

GC 22

Safety Data Sheet

according to SS 586 Part 3 (2014)
Issue date: 14.12.2022

Revision date: 14.12.2022

Supersedes: 28.11.2017

Version: 24.00

SECTION 1: Identification

1.1. Product identifier

Name GC 22
Product code BU Direct Fastening



1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use For professional use only, Propellant for direct fastening tools.

1.4. Supplier's details

Supplier

Hilti Far East Private Ltd.
No 20 Harbour Drive, #06-06/08 PSA Vista Singapore Singapur 117612
T +65 6777 7887 - F +65 6777 3057
sg-customerservice@hilti.com

Department issuing data specification sheet

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Hiltistrasse 6 Kaufering Deutschland 86916
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df-hse@hilti.com

1.5. Emergency phone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Physical hazards Flammable gases, Category 1A
Gases under pressure : Compressed gas

2.2. GHS label elements including precautionary statements

Hazard pictograms (GHS SG)



Signal word (GHS SG)

Danger

Hazard statements (GHS SG)

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

Precautionary statements

General

P102 : Keep out of reach of children.

Prevention

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

Response

P381 : Eliminate all ignition sources if safe to do so.

Storage

P403 : Store in a well-ventilated place.
P410+P412 : Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

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2.3. Other hazards which do not result in classification

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Synonyms	Concentration (%)	Formula	Product identifier
isobutane	-	55 - <65	C4H10	CAS-No.: 75-28-5 EC-No.: 200-857-2 EC Index-No.: 601-004-00-0
propene	-	20 - <30	C3H6	CAS-No.: 115-07-1 EC-No.: 204-062-1 EC Index-No.: 601-011-00-9
propane	-	5 - <15	C3H8	CAS-No.: 74-98-6 EC-No.: 200-827-9 EC Index-No.: 601-003-00-5

SECTION 4: First-aid measures

4.1. Description of necessary first aid measures

First-aid measures general	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.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
Ingestion	Immediately consult a doctor/medical service.

4.2. Most important symptoms/effects, acute and delayed

No additional information available

4.3. Indication of immediate medical attention and special treatment needed

Other medical advice or treatment	Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media	Carbon dioxide. Water spray. Dry powder. Alcohol resistant foam.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

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	On burning: release of (highly) toxic gases/vapours. Thermal decomposition generates : Carbon dioxide. Carbon monoxide.

5.3. Special protective actions for fire fighters

Precautionary measures fire	Fight fire remotely due to the risk of explosion.
Firefighting instructions	DO NOT fight fire when fire reaches explosives. Evacuate area.

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Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.
Other information	EN 12942. EN 12941.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Evacuate area. Remove ignition sources.
6.1.1. For non-emergency personnel	
Emergency procedures	Ventilate spillage area. Evacuate area. No open flames, no sparks, and no smoking.
6.1.2. For emergency responders	
Protective equipment	Do not attempt to take action without suitable protective equipment. Breathing apparatus.

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	Flammable gas. Do not pierce or burn, even after use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautions for safe handling	Do not spray on an open flame or other ignition source. Avoid contact with skin, eyes and clothing. Do not breathe vapours. Prevent the build-up of electrostatic charge.
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. Keep in fireproof place. Store in dry protected location to prevent any moisture contact.
Incompatible materials	Heat sources. Direct sunlight. Sources of ignition.
Storage temperature	5 – 25 °C
Heat and ignition sources	Keep away from heat and direct sunlight. Keep away from ignition sources.
Information 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/Occupational exposure limits

No additional information available

8.2. Monitoring

No additional information available

8.3. Appropriate engineering control measures

Appropriate engineering controls	Ensure good ventilation of the work station.
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8.4. Personal protection

Hand protection

In case of repeated or prolonged contact wear gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	3 (> 60 minutes)	0,12		EN ISO 374

Eye protection

Chemical goggles or safety glasses. EN 166. EN 170

Skin and body protection

When using cartridge operated tools, sufficient ear protection must be worn.

Respiratory protection

No respiratory protection needed under normal use conditions

Personal protective equipment symbol(s)



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Gas
Colour	Colourless
Odour	Sweet
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	No data available
Decomposition temperature	No data available
Flammability	Extremely flammable gas.
Vapour pressure	8300 hPa
Relative vapour density at 20°C	No data available
Relative density	No data available
Density	0.6 g/cm ³ (DIN 51757)
Solubility	insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	No data available
Partition coefficient n-octanol/water (Log Kow)	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 – 11.1 vol %

9.2. Other information

Gas group

Gases under pressure : Compressed gas

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

10.3. Possibility of hazardous reactions

No additional information available

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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

No additional information available

SECTION 11: Toxicological information

11.1. Acute toxicity

Acute toxicity (oral)	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	Not classified (Based on available data, the classification criteria are not met)

isobutane (75-28-5)	
LC50 Inhalation - Rat [ppm]	> 18000 ppm

propene (115-07-1)	
LC50 Inhalation - Rat	> 688 mg/m ³

propane (74-98-6)	
LC50 Inhalation - Rat [ppm]	> 280000 ppm (literature)

Skin corrosion/irritation	Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	Not classified (Based on available data, the classification criteria are not met)

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Vaporizer	Container fitted with a sealed spray attachment
Density	0.6 g/cm ³ (DIN 51757)

Potential adverse human health effects and symptoms No additional information available.

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic)	Not classified (Based on available data, the classification criteria are not met)
Other information	Avoid release to the environment.

isobutane (75-28-5)	
LC50 - Fish [1]	24.11 – 147.54 mg/l (Quantitative structure-activity relationship (QSAR))
EC50 - Crustacea [1]	7.02 – 69.43 mg/l (Quantitative structure-activity relationship (QSAR))
ErC50 algae	7.71 – 16.5 mg/l (Quantitative structure-activity relationship (QSAR))

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isobutane (75-28-5)	
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (20 °C)
propene (115-07-1)	
LC50 - Fish [1]	43.3 mg/l (72 h; Oncorhynchus mykiss (Rainbow trout); Quantitative structure-activity relationship (QSAR))
EC50 - Crustacea [1]	28.2 mg/l (48 h; daphnia; Quantitative structure-activity relationship (QSAR))
EC50 96h - Algae [1]	12.1 mg/l (algae; Quantitative structure-activity relationship (QSAR))
Partition coefficient n-octanol/water (Log Kow)	1.77 (20 °C)
propane (74-98-6)	

12.2. Persistence and degradability

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Persistence and degradability	No additional information available
isobutane (75-28-5)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable.
propene (115-07-1)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.
propane (74-98-6)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

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Bioaccumulative potential	No additional information available
isobutane (75-28-5)	
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (20 °C)
Bioaccumulative potential	Bioaccumulation unlikely.
propene (115-07-1)	
Partition coefficient n-octanol/water (Log Kow)	1.77 (20 °C)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).
propane (74-98-6)	
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).

12.4. Mobility in soil

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Mobility in soil	No additional information available
isobutane (75-28-5)	
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (20 °C)

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propene (115-07-1)	
Partition coefficient n-octanol/water (Log Kow)	1.77 (20 °C)

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available

SECTION 13: Disposal considerations

Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	Container under pressure. Do not drill or burn even after use.
Additional information	Flammable vapours may accumulate in the container.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
UN 3150	UN 3150	UN 3150	UN 3150
14.2. UN proper shipping name			
HYDROCARBON GAS REFILLS FOR SMALL DEVICES	HYDROCARBON GAS REFILLS FOR SMALL DEVICES	Hydrocarbon gas Refills for small devices	HYDROCARBON GAS REFILLS FOR SMALL DEVICES
Transport document description			
UN 3150 HYDROCARBON GAS REFILLS FOR SMALL DEVICES, 2.1, (D)	UN 3150 HYDROCARBON GAS REFILLS FOR SMALL DEVICES, 2.1	UN 3150 Hydrocarbon gas Refills for small devices, 2.1	UN 3150 HYDROCARBON GAS REFILLS FOR SMALL DEVICES, 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)	6F
Limited quantities (ADR)	0
Excepted quantities (ADR)	E0
Packing instructions (ADR)	P209
Mixed packing provisions (ADR)	MP9
Transport category (ADR)	2
Special provisions for carriage - Loading, unloading and handling (ADR)	CV9

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Special provisions for carriage - Operation (ADR) S2
 Tunnel restriction code (ADR) D

Transport by sea

Limited quantities (IMDG) 0
 Excepted quantities (IMDG) E0
 Packing instructions (IMDG) P003
 EmS-No. (Fire) F-D
 EmS-No. (Spillage) S-U
 Stowage category (IMDG) B
 Stowage and handling (IMDG) SW2
 MFAG-No 115

Air transport

PCA Excepted quantities (IATA) E0
 PCA Limited quantities (IATA) Forbidden
 PCA limited quantity max net quantity (IATA) Forbidden
 PCA packing instructions (IATA) 201
 PCA max net quantity (IATA) 1kg
 CAO packing instructions (IATA) 201
 CAO max net quantity (IATA) 15kg
 Special provisions (IATA) A802
 ERG code (IATA) 10L

Rail transport

Classification code (RID) 6F
 Limited quantities (RID) 0
 Excepted quantities (RID) E0
 Packing instructions (RID) P209
 Mixed packing provisions (RID) MP9
 Transport category (RID) 2
 Special provisions for carriage - Loading, unloading and handling (RID) CW9
 Colis express (express parcels) (RID) CE2
 Hazard identification number (RID) 23

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Regulation	Component / Mixture
Fire Safety Act/Fire Safety (Petroleum and Flammable Materials) Regulations	Petroleum and Flammable Materials Isobutane; Propylene; Propane
Maritime and Port Authority of Singapore (Dangerous, Petroleum and Explosives) Regulations	Maritime and Port Authority-Dangerous Goods Isobutane; Propylene; Propane

15.2. International regulations

No additional information available

15.3 Chemical inventory status

No additional information available

SECTION 16: Other information

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Issue date	14/12/2022
Revision date	14/12/2022
Data sources	Source: European Chemicals Agency, http://echa.europa.eu/ . manufacturer.
Abbreviations and acronyms	<p>CAS-No. - Chemical Abstract Service number</p> <p>ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</p> <p>ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>ATE - Acute Toxicity Estimate</p> <p>CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</p> <p>DNEL - Derived-No Effect Level</p> <p>EC50 - Median effective concentration</p> <p>ED - Endocrine disrupting properties</p> <p>EC-No. - European Community number</p> <p>EN - European Standard</p> <p>IATA - International Air Transport Association</p> <p>IMDG - International Maritime Dangerous Goods</p> <p>IOELV - Indicative Occupational Exposure Limit Value</p> <p>LC50 - Median lethal concentration</p> <p>LD50 - Median lethal dose</p> <p>NOEC - No-Observed Effect Concentration</p> <p>OECD - Organisation for Economic Co-operation and Development</p> <p>N.O.S. - Not Otherwise Specified</p> <p>OEL - Occupational Exposure Limit</p> <p>PBT - Persistent Bioaccumulative Toxic</p> <p>PNEC - Predicted No-Effect Concentration</p> <p>REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006</p> <p>RID - Regulations concerning the International Carriage of Dangerous Goods by Rail</p> <p>SDS - Safety Data Sheet</p> <p>STP - Sewage treatment plant</p> <p>TLM - Median Tolerance Limit</p> <p>TRGS - Technical Rules for Hazardous Substances</p> <p>VOC - Volatile Organic Compounds</p> <p>WGK - Water Hazard Class</p> <p>vPvB - Very Persistent and Very Bioaccumulative</p> <p>NOAEL - No-Observed Adverse Effect Level</p> <p>NOAEC - No-Observed Adverse Effect Concentration</p> <p>LOAEL - Lowest Observed Adverse Effect Level</p>
Training advice	Department issuing data specification sheet.

Indication of changes			
Section	Changed item	Change	Comments
	General	Modified	
11	Toxicological information	Modified	
12	Ecotoxicological information	Modified	
15	Regulatory information	Added	
8	Personal protective equipment	Modified	
9	Physical and chemical properties	Modified	

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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.