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

1.1. Product identifier

Trade name(s) **i-kon™**
i-kon™ VS
i-kon™ RX

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.

Function(s) of substance / mixture Detonators for the initiation of capsule-sensitive explosive agents and detonating-cords.

1.3. Details of the supplier of the safety data sheet

Supplier **Orica Norway AS**
Røykenveien 18
3412 LIERSTRANDA
Norway

Phone / Fax / Email +47 32 22 91 00 / +47 32 22 91 01 / nordics@orica.com

Technical support +47 32 22 91 00

Safety Data Sheet

according to REACH

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

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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: +47 22 59 13 00

For chemical emergencies (spill, leak, fire, exposure or accident), call:
110

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 and Regulation FOR-2012-06-16 No. 622.

The preparation is classified as dangerous according to Directive 1999/45/EC and Regulation FOR-2002-07-16 No. 1139.

Classification in accordance with Regulation (EC) No. 1272/2008 and Regulation FOR-2012-06-16 No. 622

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 and Regulation FOR-2002-07-16 No. 1139

Properties or classification letter	R phrases
E	R2 Risk of explosion by shock, friction, fire or other sources of ignition.

No additional information


i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

2.2. Label elements

Labelling in accordance with Regulation (EC) No. 1272/2008 and Regulation FOR-2012-06-16 No. 622

Product identifier	i-kon™ i-kon™ VS i-kon™ RX	
Index or C&L number	Not applicable	
Hazardous component(s)	P.E.T.N., Index No.: 603-035-00-5 Lead diazide, Index No.: 082-003-00-7	
Authorization 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.	

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

Labelling in accordance with Directive 67/548/EEC or Directive 1999/45/EC and Regulation FOR-2002-07-16 No. 1139

Hazard symbol(s)



Identification of danger

Explosive

R phrases

R2

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

S phrases

S15

Keep away from heat.

S16

Keep away from sources of ignition — No smoking.

S20/21

When using do not eat, drink or smoke.

S33

Take precautionary measures against static discharges.

S36/37/39

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

Stythe is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

During use of article, a release of lead containing reaction products occurs.

All chemicals are potentially dangerous; they should only be handled by properly trained personnel with the necessary care.

The yellow insulation of the lead wire contain the following substance of very high concern:

- Lead sulfochromate yellow (C.I. Pigment Yellow 34); 0.9 %(w/w);
CAS No: 1344-37-2, EC No: 215-693-7

Additional Information

Specific concentration limits

Not applicable

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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.
The shell contains less than 1g of explosives.

3.1. Substances

Not applicable

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

3.2. Mixtures

Substance	Registration No. <i>Index or C&L number</i>	EC No. <i>CAS No.</i>	Classification (1272/2008/EC) <i>Classification (67/548/EEC)</i>	Content (w/w)
P.E.T.N.	Not applicable <i>603-035-00-5</i>	201-084-3 <i>78-11-5</i>	H200 <i>R 3</i>	4.5-5.5
Lead diazide	Not applicable <i>082-003-00-7</i>	236-542-1 <i>13424-46-9</i>	H200, H360Df, H332, H302, H373, H400, H410 <i>R 61-3-20/22-33-50/53-62</i>	0.7-0.9

The percentages of the ingredients relate only to the detonator without lead wire.

Comments

-

Additional information

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

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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!

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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

-

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.

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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.

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.

For emergency responders

Close off hazard area.
Ask for support by competent person.

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.

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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.
Operating temperature range from -20 °C to +60 °C.
Handle with care - avoid bumps, friction and impact.
Keep away from sources of ignition - No smoking.
Not to be used in mines 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

The cases should be stacked in the manner designated on the cases.

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

Store between 0 °C and +40 °C.

Relative humidity (%)

Store under normal 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 up to 2 years.

Storage class

Explosive substances.

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.

Safety Data Sheet

according to REACH

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

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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	0.15 mg/m ³ (inhalable aerosol)	98/24/EC	EU ¹⁾
	Long term	0.05 mg/m ³ (Dust and Smoke)	-	NO ²⁾
	Short term	0.15 mg/m ³ (Dust and Smoke)	-	NO ²⁾
P.E.T.N. 78-11-5	-	Not established	-	-
Lead diazide 13424-46-9	-	See "Lead and inorganic compounds (as Pb)"	-	-
Dust	Long term	10 mg/m ³ (inhalable dust)	-	NO ²⁾
	Long term	5 mg/m ³ (respirable aerosol)	-	NO ²⁾
Carbon dioxide 124-38-9	Long term	9000 mg/m ³ ; 5000 ppm	GESTIS	EU ³⁾
	Long term	9000 mg/m ³ ; 5000 ppm	-	NO ²⁾
	Short term	9000 mg/m ³ ; 5000 ppm	-	NO ²⁾
Carbon monoxide 630-08-0	Long term	29 mg/m ³ ; 25 ppm	-	NO ²⁾
	Short term	100 ppm	-	NO ²⁾
Nitrogen dioxide 10102-44-0	Long term	0.2 ppm	GESTIS	EU ⁴⁾
	Long term	0.6 mg/m ³ ; 1.1 ppm	-	NO ²⁾
	Short term	1.2 mg/m ³ ; 2.2 ppm	-	NO ²⁾
Nitrogen monoxide 10102-43-9	Long term	30 mg/m ³ ; 25 ppm	-	NO ²⁾
	Short term	45 mg/m ³ ; 37.5 ppm	-	NO ²⁾

Safety Data Sheet

according to REACH

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

The Power
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- 1) Binding Occupational Exposure Limit Value - BOELV.
- 2) Administrative norms for pollution of the atmosphere.
- 3) Indicative Occupational Exposure Limit Values and Limit Values for Occupational Exposure:
- 4) Proposal, Indicative Occupational Exposure Limit Values.

Biological limit values

Components / CAS No.	Value	Limit	Specimen	Sampling time
Lead and inorganic compounds (as Pb) 7439-92-1	Lead	70 µg/100 mL (EU)	Blood	No restrictions
	Lead	1.5 µmol/L (NO) (Women of childbearing age: 0.5 µmol/L)	Blood	No restrictions
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	-	-
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.

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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

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.
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.

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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.

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.

Safety Data Sheet

according to REACH

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

The Power
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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
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

Safety Data Sheet

according to REACH

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

The Power
of Partnership

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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 (R2).
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 (R2).

In case of impact or pressure influence:

- Danger of explosion
- Danger of bursting

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.

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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 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

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

Skin corrosion / irritation No data available

Serious eye damage / eye irritation No data available

Respiratory or skin sensitization No data available

Repeated dose toxicity No data available

Germ cell mutagenicity No data available

Carcinogenicity No data available

Safety Data Sheet

according to REACH

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

The Power
of Partnership

For internal use only!

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

No aspiration toxicity classification.

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.

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

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

Acute fish toxicity

LC₅₀ (96 h): 27000 mg/L (Pimephales promelas)

Chronic fish toxicity

No data available

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

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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

Acute fish toxicity LC₅₀ (96 h): 2.8 mg/L (median)

Chronic fish toxicity No data available

Acute toxicity to daphnia and other aquatic invertebrates EC₅₀ (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

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

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

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

SECTION 13: Disposal considerations

Waste material must be handled in accordance with the waste regulation (FOR-2004-06-01 no. 930). For further information about handling waste material please ask the supervisory authority (Directorate for Civil Protection and Emergency Planning) or Orica technical service.

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

i-kon™ (1.1B, 1.4B, 1.4S)

SDS No. : 4028
Issue : 01.0
Date of revising : 2013-08-13

For internal use only!

SECTION 14: Transport information

14.1. UN number

0030 (when packaging fits to transport hazard class 1.1B)
0255 (when packaging fits to transport hazard class 1.4B)
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)
1.4B (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

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 -

i-kon™ (1.1B, 1.4B, 1.4S)

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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

FOR-2002-07-16 no. 1139 (Labeling regulation)
FOR-2004-06-01 no. 930 (Waste regulation)
FOR-2008-05-30 no. 516 (REACH regulation)
FOR-2012-06-16 no. 622 (CLP regulation)
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.

SECTION 16: Other information

List of relevant H and P statements

H200	Unstable explosives.
H201	Explosive; mass explosion hazard.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H360Df	May damage the unborn child. 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.

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List of relevant R and S phrases

R2	Risk of explosion by shock, friction, fire or other sources of ignition.
R3	Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R20/22	Harmful by inhalation and if swallowed.
R33	Danger of cumulative effects.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R61	May cause harm to the unborn child.
R62	Possible risk of impaired fertility.
S15	Keep away from heat.
S16	Keep away from sources of ignition — No smoking.
S20/21	When using do not eat, drink or smoke.
S33	Take precautionary measures against static discharges.
S36/37/39	Wear suitable protective clothing, gloves and eye / face protection.

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
E	Explosive
UN RTDG	United Nations Regulations on the Transport of Dangerous Goods

Safety Data Sheet

according to REACH

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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.
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
NO	Norway
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
i-kon™ Technical Data Sheet

Safety Data Sheet

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Information which has been added, deleted or revised

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

Regulation 453/2010/EU is current not included in the Norwegian legislation, but all sections of this safety data sheet are based on it. The safety data sheet will be revised if the deviation from the Norwegian law text occurs.

*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.*