

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

Issue date: 03/04/2023

Revision date: 03/04/2023

Supersedes: 28/11/2017

Version: 24.0

SECTION 1: Identification

1.1. GHS Product identifier

Product form	Mixture
Name	GC 22
UN-No. (ADR)	3150
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 (Philippines) Inc.
2256 Pasong Tamo Extension Edsa, Brgy. Magallanes
PH- 1224 Makati City
Philippinen
T +632 784 7100 - F +63 2 784 7100
customerservice.ph@hilti.com

Department issuing data specification sheet

Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
DE- 86916 Kaufering
Deutschland
T +49 8191 906310 - F +49 8191 90176310
df-hse@hilti.com

1.5. Emergency phone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +632 784 7100
------------------	--

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Flammable gases, Category 1A	H220
Gases under pressure : Compressed gas	H280
Full text of H-statements: see section 16	

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS UN)



Signal word (GHS UN)

Danger

Hazard statements (GHS UN)

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

Precautionary statements (GHS UN)

P102 - Keep out of reach of children.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

P211 - Do not spray on an open flame or other ignition source.
 P251 - Do not pierce or burn, even after use.
 P381 - In case of leakage, eliminate all ignition sources.
 P403 - Store in a well-ventilated place.
 P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

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	Product identifier	%	Classification according to the United Nations GHS
isobutane	CAS-No.: 75-28-5	55 - <65	Flam. Gas 1A, H220 Press. Gas (Comp.), H280
propene	CAS-No.: 115-07-1	20 - <30	Flam. Gas 1A, H220 Press. Gas (Comp.), H280
Propane	CAS-No.: 74-98-6	5 - <15	Flam. Gas 1A, H220 Press. Gas (Comp.), H280

Full text of H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	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.
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 medical advice/attention.
First-aid measures after ingestion	Immediately consult a doctor/medical service.

4.2. Most important symptoms/effects, acute and delayed

Potential adverse human health effects and symptoms	No additional information available. No harmful effects are to be expected if used properly. The contained ingredients can be harmful, but they are hermetically enclosed in the article and can not be released. The dismantling of the article is prohibited.
---	---

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

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.
------------------	---

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

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.
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 materials for containment and cleaning up

Methods for cleaning up	Do not flush with water.
-------------------------	--------------------------

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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.
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.

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.
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.
Storage temperature	5 – 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	Ensure good ventilation of the work station.
----------------------------------	--

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection	In case of repeated or prolonged contact wear gloves
-----------------	--

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

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. ISO 16321-1. 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)



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	Gas
Colour	Colourless.
Odour	Sweet.
Odour threshold	Not available
Melting point	Not applicable
Freezing point	Not applicable
Boiling point	Not available
Flammability	Extremely flammable gas.
Lower explosion limit	1.7 vol %
Upper explosion limit	11.1 vol %
Flash point	Not applicable
Auto-ignition temperature	Not available
Decomposition temperature	Not available
pH	Not applicable
pH solution	Not applicable
Viscosity, kinematic (calculated value) (40 °C)	Not applicable
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	8300 hPa
Vapour pressure at 50°C	Not available
Density	0.6 g/cm ³ (DIN 51757)
Relative density	Not applicable
Relative vapour density at 20°C	Not available
Solubility	insoluble in water.
Particle size	Not applicable

9.2. Data relevant with regard to physical hazard classes (supplemental)

Explosive properties	Product is not explosive. In use, may form flammable/explosive vapour-air mixture
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.

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

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

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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)

GC 22	
Vaporizer	Container fitted with a sealed spray attachment

Potential adverse human health effects and symptoms

No additional information available. No harmful effects are to be expected if used properly. The contained ingredients can be harmful, but they are hermetically enclosed in the article and can not be released.

The dismantling of the article is prohibited.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	Due to the consistency along with the low water solubility of the product a bioavailability is unlikely.
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)

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

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))
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))

12.2. Persistence and degradability

GC 22	
Persistence and degradability	No additional information available
isobutane (75-28-5)	
Persistence and degradability	Readily biodegradable.
propene (115-07-1)	
Persistence and degradability	Readily biodegradable in water.
Propane (74-98-6)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

GC 22	
Bioaccumulative potential	No additional information available
isobutane (75-28-5)	
Partition coefficient n-octanol/water (Log Kow)	1.09 – 2.8 (20 °C)
Bioaccumulative potential	Bioaccumulation unlikely.
propene (115-07-1)	
Partition coefficient n-octanol/water (Log Pow)	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

GC 22	
Mobility in soil	No additional information available

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available
Other information	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste)	Disposal must be done according to official regulations.
------------------------------	--

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

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
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

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

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

No additional information available

SECTION 16: Other information

Issue date	03/04/2023
Revision date	03/04/2023
Supersedes	28/11/2017

Section	Changed item	Change	Comments
	General		
1.2	Use of the substance/mixture	Added	
1.3	Supplier information	Modified	
2	Classification (GHS UN)	Modified	
2.2	Precautionary statements (GHS UN)	Modified	
8		Modified	
9	Physical and chemical properties	Modified	
11	Toxicological information	Modified	

GC 22

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

Section	Changed item	Change	Comments
12.	Ecotoxicological information	Modified	
15	Legislation	Modified	

Abbreviations and acronyms

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

Training advice

Full text of H-statements:	
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

SDS UN 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.