CFR 1

Safety Data Sheet

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

Issue date: 18/11/2024 Revision date: 18/11/2024 Supersedes: 05/08/2022 Version: 22.2

SECTION 1: Identification

1.1. GHS Product identifier

Product form	Mixture
Trade name	CFR 1
UN-No. (ADR)	1950
Product code	BU Fire Protection

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture	Spray cleaners

1.4. Supplier's details

Supplier

Hilti Saudi Arabia for Construction Tools LLC
King Fahd Street
P.O. Box 15930
SA 21454 Jeddah
Saudi Arabia
T +966 2 213 8400, F +966 2 697 4696
sa.customerservice@hilti.com

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-fire.protection@hilti.com

1.5. Emergency phone number

Emergency number	Emergency CONTACT (24-Hour-Number): GBK GmbH Global Regulatory Compliance +49 (0)6132-84463 +966 2 213 8400

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Aerosol, Category 1	H222;H229	On basis of test data
Serious eye damage/eye irritation, Category 2	H319	Calculation method
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	Calculation method

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects	Pressurised container: May burst if heated,Extremely flammable aerosol,May cause drowsiness or dizziness,Causes serious eye irritation.

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS UN)

Signal word (GHS UN)	Danger
Hazardous ingredients	Acetone; ethyl acetate
Hazard statements (GHS UN)	H222 - Extremely flammable aerosol H229 - Pressurised container: May burst if heated H319 - Causes serious eye irritation H336 - May cause drowsiness or dizziness
Precautionary statements (GHS UN)	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. P261 - Avoid breathing spray. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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
Acetone	CAS-No.: 67-64-1	40 – 60	Flammable liquids, Category 2, H225 Acute toxicity (oral) Not classified Acute toxicity (dermal) Not classified Acute toxicity (inhalation:dust,mist) Not classified Serious eye damage/eye irritation, Category 2, H319 Serious eye damage/eye irritation, Category 2A, H319 Specific target organ toxicity – Single exposure, Category 3, Narcosis, H336 Hazardous to the aquatic environment – Acute Hazard Not classified Hazardous to the aquatic environment – Chronic Hazard Not classified

Name	Product identifier	%	Classification according to the United Nations GHS
ethyl acetate	CAS-No.: 141-78-6	10 – 25	Flammable liquids, Category 2, H225 Serious eye damage/eye irritation, Category 2, H319 Specific target organ toxicity – Single exposure, Category 3, Narcosis, H336 Flammable liquids, Category 2, H225
isobutane	CAS-No.: 75-28-5	< 25	Flammable gases, Category 1A, H220 Gases under pressure : Compressed gas, H280 Acute toxicity (inhalation:gas) Not classified
propane	CAS-No.: 74-98-6	< 10	Flammable gases, Category 1A, H220 Gases under pressure : Liquefied gas, H280
butane	CAS-No.: 106-97-8	< 10	Flammable gases, Category 1A, H220 Gases under pressure : Liquefied gas, 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: Call a poison center or a doctor if you feel unwell. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

First-aid measures after skin contact: If skin irritation occurs: Get medical advice/attention. Wash skin with plenty of water. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after inhalation: May cause drowsiness or dizziness.

Symptoms/effects after eye contact: Eye irritation. Causes serious eye irritation.

Potential adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

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

5.2. Specific hazards arising from the chemical

Fire hazard	Extremely flammable aerosol.
Explosion hazard	Pressurised container: May burst if heated.
Hazardous decomposition products in case of fire	Carbon dioxide. Carbon monoxide. Vapours may form explosive mixture with air.

5.3. Special protective actions for fire-fighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. 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

6.1.1. For non-emergency personnel

Emergency procedures	Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing spray. Avoid contact with skin and eyes. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". Equip cleanup crew with proper protection. Avoid breathing dust/fume/gas/mist/vapours/spray.
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information	Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Use only outdoors or in a well-ventilated area. Avoid breathing spray. Avoid contact with skin and eyes. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.

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.
Environmental exposure controls	Avoid release to the environment.
Other information	Do not eat, drink or smoke during use.

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

Personal protective equipment:

Gloves. Protective clothing. Protective goggles.

Hand protection: Wear suitable gloves tested to EN374. Suitable for short-term work or as a splash guard: Nitrile rubber gloves (> 0.2 mm). In case of permanent product contact:

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Protective gloves	Butyl rubber	6 (> 480 minutes)	0,5mm		EN ISO 374

Eye protection

Type	Field of application	Characteristics	Standard
Safety glasses			EN 166, EN 171

Skin and body protection: Wear suitable protective clothing

Respiratory protection: Ensure good ventilation of the work station. If the occupational exposure limit is exceeded: Wear appropriate mask. (e.g. gas filter type A1-P2 according to EN 14387)

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	Liquid
Appearance	Aerosol
Colour	Colourless.
Odour	characteristic.
Odour threshold	Not available
Melting point	Not applicable
Freezing point	Not available
Boiling point	Not available
Flammability	Extremely flammable aerosol.
Lower explosion limit	Not available
Upper explosion limit	Not available
Flash point	Not available

Auto-ignition temperature	Not available
Decomposition temperature	Not available
pH	Not available
pH solution	Not available
Viscosity, kinematic (calculated value) (40 °C)	Not available
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	2500 – 2900 hPa at 20 °C
Vapour pressure at 50°C	Not available
Density	0.74 – 0.76 g/cm³
Relative density	Not available
Relative vapour density at 20°C	Not available
Solubility	Soluble in water.
Particle size	Not applicable

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

Explosive properties	Pressurised container: May burst if heated.
% of flammable ingredients	112 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol. Pressurised container: May burst if heated.

10.2. Chemical stability

Stable under normal conditions. Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

isobutane (75-28-5)	
LC50 Inhalation - Rat [ppm]	> 800000 ppm (15 minutes, Rat, Male / female, Experimental value, Inhalation (gases))

propane (74-98-6)	
LC50 Inhalation - Rat [ppm]	> 800000 ppm (15 minutes, Rat, Male / female, Experimental value, Inhalation (gases))

Acetone (67-64-1)	
LD50 oral rat	5800 mg/kg (Rat, Female, Experimental value, Oral, 14 day(s))
LD50 oral	6667 mg/kg
LD50 dermal rabbit	> 15800 mg/kg bodyweight (24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))

Acetone (67-64-1)	
LD50 dermal	20000 mg/kg
LC50 Inhalation - Rat	132 mg/l (3 h, Rat, Male, Experimental value, Inhalation (vapours))

ethyl acetate (141-78-6)	
LD50 oral rat	10200 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 oral	5600 mg/kg
LD50 dermal rabbit	> 20000 mg/kg bodyweight (24 hour cuff method, 24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
LD50 dermal	18000 mg/kg
LC50 Inhalation - Rat (Vapours)	52.75 mg/l/4h

butane (106-97-8)	
LC50 Inhalation - Rat [ppm]	276798.8 ppm

Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	May cause drowsiness or dizziness.

Acetone (67-64-1)	
STOT-single exposure	May cause drowsiness or dizziness.

ethyl acetate (141-78-6)	
STOT-single exposure	May cause drowsiness or dizziness.

STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

CFR 1	
Vaporizer	Aerosol

Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute)	Not classified
Hazardous to the aquatic environment, long–term (chronic)	Not classified

isobutane (75-28-5)	
EC50 96h - Algae [1]	8.57 mg/l (ECOSAR v1.00, Algae, Fresh water, QSAR)

propane (74-98-6)	
EC50 96h - Algae [1]	12 mg/l (ECOSAR v1.00, Algae, Fresh water, QSAR)

Acetone (67-64-1)	
LC50 - Fish [1]	6210 – 8120 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Measured concentration)
EC50 - Crustacea [1]	> 12700 mg/l
ErC50 algae	> 530 mg/l 96h, Pseudokirchneriella subcapitata

ethyl acetate (141-78-6)	
LC50 - Fish [1]	230 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	262 mg/l
NOEC chronic crustacea	2.4 mg/l

12.2. Persistence and degradability

CFR 1	
Persistence and degradability	Not established.

isobutane (75-28-5)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.

propane (74-98-6)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.

Acetone (67-64-1)	
Not rapidly degradable	
Persistence and degradability	Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.43 g O_2/g substance
Chemical oxygen demand (COD)	1.92 g O_2/g substance
ThOD	2.2 g O_2/g substance

ethyl acetate (141-78-6)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.293 g O_2/g substance
Chemical oxygen demand (COD)	1.69 g O_2/g substance
ThOD	1.82 g O_2/g substance

butane (106-97-8)
Not rapidly degradable

12.3. Bioaccumulative potential

CFR 1	
Bioaccumulative potential	Not established.

isobutane (75-28-5)	
Partition coefficient n-octanol/water (Log Kow)	1.09 – 2.8 (Experimental value, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

propane (74-98-6)	
Partition coefficient n-octanol/water (Log Kow)	1.1 – 2.8 (Experimental value, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Acetone (67-64-1)	
BCF - Fish [1]	0.69 (Pisces, Literature study)
Partition coefficient n-octanol/water (Log Kow)	-0.23 (Test data)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

ethyl acetate (141-78-6)	
BCF - Fish [1]	30 (3 day(s), Leuciscus idus, Static renewal, Experimental value)
Partition coefficient n-octanol/water (Log Kow)	0.68 (Experimental value, EPA OPPTS 830.7560, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

CFR 1	
Mobility in soil	No additional information available

isobutane (75-28-5)	
Surface tension	No data available in the literature
Ecology - soil	Not applicable (gas).

propane (74-98-6)	
Surface tension	No data available in the literature
Ecology - soil	Not applicable (gas).

Acetone (67-64-1)	
Surface tension	23.3 mN/m (20 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.374 – 0.988 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

ethyl acetate (141-78-6)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for adsorption in soil.

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

Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Ecological information	Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID /

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping name			
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1	UN 1950 Aerosols, flammable, 2.1	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)	1l
Packing instructions (ADR)	P207, LP02
Mixed packing provisions (ADR)	MP9
Transport category (ADR)	2
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
MFAG-No	126

Air transport

PCA packing instructions (IATA)	203
PCA max net quantity (IATA)	75kg
CAO packing instructions (IATA)	203
Special provisions (IATA)	A145, A167, A802

Rail transport

Special provisions (RID)	190, 327, 344, 625

Limited quantities (RID)	1L
Packing instructions (RID)	P207, LP02

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

SDS Major/Minor	None
Issue date	11/18/2024
Revision date	11/18/2024
Supersedes	8/5/2022

Indication of changes:
Modified.

Section	Changed item	Change	Comments
			general update

Other information None.

Full text of H-statements:	
Acute Tox. Not classified (Dermal)	Acute toxicity (dermal) Not classified
Acute Tox. Not classified (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Not classified
Acute Tox. Not classified (Inhalation:gas)	Acute toxicity (inhalation:gas) Not classified
Acute Tox. Not classified (Oral)	Acute toxicity (oral) Not classified
Aquatic Acute Not classified	Hazardous to the aquatic environment – Acute Hazard Not classified
Aquatic Chronic Not classified	Hazardous to the aquatic environment – Chronic Hazard Not classified
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Gas 1A	Flammable gases, Category 1A
Flam. Liq. 2	Flammable liquids, Category 2
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
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

Full text of H-statements:	
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

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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.