

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 Trade name UN-No. (ADR) Product code

Mixture CFR 1 1950 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 (Hong Kong) Ltd. 701-704, 7/F, Tower A, Manulife Financial Centre 223 Wai Yip Street, Kwun Tong HK Kowloon Hong Kong T +852 27734 700 hksales@hilti.com

1.5. Emergency phone number

Emergency number

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

Emergency CONTACT (24-Hour-Number): GBK GmbH Global Regulatory Compliance +49 (0)6132-84463

+852 27734 700

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



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

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS UN)

Signal word (GHS UN)
Hazardous ingredients
Hazard statements (GHS UN)

Precautionary statements (GHS UN)

Danger Acetone; ethyl acetate H222 - Extremely flammable aerosol H229 - Pressurised container: May burst if heated H319 - Causes serious eye irritation H336 - May cause drowsiness or dizziness 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



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

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 mea	isures
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, acu	ute 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	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.

symptoms



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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 chemi	cal
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-fighte	rs
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 releas	se measures
6.1. Personal precautions, protective	e 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 cont	ainment 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 sto	brage
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 Incompatible materials	Strong bases. Strong acids. Sources of ignition. Direct sunlight.		



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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		
Environmental exposure controls		
Other information		

Ensure good ventilation of the work station. Avoid release to the environment. 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:

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

Eye protection

Туре	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

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



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Auto-ignition temperature	Not available
Decomposition temperature	Not available
рН	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
Vapour pressure at 50°C	Not available
Density	0.74 – 0.76 g/cm ³
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 % of flammable ingredients

Pressurised container: May burst if heated. 112 %

20 °C

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))		



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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, Experimenta 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	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	Not classified	
(chronic)		
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)	



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Acetone (67-64-1)	
LC50 - Fish [1]	6210 – 8120 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-
5050 0 4	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).



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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	
Dzone	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 Product/Packaging disposal recommendations	Dispose of contents/container in accordance with licensed collector's sorting instructions. 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.	



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ADR	IMDG	IATA	RID
14.1. UN number or ID numbe	r		
UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping nam	e		
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(e	es)		
2.1	2.1	2.1	2.1
~		2	
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: N
No supplementary information availa	able		
14.6. Special precautions for u	ser		
Dverland transport Classification code (ADR) Special provisions (ADR) Limited quantities (ADR) Packing instructions (ADR) Mixed packing provisions (ADR) Fransport category (ADR)	5F 190, 327, 344, 629 1I P207, LP02 MP9 2	5	

Trans	nort	hv	sea

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



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

Limited quantities (RID) Packing instructions (RID) 1L 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

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

Indication of changes:

Modified.

Section	Changed item	Change	Comments
			general update

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
- BCF Bioconcentration factor
- BLV Biological limit value

BOD - Biochemical oxygen demand (BOD)

- CLP Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
- DMEL Derived Minimal Effect level
- DNEL Derived-No Effect Level

EC-No. - European Community number

- EC50 Median effective concentration
- ED Endocrine disrupting properties
- EN European Standard
- IARC International Agency for Research on Cancer
- IATA International Air Transport Association
- IMDG International Maritime Dangerous Goods
- IOELV Indicative Occupational Exposure Limit Value
- LC50 Median lethal concentration LD50 - Median lethal dose
- LOAEL Lowest Observed Adverse Effect Level
- N.O.S. Not Otherwise Specified
- NOAEC No-Observed Adverse Effect Concentration
- NOAEL No-Observed Adverse Effect Level
- NOEC No-Observed Effect Concentration
- vPvB Very Persistent and Very Bioaccumulative



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VOC - Volatile Organic Compounds SDS - Safety Data Sheet RID - Regulations concerning the International Carriage of Dangerous Goods by Rail REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 PNEC - Predicted No-Effect Concentration PBT - Persistent Bioaccumulative Toxic OEL - Occupational Exposure Limit OECD - Organisation for Economic Co-operation and Development COD - Chemical oxygen demand (COD) ThOD - Theoretical oxygen demand (ThOD) TRGS - Technical Rules for Hazardous Substances TLM - Median Tolerance Limit STP - Sewage treatment plant None.

Other information

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		
H319	Causes serious eye irritation		
H336	May cause drowsiness or dizziness		

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.