DX-Cartridge Clean-Tec

Safety Data Sheet

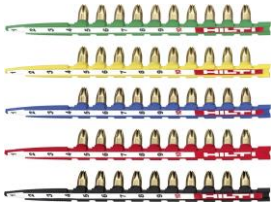
according to the United Nations GHS (Rev. 4, 2011)

Issue date: 15/01/2021 Revision date: 15/01/2021 : Version: 1.0

SECTION 1: Identification

1.1. GHS Product identifier

Product form	Article
Product name	DX-Cartridge Clean-Tec
UN-No. (ADR)	0014
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

1.4. Supplier's details

Supplier
Hilti (South Africa) (Pty) Ltd.
2 Tugela Lane, Waterfall Logistics Precinct
Corner Bridal Veil Road and R101
2090 Midrand - South Africa
T +2711 237300 - F +2711 2373111
Customercare.za@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

1.5. Emergency phone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +2711 237300

SECTION 2: Hazard identification

The dismantling of the article is prohibited!,This article contains hazardous substances or preparations not intended to be released under normal or reasonably foreseeable conditions of use.

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Explosives, Division 1.4	H204

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)

GHS01

Signal word (GHS UN): Warning

Hazard statements (GHS UN): H204 - Fire or projection hazard

Precautionary statements (GHS UN): P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P250 - Do not subject to shock, shock, friction, grinding.
P280 - Wear eye protection.
P370+P380+P375 - In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
P401 - Store in accordance with local regulations on explosives.

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

Comments: max. net explosives weight each cartridge in mg:
Caliber 6.8/11 (cal .27 short) red: 230
Caliber 6.8/18 (cal .27 long) blue: 300; red: 330

Within the cartridges the explosive ingredients (gun powder and priming composition) are hermetically separated from the
environment. They will be only opened with effort and under destruction of the article.
Propellant powder: Single base powder, containing glyceroltrinittate
Mass per cartridge: essentially dependent on the required power (100-400 mg)
Priming composition: SINTOX (initiating explosive) Mass per cartridge: 20,9 mg in the mean.

Exposed propellant powder outside a cartridge is harmful if swallowed and highly flammable; without tamping no explosion risk.
Packed safety cartridges don't represent a significant risk.
In case of reaction no dangerous fragments or projectiles will be formed.
Mechanical or thermal attempts to expose the primer composition lead to an immediate reaction of the dangerous ingredients.

Name	Product identifier	%	Classification according to the United Nations GHS
glycerol trinitrate	(CAS-No.) 55-63-0	3 – 10	Explosives, Unstable explosives, H200 Acute toxicity (oral), Category 2, H300 Acute toxicity (dermal), Category 1, H310 Acute toxicity (inhal.), Category 2, H330 Specific target organ toxicity — Repeated exposure, Category 2, H373 Hazardous to the aquatic environment — Acute Hazard, Category 2, H401 Hazardous to the aquatic environment — Chronic Hazard, Category 2, H411
diphenylamine	(CAS-No.) 122-39-4	0 – 1	Acute toxicity (oral), Category 3, H301 Acute toxicity (dermal), Category 3,

			H311 Acute toxicity (inhal.), Category 3, H331 Specific target organ toxicity — Repeated exposure, Category 2, H373 Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410

Full text of H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures after inhalation: Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact: 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 immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects: Not expected to present a significant hazard under anticipated conditions of normal use.

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

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media: Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

No additional information available

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 enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	Equip cleanup crew with proper protection.
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	Pick up loose cartridges only by hand. Exposed ingredients must be swept up carefully and phlegmatized in a water container, labelled according the regulations, wipe down with water the contamined area. Store away from other materials.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Do not subject to grinding,shock, friction. Take precautionary measures against static discharge. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	Hazardous waste due to potential risk of explosion.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Store in a dry place.
Storage area	Store away from heat.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Information on mixed storage	KEEP SUBSTANCE AWAY FROM: highly flammable materials. ignition sources.
Storage temperature	5 – 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Other information	Do not eat, drink or smoke during use.

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

Eye protection	Safety glasses
Skin and body protection	When using setting tools, sufficient ear protection must be worn.

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	Solid
Colour	According to product specification.
Odour	Not available
Odour threshold	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flammability (solid, gas)	Not available
Explosive limits	Not applicable
Lower explosive limit (LEL)	Not applicable
Upper explosive limit (UEL)	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
pH	Not available
pH solution	Not available
Viscosity, kinematic (calculated value) (40 °C)	Not applicable
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	Not available
Vapour pressure at 50 °C	Not available
Density	Not available
Relative density	Not available
Relative vapour density at 20 °C	Not applicable
Solubility	Not available
Explosive properties	Fire or projection hazard.
Particle size	Not available
Particle size distribution	Not available
Particle shape	Not available
Particle aspect ratio	Not available
Particle specific surface area	Not available

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

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Nitrogen oxides.

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

glycerol trinitrate (55-63-0)	
LD50 oral rat	685 mg/kg bodyweight (Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	685 mg/kg
LD50 dermal rat	> 9560 mg/kg bodyweight (Equivalent or similar to OECD 402, Rat, Male / female, Experimental value, Dermal)

diphenylamine (122-39-4)	
LD50 oral rat	> 800 mg/kg bodyweight (Rat, Male, Experimental value, Oral)

Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met. 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	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.
Hazardous to the aquatic environment, short-term (acute)	Not classified
Hazardous to the aquatic environment, long-term (chronic)	Not classified

glycerol trinitrate (55-63-0)	
LC50 fish 1	1,9 mg/l (ASTM E729-80, 96 h, Oncorhynchus mykiss, Flow-through system, Fresh water,

	Experimental value, Lethal)
NOEC chronic fish	0,03 mg/l

diphenylamine (122-39-4)	
EC50 Daphnia 1	2 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	2,17 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Experimental value, GLP)
NOEC chronic algae	0,0273 mg/l

12.2. Persistence and degradability

DX-Cartridge Clean-Tec	
Persistence and degradability	Not established.

glycerol trinitrate (55-63-0)	
Not rapidly degradable	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	53,6 g O_2/g substance

diphenylamine (122-39-4)	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.
ThOD	2,39 g O_2/g substance

12.3. Bioaccumulative potential

DX-Cartridge Clean-Tec	
Bioaccumulative potential	Not established.

glycerol trinitrate (55-63-0)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

diphenylamine (122-39-4)	
BCF fish 1	51 – 253 (Cyprinus carpio, Literature study, Test duration: 8 weeks)
Partition coefficient n-octanol/water (Log Kow)	3,71 – 3,84 (Weight of evidence approach, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20.2 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

DX-Cartridge Clean-Tec	
Mobility in soil	No additional information available

glycerol trinitrate (55-63-0)	
Ecology - soil	Low potential for adsorption in soil.

diphenylamine (122-39-4)	
Surface tension	71,8 mN/m (20 °C, 90 %, EU Method A.5: Surface tension)
Partition coefficient n-octanol/water (Log Koc)	2,818 – 2,917 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.

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

Product/Packaging disposal recommendations	Dispose in a safe manner in accordance with local/national regulations. Refer to manufacturer/supplier for information on recovery/recycling.
Ecology - waste materials	Avoid release to the environment.
Additional information	If possible use up the cartridges or store it for your next project. If not possible to use up the cartridges - The strip is mixed municipal waste and the cartridge itself is ”waste ammunition” and has to be disposed of by an authorized/certified company. If cartridges are used up: European waste catalogue: 20 03 01 - mixed municipal waste . The product (cartridges and strip) can be disposed of as household or factory waste.

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG / RID

ADR	IMDG	IATA	RID
14.1. UN number			
UN 0014	UN 0014	UN 0014	UN 0014
14.2. UN proper shipping name			
CARTRIDGES FOR TOOLS, BLANK	CARTRIDGES FOR TOOLS, BLANK	Cartridges for tools, blank	CARTRIDGES FOR TOOLS, BLANK
Transport document description			
UN 0014 CARTRIDGES FOR TOOLS, BLANK, (E)	UN 0014 CARTRIDGES FOR TOOLS, BLANK, 1.4S	UN 0014 Cartridges for tools, blank, 1.4S	UN 0014 CARTRIDGES FOR TOOLS, BLANK, 1.4S
14.3. Transport hazard class(es)			
1.4S	1.4S	1.4S	1.4S
			
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

Special provisions (ADR)	364
Limited quantities (ADR)	5kg
Packing instructions (ADR)	P130
Mixed packing provisions (ADR)	MP23, MP24
Transport category (ADR)	4

Tunnel restriction code (ADR)	E
Transport by sea	
Special provisions (IMDG)	364
Limited quantities (IMDG)	5 kg
Packing instructions (IMDG)	P130
EmS-No. (Fire)	F-B
EmS-No. (Spillage)	S-X
Stowage category (IMDG)	01
MFAG-No	114
Air transport	
PCA packing instructions (IATA)	130
PCA max net quantity (IATA)	25kg
CAO packing instructions (IATA)	130
Special provisions (IATA)	A802
Rail transport	
Special provisions (RID)	364
Limited quantities (RID)	5kg
Packing instructions (RID)	P130

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

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	15/01/2021
Revision date	15/01/2021

Full text of H-statements:	
H200	Unstable explosives
H204	Fire or projection hazard
H300	Fatal if swallowed
H301	Toxic if swallowed
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H330	Fatal if inhaled
H331	Toxic if inhaled
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life

H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

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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.