

DX-Cartridge

Safety Data Sheet

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

Issue date: 20/10/2021

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Version: 2.6

SECTION 1: Identification

1.1. GHS Product identifier

| | |
|--------------|---------------------|
| Product form | Article |
| Trade name | DX-Cartridge |
| UN-No. (ADR) | 0323 |
| 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

| | |
|-----------------------------------|-----------------------------|
| Use of the substance/mixture | CARTRIDGES FOR TOOLS, BLANK |
| Recommended uses and restrictions | For professional use only |

1.4. Supplier's details

| Supplier | Department issuing data specification sheet |
|-------------------------------------|---|
| Hilti Qatar W.L.L. | Hilti Entwicklungsgesellschaft mbH |
| Souq Al Rawda | Hiltistraße 6 |
| Salwa Road | 86916 Kaufering - Deutschland |
| P.O. Box 24097 | T +49 8191 906876 |
| Doha Ad Dawḥah - Qatar | |
| T +974 4406 3600 - F +974 4406 3669 | |

1.5. Emergency phone number

| | |
|------------------|---|
| Emergency number | Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +974 4406 3600 |
|------------------|---|

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 | Expert judgment |
|--------------------------|------|-----------------|

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

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| | |
|-----------------------------------|--|
| Precautionary statements (GHS UN) | <p>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P250 - Do not subject to shock, friction, grinding.</p> <p>P280 - Wear eye protection.</p> <p>P372 - Explosion risk.</p> <p>P370+P380+P375 - In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.</p> <p>P401 - Store in accordance with local regulations on explosives.</p> |
|-----------------------------------|--|

2.3. Other hazards which do not result in classification

| | |
|--|--|
| Other hazards not contributing to the classification | This article contains hazardous substances or preparations not intended to be released under normal or reasonably foreseeable conditions of use., The dismantling of the article is prohibited!, Keep away from ignition sources (including static discharges) |
|--|--|

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| | |
|----------|--|
| Comments | <p>max. net explosives weight each cartridge in mg: Caliber 6.8/11 (cal .27 short) white: 130; brown: 140; green: 160; yellow: 180; red: 230; titanium: 230; black: 260 Caliber 6.8/18 (cal .27 long) green: 190; yellow: 220; blue: 300; red: 330; black: 410 Caliber 6.3/10 (cal. 25) green 120; yellow: 190; red: 230; black: 250 Caliber 5.5/16 (cal .22) grey: 105; brown: 120; green: 175; yellow: 210; red: 270</p> <p>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.</p> <p>Propellant powder: glycerol trinitrate containing nitrocellulose powder Mass per cartridge: essentially dependent on the required power (100-400 mg) Priming composition: SINOXID (initiating explosive) Mass per cartridge: 22-33 mg in the mean.</p> <p>Exposed propellant powder outside a cartridge is harmful if swallowed and highly flammable; without tamping no explosion risk.</p> <p>Packed safety cartridges don't represent a significant risk.</p> <p>In case of reaction no dangerous fragments or projectiles will be formed.</p> <p>Mechanical or thermal attempts to expose the primer composition lead to an immediate reaction of the dangerous ingredients.</p> |
|----------|--|

| Name | Product identifier | % | Classification according to the United Nations GHS |
|---------------------|----------------------|---------|--|
| cellulose nitrate | (CAS-No.) 9004-70-0 | 5 – 21 | Explosives, Division 1.1, H201 |
| glycerol trinitrate | (CAS-No.) 55-63-0 | 2 – 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 |
| lead styphnate | (CAS-No.) 15245-44-0 | 0.1 – 3 | Explosives, Unstable explosives, H200 Acute toxicity (oral), Category 4, H302 Acute toxicity (inhalation:dust,mist) Category 4, H332 Reproductive toxicity, Category 1A, H360 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 |
| barium nitrate | (CAS-No.) 10022-31-8 | 0.1 – 3 | Acute toxicity (oral), Category 3, H301 |

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| | | | |
|---------------|---------------------|---------|--|
| | | | Hazardous to the aquatic environment - Acute Hazard Not classified Hazardous to the aquatic environment - Chronic Hazard Not classified |
| copper | (CAS-No.) 7440-50-8 | 0 – 2 | Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 3, H412 |
| zinc | (CAS-No.) 7440-66-6 | 0 – 2 | Hazardous to the aquatic environment — Acute Hazard, Category 1, H400 Hazardous to the aquatic environment — Chronic Hazard, Category 1, H410 |
| diphenylamine | (CAS-No.) 122-39-4 | 0.1 – 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 |
| tetrazene | (CAS-No.) 109-27-3 | 0 – 1 | Explosives, Unstable explosives, H200 Serious eye damage/eye irritation, Category 2A, H319 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 general | In all cases of doubt, or when symptoms persist, seek medical attention. |
| 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 | 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

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

| | |
|--------------------------------|----------------------------------|
| Suitable extinguishing media | Dry powder. Water spray. |
| Unsuitable extinguishing media | Do not use a heavy water stream. |

5.2. Specific hazards arising from the chemical

| | |
|--|---|
| Hazardous decomposition products in case of fire | Carbon monoxide. Carbon dioxide (CO ₂). Nitrous gasses. |
|--|---|

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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 to the regulations, wipe down with water the contaminated 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. |
| Information on mixed storage | Keep away from : Ignition sources. Do not store with: Store according to local legislation. |
| 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. |
|-------------------|--|

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

Eye protection

Safety glasses

Skin and body protection

When using cartridge operated 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 |

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

Additional information Not applicable
Article

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

Carbon monoxide. Carbon dioxide. Nitrogen oxides. Metal oxides. Thermal decomposition can lead to the release of irritating gases and vapours.

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) |
| barium nitrate (10022-31-8) | |
| LD50 oral rat | 50 – 300 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s)) |
| LD50 oral | 355 mg/kg |
| LD50 dermal rat | > 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s)) |
| LC50 Inhalation - Rat | > 1.1 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s)) |
| zinc (7440-66-6) | |
| LD50 oral rat | > 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s)) |

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

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| | |
|---|--|
| STOT-single exposure | Not classified |
| STOT-repeated exposure | Not classified |
| Aspiration hazard | Not classified |
| 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 | 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 |
| lead styphnate (15245-44-0) | |
| EC50 - Crustacea [1] | 7 mg/l |
| diphenylamine (122-39-4) | |
| EC50 - Crustacea [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 |
| barium nitrate (10022-31-8) | |
| EC50 - Crustacea [1] | 9018 mg/l |
| EC50 72h - Algae [1] | > 45.6 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate) |
| tetrazene (109-27-3) | |
| EC50 - Crustacea [1] | 0.14 mg/l |
| copper (7440-50-8) | |
| LC50 - Fish [1] | 200 µg/l (96 h, Salmo gairdneri, Flow-through system, Fresh water, Weight of evidence, Lethal) |
| EC50 - Crustacea [1] | 109 – 798 µg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Weight of evidence, Locomotor effect) |
| EC50 72h - Algae [1] | 230 µg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, Growth rate) |
| zinc (7440-66-6) | |
| LC50 - Fish [1] | 0.169 mg/l (Other, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across, Zinc ion) |
| EC50 - Crustacea [1] | 416 µg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Ceriodaphnia dubia, Static system, Fresh water, Experimental value) |
| ErC50 algae | 0.15 mg/l |

12.2. Persistence and degradability

| | |
|-------------------------------|------------------|
| DX-Cartridge | |
| Persistence and degradability | Not established. |
| glycerol trinitrate (55-63-0) | |
| Not rapidly degradable | |

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| | |
|---------------------------------|---|
| Persistence and degradability | Readily biodegradable in water. |
| Biochemical oxygen demand (BOD) | 53.6 g O ₂ /g substance |
| lead styphnate (15245-44-0) | |
| Not rapidly degradable | |
| diphenylamine (122-39-4) | |
| Not rapidly degradable | |
| Persistence and degradability | Not readily biodegradable in water. |
| ThOD | 2.39 g O ₂ /g substance |
| barium nitrate (10022-31-8) | |
| Not rapidly degradable | |
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |
| tetrazene (109-27-3) | |
| Not rapidly degradable | |
| copper (7440-50-8) | |
| Not rapidly degradable | |
| Persistence and degradability | Biodegradability in soil: not applicable. Biodegradability: not applicable. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |
| zinc (7440-66-6) | |
| Not rapidly degradable | |
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

12.3. Bioaccumulative potential

| | |
|---|---|
| DX-Cartridge | |
| 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). |
| barium nitrate (10022-31-8) | |
| Bioaccumulative potential | Not bioaccumulative. |
| copper (7440-50-8) | |
| Bioaccumulative potential | Bioaccumulation: not applicable. |
| zinc (7440-66-6) | |
| BCF - Fish [1] | 0.002 (40 day(s), Danio rerio, Semi-static system, Fresh water, Read-across) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

12.4. Mobility in soil

| | |
|------------------|-------------------------------------|
| DX-Cartridge | |
| Mobility in soil | No additional information available |

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| | |
|---|---|
| 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. |
| barium nitrate (10022-31-8) | |
| Surface tension | No data available in the literature |
| Ecology - soil | Adsorption to soil is possible. |
| copper (7440-50-8) | |
| Ecology - soil | Adsorbs into the soil. |
| zinc (7440-66-6) | |
| Surface tension | No data available in the literature |
| Ecology - soil | Adsorbs into the 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

| | |
|--|--|
| 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 | Cartridge strips with unused cartridges: Hazardous waste due to risk of explosion. European waste catalogue: 16 04 01* - waste ammunition. If possible use up the cartridges or store them 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 / IMDG / IATA / RID

| ADR | IMDG | IATA | RID |
|---|--|--|--|
| 14.1. UN number or ID number | | | |
| UN 0323 | UN 0323 | UN 0323 | UN 0323 |
| 14.2. UN proper shipping name | | | |
| CARTRIDGES, POWER DEVICE | CARTRIDGES, POWER DEVICE | Cartridges, power device | CARTRIDGES, POWER DEVICE |
| Transport document description | | | |
| UN 0323 CARTRIDGES, POWER DEVICE, 1.4S, (E) | UN 0323 CARTRIDGES, POWER DEVICE, 1.4S | UN 0323 Cartridges, power device, 1.4S | UN 0323 CARTRIDGES, POWER DEVICE, 1.4S |
| 14.3. Transport hazard class(es) | | | |
| 1.4S | 1.4S | 1.4S | 1.4S |
| | | | |

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| ADR | IMDG | IATA | RID |
|--|--|--------------------------------------|--------------------------------------|
| 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) | 1.4S |
| Special provisions (ADR) | 347 |
| Limited quantities (ADR) | 0 |
| Packing instructions (ADR) | P134, LP102 |
| Mixed packing provisions (ADR) | MP23 |
| Transport category (ADR) | 4 |
| Tunnel restriction code (ADR) | E |

Transport by sea

| | |
|-----------------------------|-------------|
| Special provisions (IMDG) | 347 |
| Limited quantities (IMDG) | 0 |
| Packing instructions (IMDG) | P134, LP102 |
| EmS-No. (Fire) | F-B |
| EmS-No. (Spillage) | S-X |
| Stowage category (IMDG) | 01 |
| Stowage and handling (IMDG) | SW1 |
| MFAG-No | 114 |

Air transport

| | |
|---------------------------------|------|
| PCA packing instructions (IATA) | 134 |
| PCA max net quantity (IATA) | 25kg |
| CAO packing instructions (IATA) | 134 |
| Special provisions (IATA) | A165 |

Rail transport

| | |
|----------------------------|-------------|
| Special provisions (RID) | 347 |
| Limited quantities (RID) | 0 |
| Packing instructions (RID) | P134, LP102 |

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

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SECTION 16: Other information

| | |
|-----------------|------------|
| SDS Major/Minor | None |
| Issue date | 20/10/2021 |
| Revision date | 20/10/2021 |
| Supersedes | 12/04/2017 |

| Section | Changed item | Change | Comments |
|---------|--|----------|----------|
| 2.2 | Precautionary statements (GHS UN) | Modified | |
| 3 | Composition/information on ingredients | Modified | |

Abbreviations and acronyms

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
 CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
 DMEL - Derived Minimal Effect level
 DNEL - Derived-No Effect Level
 EC50 - Median effective concentration
 IARC - International Agency for Research on Cancer
 IATA - International Air Transport Association
 IMDG - International Maritime Dangerous Goods
 LC50 - Median lethal concentration
 LD50 - Median lethal dose
 LOAEL - Lowest Observed Adverse Effect Level
 NOAEC - No-Observed Adverse Effect Concentration
 NOAEL - No-Observed Adverse Effect Level
 NOEC - No-Observed Effect Concentration
 OECD - Organisation for Economic Co-operation and Development
 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
 vPvB - Very Persistent and Very Bioaccumulative

| Full text of H-statements: | |
|----------------------------|----------------------------------|
| H200 | Unstable explosives |
| H201 | Explosive; mass explosion hazard |
| H204 | Fire or projection hazard |
| H300 | Fatal if swallowed |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H310 | Fatal in contact with skin |



DX-Cartridge

Safety Data Sheet

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

| | |
|------|---|
| H311 | Toxic in contact with skin |
| H319 | Causes serious eye irritation |
| H330 | Fatal if inhaled |
| H331 | Toxic if inhaled |
| H332 | Harmful if inhaled |
| H360 | May damage fertility or the unborn child |
| 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 |
| H412 | Harmful 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.