

Safety Data Sheet

according to regulation 453/2010/EU amending 1907/2006/EC

Dynadet™ -Cx-0ms

SDS No. : 4055
Issue : 01.0
Date of revising : 2014-01-16

The Power
of Partnership

SECTION 1: Identification of the substance / mixture and of the company / undertaking

1.1. Product identifier

Trade name(s) **Dynadet™-C1-0ms, Dynadet™-C2-0ms, Dynadet™-C4-0ms**

Other means of identification

Other names Not applicable

Chemical name Not applicable

INDEX number as listed in Annex VI of CLP Not applicable

ID number of the C&L inventory Not applicable

CAS number Not applicable

REACH registration no(s) Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified Use(s) SU 2a - Mining, (without offshore industries)

Use(s) advised against Usage of the product only according to existing laws and official permissions.
Not to be used in gaseous environment with hazard of coal dust or fire damp explosion.

Function(s) of substance / mixture Detonators will directly initiate cap sensitive boosters and packaged explosives.
Dynadet™-Cx-0ms is used for the initiation of commercial explosives in quarrying and construction works.

1.3. Details of the supplier of the safety data sheet

Supplier **Orica Sweden AB**
Gyttorp
713 82 Nora
Sweden

Phone / Fax / Email +46 587 85000 / +46 587 25345 / info.gyse@orica.com

Technical support +46 587 85201

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Contact to the responsible
person for safety data sheet

sds.emea@orica.com

1.4. Emergency telephone number

Emergency phone number

For medical advice call: +46 833 12 31
(Swedish Poisons Information Centre)
For chemical emergencies (spill, leak, fire, exposure or accident), call:
Within Sweden: 112
Outside Sweden: Contact local representative

SECTION 2: Hazards identification

Unpackaged detonators are defined as: H201 - Explosive, mass explosion hazard.
Risk of explosion by shock, friction, fire or other sources of ignition.
Shrapnel from detonation may cause burns and wounds.

2.1 Classification of the substance or mixture

The mixture is classified as dangerous within the meaning of Regulation (EC) No 1272/2008.
The preparation is classified as dangerous according to Directive 1999/45/EC.

Classification in accordance with Regulation (EC) No. 1272/2008

Hazard class / category	Hazard statement(s)	Classification method	Additional Information
Expl. 1.1	H201	UN RTDG	CLP - figure 2.1.3

This classification describes UNPACKED detonators. The transport classification can differ depending on the approved packaging.

Wording of Hazard statements (H, EUH): see section 16.

Classification in accordance with Directive 67/548/EEC or Directive 1999/45/EC

Properties or classification letter	R phrases
E	R 2 Risk of explosion by shock, friction, fire or other sources of ignition.

No additional information

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2.2. Label elements

Labelling in accordance with Regulation (EC) No. 1272/2008

Product identifier	Dynadet™-C1-0ms, Dynadet™-C2-0ms, Dynadet™-C4-0ms	
Index or C&L number	Not applicable	
Hazardous component(s)	Lead(II,IV)oxide, Index No.: 082-001-00-6 P.E.T.N., Index No.: 603-035-00-5 Lead diazide, Index No.: 082-003-00-7	
Authorisation number	Not applicable	
Hazard pictogram(s)		
Signal word	Danger	
Hazard statement(s)	H201	Explosive, mass explosion hazard.
Precautionary statement(s)	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P250	Do not subject to grinding / shock / ... / friction.
	P280	Wear protective gloves / protective clothing / eye protection / face protection.
	P370+P380	In case of fire: Evacuate area.
	P372	Explosion risk in case of fire.
	P373	DO NOT fight fire when fire reaches explosives.
Additional Information (EU)	-	
Additional Labelling	-	
Note	By using special approved packaging a reduction of a explosive hazard is possible (Signal word: Warning; Hazard statement: H204 - Fire or projection hazard.). Use of special provisions according to 1272/2008/EC art. 23e.	

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Labelling in accordance with Directive 67/548/EEC or Directive 1999/45/EC

Hazard symbol(s)



Identification of danger

Explosive

R phrases

R 2 Risk of explosion by shock, friction, fire or other sources of ignition.

S phrases

S 15 Keep away from heat.
S 16 Keep away from sources of ignition - No smoking.
S 20/21 When using do not eat, drink or smoke.
S 33 Take precautionary measures against static discharges.
S 36/37/39 Wear suitable protective clothing, gloves and eye / face protection.

Note

Use of special provisions according to 67/548/EEC art. 25(1) and 1999/45/EC art. 12(1).

2.3. Other hazards

Results of PBT and vPvB assessment

No assessment established up to now.

Other hazards

During use of article, a release of lead containing reaction products occurs.
Stythe is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.
All chemicals are potentially dangerous; they should only be handled by properly trained personnel with the necessary care.

Additional Information

Specific concentration limits

Lead(II,IV)oxide, Index No.: 082-001-00-6

C ≥2.5 %	H361f R62	Repr. 1B Repr. Cat. 3
C ≥1.0 %	R20/22	Xn
C ≥0.5 %	H373 R33	STOT RE 2

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SECTION 3: Composition / information on ingredients

Because of the sealed assembly of the detonator, no contact to the ingredients is to be expected under normal use.

3.1. Substances

Not applicable

Substance	Registration No. Index or C&L number	EC No. CAS No.	Classification (1272/2008/EC) Classification (67/548/EEC)	Content (w/w)
-	-	-	-	-
-	-	-	-	-

3.2. Mixtures

Substance	Registration No. Index or C&L number	EC No. CAS No.	Classification (1272/2008/EC) Classification (67/548/EEC)	Content (w/w)
Lead(II,IV)oxide	Not applicable 082-001-00-6	215-235-6 1314-41-6	H360Df, H332, H302, H373, H400, H410 R 61-20/22-33-50/53-62	5-6
P.E.T.N.	Not applicable 603-035-00-5	201-084-3 78-11-5	H200 R 3	4-5
Lead diazide	Not applicable 082-003-00-7	236-542-1 13424-46-9	H200, H360Df, H332, H302, H373, H400, H410 R 61-3-20/22-33-50/53-62	1-2

The percentages of the ingredients relate only to the detonator.

Comments

-

Additional information

Wording of R phrases and hazard statements (H, EUH): See section 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

General advice

- Remove affected person from the danger area and lay down.
- Do not leave affected person unattended.
- When in doubt or if symptoms are observed, get medical advice.
- If unconscious place in recovery position and seek medical advice.

In case of eye contact

- In case of eye irritation consult an ophthalmologist.
- Shrapnel from detonation may cause great damage, immediately consult an ophthalmologist.

In case of skin contact

- In case of skin irritation, consult a physician.
- Shrapnel from detonation may cause burns and wounds, possibly blood poisoning, consult a physician.

If swallowed

- Rinse mouth.
- Consult a physician.

If inhaled

- In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still.
- Get medical attention if any discomfort continues.
- In case of respiratory tract irritation, consult a physician.
- If breathing is irregular or stopped, administer artificial respiration.
- Apply cortisone spray at early stage.
- Symptoms may develop several hours following exposure medical observation therefore necessary for at least 48 hours.

4.2. Most important symptoms and effects, both acute and delayed

Acute symptoms / effects

Shrapnel from detonation may cause burns and wounds.

Delayed symptoms / effects

If decomposition products are inhaled the following symptoms can occur:

- Pulmonary oedema

Self-protection for first-aider

First aider: Pay attention to self-protection!

4.3. Indication of any immediate medical attention and special treatment needed

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SECTION 5: Fire fighting measures

Product is an explosive.
Keep unauthorised persons away.
Warn neighbourhood announcing risk of explosion.

5.1. Extinguishing media

Suitable extinguishing media No fire-fighting attempts, risk of explosion.

Unsuitable extinguishing media Not applicable

5.2. Special hazards arising from the substance or mixture

Product is an explosive.

Possible combustion gases or vapours

In case of fire may be liberated:

- Nitrogen oxides (NO_x)
- Carbon monoxide (CO)
- Carbon dioxide (CO₂)
- Lead containing reaction products

5.3. Advice for firefighters

Special protective equipment for fire fighting

In case of fire: Wear self-contained breathing apparatus.

Measures in case of adjacent fire (Fire has not yet reached product)

Co-ordinate fire-fighting measures to the fire surroundings.

Use water spray jet to protect personnel and to cool endangered containers.

Move undamaged containers from immediate hazard area if it can be done safely.

Measures in case of product fire (Fire has just reached the product or is about to reach it)

No fire-fighting attempts, risk of explosion.

Immediately evacuate danger zone and seek safe cover.

Additional Information

Restrict the number of action force members in the hazard area.

Do not inhale explosion and combustion gases.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

For non-emergency personnel	Avoid substance contact. Do not handle unprotected. Respect emergency plans. Evacuate danger area and notify supervisor. Ask for support by competent person.
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For emergency responders	Close off hazard area. Ask for support by competent person.
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6.2. Environmental precautions

Due to the consistency and product packaging spillage of ingredients is not likely.
No special environmental measures are necessary.

6.3. Methods and material for containment and cleaning up

Notes on prevention of the spread of spilled materials	Due to the consistency and product packaging spillage of ingredients is not likely.
Instructions for cleaning after spillage	Due to the consistency and product packaging spillage of ingredients is not likely.
Additional Information	When in doubt contact supplier.

6.4. Reference to other sections

Note also section 7, 8, 10 and 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Technical measures / Precautions

Only to be handled by authorized persons.
The explosives must be under supervision and unavailable for unauthorized persons.
Available for use in ground temperatures -25 °C to a maximum of 50 °C.
Handle with care - avoid bumps, friction and impact.
Keep away from sources of ignition - No smoking.
Not to be used in gaseous environment with hazard of coal dust or fire damp explosion.

General occupation hygiene

Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures / Storage conditions

Stacks of cases should be no more than 2 metres high.

Requirements for storage areas and containers

Store in original container if possible.

Common storage instruction

Storage of explosives and explosive articles should be agreed with national authorities.

Incompatible products

Respect restrictions according to national law.

Storage temperature

Best stored at ambient temperatures of 0 °C to 40 °C

Relative humidity (%)

Store under dry conditions.

Stability in storage

Stable under normal storage conditions.

Quantitative restrictions

Maximum storage volume should be agreed with national authorities.

Maximum period of storage

Storage life of 2 years in stable, temperate conditions.

Storage class

Explosive substances.

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7.3. Specific end use(s)

Read instructions before use.

No other specific end uses than those specified in section 1.2 are provided.

Usage of the product only according to existing laws and official permissions.

SECTION 8: Exposure controls / personal protection

Because of the sealed assembly of detonators no contact with the ingredients is to be expected.

In case of broken / damaged detonators a contact with the ingredients can not be excluded.

8.1. Control parameters

Exposure limit values

Components / CAS No.	Value	Limit	Basis	Comments
Lead and inorganic compounds (as Pb) 7439-92-1	Long term Long term Long term	0.15 mg/m ³ (inhalable aerosol) 0.1 mg/m ³ (inhalable aerosol) 0.15 mg/m ³ (respirable aerosol)	98/24/EC GESTIS GESTIS	EU ¹⁾ SE SE
Lead(II,IV)oxide 1314-41-6	-	See "Lead and inorganic compounds (as Pb)"	-	-
P.E.T.N. 78-11-5	-	Not established	-	-
Lead diazide 13424-46-9	-	See "Lead and inorganic compounds (as Pb)"	-	-
Dust	Long term Long term	10 mg/m ³ (inhalable dust) 5 mg/m ³ (respirable aerosol)	GESTIS GESTIS	SE SE
Carbon dioxide 124-38-9	Long term Long term Short term	9000 mg/m ³ ; 5000 ppm 9000 mg/m ³ ; 5000 ppm 18000 mg/m ³ ; 10000 ppm	GESTIS GESTIS GESTIS	EU ²⁾ SE SE

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Carbon monoxide 630-08-0	Long term	40 mg/m ³ ;	35 ppm	GESTIS	SE
	Short term	120 mg/m ³ ;	100 ppm	GESTIS	SE
Nitrogen dioxide 10102-44-0	Long term		0.2 ppm	GESTIS	EU ³⁾
	Long term	4 mg/m ³ ;	2 ppm	GESTIS	SE
	Short term	10 mg/m ³ ;	5 ppm	GESTIS	SE ⁴⁾
Nitrogen monoxide 10102-43-9	Long term	30 mg/m ³ ;	25 ppm	GESTIS	SE
	Short term	60 mg/m ³ ;	50 ppm	GESTIS	SE

¹⁾ Binding Occupational Exposure Limit Value - BOELV.

²⁾ Indicative Occupational Exposure Limit Values and Limit Values for Occupational Exposure.

³⁾ Proposal, Indicative Occupational Exposure Limit Values.

⁴⁾ Ceiling limit value

Biological limit values

Components / CAS No.	Value	Limit	Specimen	Sampling time
Lead and inorganic compounds (as Pb) 7439-92-1	Lead Lead	70 µg/100 mL (EU) 1.5 µmol/L (SE) (woman, <50 years: 0.8 µmol/L)	Blood Blood	No restrictions No restrictions
Lead(II,IV)oxide 1314-41-6	-	See "Lead and inorganic compounds (as Pb)"	-	-
P.E.T.N. 78-11-5	-	Not established	-	-
Lead diazide 13424-46-9	-	See "Lead and inorganic compounds (as Pb)"	-	-
Carbon dioxide 124-38-9	-	Not established	-	-
Carbon monoxide 630-08-0	-	Not established	-	-

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Nitrogen dioxide 10102-44-0	-	Not established	-	-
Nitrogen monoxide 10102-43-9	-	Not established	-	-

-

Recommended monitoring methods

The methods for measuring workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

Additional exposure limits under processing conditions

Route of exposure	Exposure frequency	DNEL	Critical component	Comments
Inhalation	Long term - systemic effects	220.4 mg/m ³	P.E.T.N.	Workers

PNEC:

Lead: Fresh water: 6.5 µg/L, Marine water: 3.4 µg/L, STP: 100 µg/L, Sediment (fresh water): 174 mg/kg dw, Sediment (marine water): 164 mg/kg dw, Soil: 147 mg/kg dw, Oral: 10.9 mg/kg food

Lead(II,IV)oxide: Fresh water: 6.5 µg/L, Marine water: 3.4 µg/L, STP: 100 µg/L, Sediment (fresh water): 174 mg/kg dw, Sediment (marine water): 164 mg/kg dw, Soil: 147 mg/kg dw, Oral: 10.9 mg/kg food

P.E.T.N.: Fresh water: 0.3 mg/L

8.2. Exposure controls

Limitation and monitoring of occupational exposure

Product related measures to prevent exposure

Keep cases closed and store in a cool, well ventilated place.
Avoid damage of the article.

Instructive measures to prevent exposure

Do not eat, drink or smoke when using this product.
Wash hands before breaks and after work.
Use skin care measures in accordance with professional association's rules.
When working with substances minimum standards for protective measures in accordance with professional association's rules should be respected.

Organizational measures to prevent exposure

Minimize the time spent in the danger zone.
Reduce staff in the danger zone to the required level.
Separate storage facilities for street and work clothes should be available when a risk is to be expected from contamination of work clothes.

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Technical measures to prevent exposure

See section 7. No additional measures necessary.

Individual protection measures, such as personal protective equipment

Technical measures and the application of suitable work processes have priority over personal protection equipment.

The quality of the protective clothing resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance of the protective clothing to chemicals together with the supplier.

Professional association's rules should be respected.

Eye / face protection

Suitable eye protection: Eye glasses with side protection

DIN-/EN-Norm: DIN EN 166

Hand protection

Suitable gloves type: Half-gloves

Suitable material: NBR (Nitrile rubber)

DIN-/EN-Norm: DIN EN 388

Skin protection

Work clothes made from cotton meets the requirements.

Choice and design of the work clothes to be used depends on the results of the risk assessment for the specific working environment.

It is necessary to consider the following needs of protection:

- Protection against heat and open fire (clothing must not melt and not be flammable);
- Protection against contact with chemicals (the fabric shall not absorb particles of explosives as this would make the fabric more flammable);
- Protection from electrostatic charging;
- Protective clothing used to protect against further hazards (reflective clothing, weather proof clothing) must comply with the above requirements.

Respiratory protection

No personal respiratory protective equipment normally required.

Respiratory protection necessary at: insufficient ventilation

Suitable respiratory protection apparatus: Particle filter device (DIN EN 143) Type P2/P3

Hygiene measures

Do not eat, drink or smoke when using this product.

Wash hands before breaks and after work.

Thermal hazards

No thermal hazard is to be expected.

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Environmental exposure controls

Product related measures to prevent exposure

Not applicable, because of the sealed assembly of the detonator.

Instructive measures to prevent exposure

Not applicable, because of the sealed assembly of the detonator.

Organizational measures to prevent exposure

Not applicable, because of the sealed assembly of the detonator.

Technical measures to prevent exposure

Not applicable, because of the sealed assembly of the detonator.

Limitation and monitoring of Consumer exposure

Measures relating to the use of the substance (as such or in mixtures) by the consumer

Not applicable, the exposure of consumers is not to be expected.

Measures relating to the use of the substance in articles

Not applicable, the explosives inside of detonators are consumed during detonation.

SECTION 9: Physical and chemical properties

Because of the complex assembly of the article information to most of the requested physical and chemical properties can't be given.

9.1. Information on basic physical and chemical properties

Appearance

Solid, complex assembly

Odour

Odourless

Odour threshold

Not applicable

pH

Not applicable

Melting point / freezing point

Not applicable

Initial boiling point and boiling range

Not applicable

Flash point

No data available

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Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper / lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Not applicable
Solubility(ies)	Not applicable
Partition coefficient: n-octanol / water	Not applicable
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Not applicable
Explosive properties	Explosive
Oxidising properties	Not applicable

9.2. Other information

Risk of explosion by shock, friction, fire or other sources of ignition (R 2).
See Technical Data Sheet for more information.

SECTION 10: Stability and reactivity

10.1. Reactivity

Risk of explosion by shock, friction, fire or other sources of ignition (R 2).
In case of impact or pressure influence:

- Danger of explosion
- Danger of bursting

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10.2. Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3. Possibility of hazardous reactions

Fire, heat, electrostatic or impact may cause the product to explode.

10.4. Conditions to avoid

Mechanical influences (e.g. shock, pressure, impact, friction).

Fire, sparks or other ignition sources.

Electrostatic discharges.

10.5. Incompatible materials

Contact to acids and bases.

10.6. Hazardous decomposition products

Lead containing reaction products.

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity of

Lead and inorganic compounds (as Pb), CAS No. 7439-92-1

Route of exposure	Value	Effective dose	Species	Basis	Comments
-	-	-	-	-	-

No data available

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Acute toxicity of P.E.T.N., CAS No. 78-11-5

Route of exposure	Value	Effective dose	Species	Basis	Comments
Oral	LD ₅₀	1660 mg/kg	Rat	¹⁾	-

¹⁾ GESTIS-database

Skin corrosion / irritation Ingredients are not classified.

Serious eye damage / eye irritation Ingredients are not classified.

Respiratory or skin sensitization No data available

Repeated dose toxicity No data available

Germ cell mutagenicity No data available

Carcinogenicity No data available

Reproductive toxicity H360Df - May damage the unborn child. Suspected of damaging fertility.

STOT - single exposure The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure H373 - May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Ingredients are not classified.

Information on likely routes of exposure

Inhalation of lead fumes and dust.

Mixture versus substance information

On the basis of the morphology of the product, no hazardous properties are to be expected when it is handled and used with appropriate care.

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Other information

The following applies to lead compounds in general:

Due to the poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication. After a latency period of several hours, metallic taste, nausea, vomiting, and colic's occur, in many instances followed by shock. Chronic uptake causes peripheral muscular weakness ("drop-wrist"), anaemia, and central nervous disorders.

Women of child-bearing age should not be exposed to the substance over longer periods of time (observe critical threshold).

Further data:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity of	Lead and inorganic compounds (as Pb), CAS No. 7439-92-1
Acute fish toxicity	LC ₅₀ (96 h): 2.8 mg/L (median)
Chronic fish toxicity	No data available
Acute toxicity to daphnia and other aquatic invertebrates	EC ₅₀ (48 h): 4.46 mg/L (median)
Chronic toxicity to daphnia and other aquatic invertebrates	No data available
Acute toxicity to algae	No data available
Chronic toxicity to algae	No data available
M-Factor	Not applicable

Further toxicological information

No data available

Toxicity of	P.E.T.N., CAS No. 78-11-5
Acute fish toxicity	LC ₅₀ (96 h): 27000 mg/L (Pimephales promelas)
Chronic fish toxicity	No data available

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Acute toxicity to daphnia and other aquatic invertebrates LC₅₀ (48 h): 8500 mg/L (Daphnia magna)

Chronic toxicity to daphnia and other aquatic invertebrates No data available

Acute toxicity to algae No data available

Chronic toxicity to algae No data available

M-Factor Not applicable

Further toxicological information

No data available

12.2. Persistence and degradability

Biodegradation Not applicable

Hydrolysis No data available

12.3. Bioaccumulative potential

Partition coefficient: n-octanol / water No data available

Bioconcentration factor (BCF) No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment not available as chemical safety assessment not required / not conducted.

12.6. Other adverse effects

No data available

C.M. della Valchiavenna Pr.0009985 del 24-11-2023 Cat.7 CL.10 F.9

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SECTION 13: Disposal considerations

Waste material must be disposed of in accordance with Directive on waste 2008/98/EC as well as other national and local regulations. It is recommended to stay in contact with the authorities and / or waste disposal company to request further information about the recovery or disposal.

13.1. Waste treatment methods

Leave product in original containers. No mixing with other waste. If possible take advantage of take-back systems for products and packaging.

Product residues

Burn under supervision of an expert at a government-approved explosive burning ground or destroy, by detonation in boreholes, in accordance with applicable local, provincial and federal laws.

Packaging

Handle uncleaned containers like the product itself.

Waste classification according to EWC

The allocation of waste identity numbers / waste descriptions must be carried out according to the EWC, specific to the industry and process. Evidence for disposal must be provided.

List of proposed waste codes / waste designations in accordance with EWC:

16 04 03 Other waste explosives

SECTION 14: Transport information

14.1. UN number

0030 (when packaging fits to transport hazard class 1.1B)

0456 (when packaging fits to transport hazard class 1.4S)

14.2. UN proper shipping name

DETONATORS, ELECTRIC

14.3. Transport hazard class(es)

1.1B (when packaging is approved by the notified body according to this transport hazard class)

1.4S (when packaging is approved by the notified body according to this transport hazard class)

14.4. Packing group

Not applicable

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14.5. Environmental hazards

Dangerous for the environment No

IMDG Marine pollutant No

14.6. Special precautions for user

Attention: explosive article

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Name of product Not applicable, transport in bulk is not to be expected.

Required type of ship -

Pollution category -

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

European regulations	Directive 67/548/EEC (Dangerous Substance Directive)
	Directive 1999/45/EC (Dangerous Preparation Directive)
	Directive 2008/98/EC (Waste Framework Directive)
	Regulation 1907/2006/EC (REACH)
	Regulation 1272/2008/EC (CLP)
National regulations	Approval conditions must be respected.
	Compare national regulations for handling with explosives.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

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SECTION 16: Other information

List of relevant H and P statements

H200	Unstable explosives.
H201	Explosive; mass explosion hazard.
H204	Fire or projection hazard.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P250	Do not subject to grinding / shock / ... / friction.
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P370+P380	In case of fire: Evacuate area.
P372	Explosion risk in case of fire.
P373	DO NOT fight fire when fire reaches explosives.

List of relevant R and S phrases

R 2	Risk of explosion by shock, friction, fire or other sources of ignition.
R 3	Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R 20/22	Harmful by inhalation and if swallowed.
R 33	Danger of cumulative effects.
R 50/53	Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.
R 61	May cause harm to the unborn child.
R 62	Possible risk of impaired fertility.
S 15	Keep away from heat.
S 16	Keep away from sources of ignition - No smoking.
S 20/21	When using do not eat, drink or smoke.
S 33	Take precautionary measures against static discharges.
S 36/37/39	Wear suitable protective clothing, gloves and eye / face protection.

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Training advice

Employees should be trained before handling the substance.
Refresher training should be scheduled at regular intervals and in accordance with legal requirements.

Recommended restrictions on use

Please note the use identified in section 1.2

Further information

ID	Identification number
PBT	Persistent, bioaccumulative and toxic
vPvB	Very persistent and very bioaccumulative
C&L	Classification and Labelling
EC No.	The three European lists of substances from the previous EU chemicals regulatory framework, EINECS, ELINCS and the NLP-list, in combination are called the EC Inventory. The EC Inventory is the source for the seven-digit EC number, an identifier of substances commercially available within the European Union.
CAS No.	Chemical Abstracts Service Number
Repr. 1B	Reproductive toxicity, Hazard Category 1B
Repr. Cat. 3	Toxic for reproduction, category 3
E	Explosive
Xn	Harmful
STOT RE 2	Specific Target Organ Toxicity — repeated exposure, Hazard category 2
UN RTDG	United Nations Regulations on the Transport of Dangerous Goods
Expl. 1.1	Explosives, Division 1.1
Expl. 1.4	Explosives, Division 1.4
R phrases	Risk phrases
S phrases	Safety phrases
EUH	European Hazard Statement
CLP	Regulation (EC) No 1272/2008 of the European parliament and of the council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
REACH	Regulation (EC) No 1907/2006 of the European parliament and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

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K _{OW}	Octanol-water partition coefficient
DIN-/EN Norm	German Industry Standard / European Standard
P2/P3	Particle filter category P2/P3
BCF	Bioconcentration factor
LD ₅₀	Median lethal dose
LC ₅₀	Median lethal Concentration
EC ₅₀	The effective concentration of substance that causes 50% of the maximum response.
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
STP	Sewage Treatment Plant
dw	Dry weight
SU	Sector of Use
EWC	European Waste Catalogue
SE	Sweden
EU	European Union
EC	European Community
EEC	European Economic Community

Sources of key data used to compile the Safety Data Sheet

GESTIS Database
TOXNET Database
Dynadet™-Cx-0ms Technical Data Sheet

Information which has been added, deleted or revised

Complete revision in the context of adaptations under Regulation 453/2010/EU.

*The information contained is based on the present state of our knowledge.
It characterizes the product with regard to the appropriate safety precautions.
It does not represent any guarantee with regard to product.*