CH2CH3	(CAS No) 106-97-8 (EC no) 203-448-7 (EC index no) 601-004-00-0

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	Remove/Take off immediately all contaminated clothing.
Inhalation	Remove person to fresh air and keep comfortable for breathing.
Skin contact	Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
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.
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

No additional information available

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.

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.

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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.
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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.
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

No additional information available

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.
Eye protection	Chemical goggles or safety glasses. EN 166. EN 170.
Skin and body protection	When using setting tools, sufficient ear protection must be worn.

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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
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.

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SECTION 11: Toxicological information

11.1. Effects on humans

No data available

11.2. Acute toxicity

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Oral	Rat	LD ₅₀	No data available
	Mouse	LD ₅₀	No data available
Inhalation	Rat	LC ₅₀	No data available
	Mouse	LC ₅₀	No data available
Dermal	Rabbit	LD ₅₀	No data available
	Mouse	LD ₅₀	No data available

Dimethyl ether (115-10-6)			
Inhalation	Rat	LC ₅₀	164000 ppm/4h (Rat; Literature study)

Isobutane (75-28-5)			
Inhalation	Rat	LC ₅₀	11000 ppm

ethanol (64-17-5)			
Oral	Rat	LD ₅₀	10740 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
Dermal	Rabbit	LD ₅₀	> 16000 mg/kg (Rabbit; Literature study)

Propane (74-98-6)			
Inhalation	Rat	LC ₅₀	280000 ppm/4h (Rat; Literature)

Butane (106-97-8)			
Inhalation	Rat	LC ₅₀	276000 ppm/4h (Rat; Literature)

11.3. Skin corrosion/irritation - Description

No data available

11.4. Serious eye damage/eye irritation - Description

No data available

11.5. Skin or Respiratory sensitization - Description

No data available

11.6. Germ cell mutagenicity - Description

No data available

11.7. Carcinogenicity

No data available

11.8. Reproductive toxicity - Description

No data available

11.9. Specific target organ toxicity (single exposure) - Description

No data available

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11.10. Specific target organ toxicity (repeated exposure) - Description

No data available

11.11. Aspiration hazard - Description

No data available

11.12. Other health hazard

No data available

SECTION 12: Ecological information

12.1. Toxicity

Dimethyl ether (115-10-6)	
LC50 fish 1	3082 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	756.2 mg/l (48 h; Daphnia magna)
LC50 fish 2	> 1000 mg/l (96 h; Pisces)
EC50 Daphnia 2	> 4400 mg/l (48 h; Daphnia magna)
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; Pimephales promelas; Nominal concentration)
EC50 Daphnia 1	9300 mg/l (48 h; Daphnia magna)
LC50 fish 2	13000 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 2	10800 mg/l (24 h; Daphnia magna)
Threshold limit other aquatic organisms 1	65 mg/l (72 h; Protozoa)
Threshold limit algae 1	1450 mg/l (192 h; Microcystis aeruginosa; Growth rate)
Threshold limit algae 2	5000 mg/l (168 h; Scenedesmus quadricauda; Growth rate)
Propane (74-98-6)	
TLM fish 1	17.8 - 19.7, 96 h; Pimephales promelas
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; Daphnia magna
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).
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

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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. Other adverse effects

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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.





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SECTION 14: Transport information

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

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)	1I
Packing instructions (ADR)	P207, LP02
Mixed packing provisions (ADR)	MP9
Tunnel restriction code (ADR)	D

- 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
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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

SECTION 15: Regulatory information

15.1. National regulations

No data available

15.2. International Regulations

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

Aerosol 1 H222;H229

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

15.3. Chemical inventory status

Australia AICS	No
Canada DSL	No
China IECSC	No
EU EINECS	No
Japan ENCS	No
Korea ECL	No
PICCS	No
US TSCA	No

SECTION 16: Other information

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

SDS_SG_Hilti

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