

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name

Exel™ Starter

Product no.

-

REACH registration number

Not applicable

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

Relevant identified uses of the substance or mixture

SU2a - Mining (without offshore industries)

Uses advised against

-

The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address

Orica Sweden AB	Dexploc A/S
Gyttorp	Smedeland 7
713 82 Nora	DK - 2600 Glostrup
Sweden	Denmark
Tel. +46 587 85000	Tel. +45 43 45 15 38

Contact person

-

E-mail

sds.emea@orica.com / info@dexploc.com

SDS date

2017-04-03 / 2021-05-01

SDS Version

1.0

1.4. Emergency telephone number

Dial 112, 24 h service. Ask for poison information. See section 4 "First aid measures".

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Expl. 1.1; H201
Acute Tox. 4; H302
Acute Tox. 3; H311
Carc. 2; H351
Repr. 1; H360D
Lact.; H362
STOT RE 1; H372
Aquatic Acute 1; H400
Aquatic Chronic 2; H411
See full text of H-phrases in section 16.

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger

Hazard statement(s)

Explosive; mass explosion hazard. (H201)

Safety statement(s)

General -

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210).

Do not subject to shock/grinding/friction. (P250).

Wear protective clothing/protective gloves/eye protection/face protection. (P280).

Response

DO NOT fight fire when fire reaches explosives. (P373).

In case of fire: Evacuate area. (P370+P380).

Explosion risk. (P372).

Storage -

Disposal -

Identity of the substances primarily responsible for the major health hazards

HMX, Red lead, Lead azide

2.3. Other hazards

This product contains teratogenic substances, which may cause long-term adverse effects to the unborn foetus.

The product contains one or several substance(s) included in ECHA's list of Substances of Very High Concern (SVHC)

Additional labelling

-

Additional warnings

-

VOC

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SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME: HMX
 IDENTIFICATION NOS.: CAS-no: 2691-41-0 EC-no: 220-260-0 REACH-no: 01-2119964438-25
 CONTENT: 40-60%
 CLP CLASSIFICATION: Expl. 1.1, Acute Tox. 4, Acute Tox. 3
 H201, H302, H311

NAME: Red lead
 IDENTIFICATION NOS.: CAS-no: 1314-41-6 EC-no: 215-235-6 REACH-no: 01-2119517589-27
 CONTENT: 15 - <25%
 CLP CLASSIFICATION: Acute Tox. 4, STOT RE 1, Carc. 2, Repr. 1A, Lact., Aquatic Acute 1, Aquatic Chronic 1
 H302, H332, H351, H362, H372, H400, H410, H360D (M-acute = 10) (M-chronic = 1)

NAME: PETN
 IDENTIFICATION NOS.: CAS-no: 78-11-5 EC-no: 201-084-3 REACH-no: 01-2119557827-23
 CONTENT: 5 - <10%
 CLP CLASSIFICATION: Unst. Expl.
 H200

NAME: Aluminium powder
 IDENTIFICATION NOS.: CAS-no: 7429-90-5 EC-no: 231-072-3 REACH-no: 01-2119529243-45

According to EC-Regulation 2015/830

CONTENT:	2.5 - <5%
CLP CLASSIFICATION:	Flam. Sol. H228
NAME:	Lead azide
IDENTIFICATION NOS.:	CAS-no: 13424-46-9 EC-no: 236-542-1 REACH-no: 01-2119475503-38 2119475503-
CONTENT:	2.5 - <5%
CLP CLASSIFICATION:	Unst. Expl., Acute Tox. 4, STOT RE 2, Repr. 1A, Aquatic Acute 1 H200, H302, H332, H360, H373, H400 (M-acute = 1)

(*) See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

ATEmix(inhale, vapour) > 20
ATEmix(Dermal) = 505,472 - 758,208
ATEmix(oral) = 553,328 - 829,992
N chronic (CAT 2) Sum = $\sum(Ci/(M(\text{chronic})^{*25}) * 0.1 * 10^{CATi}) = 6,7552 - 10,1328$
N acute (CAT 1) Sum = $\sum(Ci/M(\text{acute})^{*25}) = 6,8736 - 10,3104$

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. The doctor can contact The National Poisons Information Service (dial 111, 24 h service). Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Due to the sealed assembly of the article, no contact with the ingredients is to be expected under normal use.

Inhalation

Bring the person into fresh air and stay with him.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with soap and water. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water or isotonic water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure to flush under the upper and lower eyelids. If irritation continues, contact a doctor. Continue flushing during transport.

Ingestion

In the case of ingestion, contact a doctor immediately and bring the safety data sheet or label. If the person is conscious, give them water. DO NOT try to induce vomiting, unless this is recommended by a doctor. Hold head facing down to prevent vomit returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

Burns

Rinse with water until the pain stops then continue to rinse for a further 30 minutes.

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

Nothing special

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

Nothing special

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

DO NOT attempt firefighting, risk of explosion.

5.2. Special hazards arising from the substance or mixture

The product is an explosive. In case of fire, the following products may be liberated: Nitrogen oxides (NOX), Carbon monoxide (CO), Carbon dioxide (CO₂), Lead containing reaction products.

5.3. Advice for firefighters

DO NOT attempt firefighting, risk of explosion. Immediately evacuate the danger zone and seek safe cover. Restrict the number of emergency responders in the hazard area. Do not inhale explosion and combustion gases. Collect contaminated fire extinguishing water separately. Do not allow to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid contact with the substance. Wear suitable protective equipment before handling. Follow emergency procedures. Evacuate the danger area and notify your supervisor. Ask for assistance from a competent person.

For emergency responders: Close off the hazard area. Ask for assistance from a competent person.

6.2. Environmental precautions

Due to the consistency and product packaging spillage of ingredients is not likely.

6.3. Methods and material for containment and cleaning up

Due to the consistency and product packaging spillage of ingredients is not likely.

6.4. Reference to other sections

See section on "Disposal considerations" in regard of handling of waste. See section on 'Exposure controls/personal protection' for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Only to be handled by authorised persons. The explosives must be under supervision and kept away from unauthorised persons. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not subject to grinding, shock, friction. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed outside of the workplace. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Store in original packaging if possible. Explosives and explosive articles should be stored in accordance with the licence issued by the relevant national authority. Store under cool conditions. Store under dry conditions. Stable under normal storage conditions. Maximum storage quantity should be agreed with national authorities.

Storage temperature

No data available.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

Lead and inorganic compounds (as Pb)

Long-term exposure limit (8-hour TWA reference period): - ppm | 0.1 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | - mg/m³

Nitrogen dioxide

Long-term exposure limit (8-hour TWA reference period): 1 ppm | 2 mg/m³

Short-term exposure limit (15-minute reference period): - ppm | - mg/m³

Nitrogen monoxide

Long-term exposure limit (8-hour TWA reference period): 25 ppm | 30 mg/m³

Short-term exposure limit (15-minute reference period): 50 ppm | 60 mg/m³

Carbon dioxide

Long-term exposure limit (8-hour TWA reference period): 5000 ppm | 9000 mg/m³

Short-term exposure limit (15-minute reference period): 10 000 ppm | 18 000 mg/m³

Carbon monoxide

Long-term exposure limit (8-hour TWA reference period): 20 ppm | 25 mg/m³

According to EC-Regulation 2015/830

Short-term exposure limit (15-minute reference period): 4 ppm | - mg/m³

Dust (respirable)

Long-term exposure limit (8-hour TWA reference period): - ppm | 5 mg/m³

Dust (inhalable)

Long-term exposure limit (8-hour TWA reference period): - ppm | 10 mg/m³

Lead azide

Long-term exposure limit (8-hour TWA reference period): 50 ppm | 192 mg/m³

Short-term exposure limit (15-minute reference period): 100 ppm | 384 mg/m³

Aluminum powder

Long-term exposure limit (8-hour TWA reference period): - ppm | 5 mg/m³

DNEL / PNEC

DNEL (PETN): 220.4 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term – Systemic effects - Workers

DNEL (Red lead): 10 µg/l

Exposure: -

Duration of Exposure: Long term – Systemic effects

DNEL (Aluminium powder): 3,72 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term – Local effects - Workers

PNEC (PETN): 0.3 mg/l

Exposure: Freshwater

PNEC (Red lead): 3.1 µg/l

Exposure: Freshwater

PNEC (Red lead): 3.5 µg/l

Exposure: Marine water

PNEC (Red lead): 174 mg/kg

Exposure: Freshwater sediment

PNEC (Red lead): 164 mg/kg

Exposure: Marine water sediment

PNEC (Red lead): 212 mg/kg

Exposure: Soil

PNEC (Red lead): 0.1 mg/l

Exposure: Sewage Treatment Plant

8.2. Exposure controls

Compliance with the accepted occupational exposure limits values should be controlled on a regular basis.

General recommendations

Observe general occupational hygiene standards.

Exposure scenarios

In the event exposure scenarios are appended to the safety data sheet, the operational conditions and risk management measures in these shall be complied with.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures

Exhaust air that contains the substances shall not be recirculated. Airborne gas and dust concentrations must be kept at a minimum and below current limit values (see above). Installation of an exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure emergency eyewash and - showers are clearly marked.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Keep containment materials near the workplace. If possible, collect spillage during work.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

If ventilation at the work place is insufficient, use a half- or full mask with an appropriate filter or an air-supplied breathing apparatus depending on the specific work situation and how long you will be using the product.

Skin protection

Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the product.

Hand protection

Suitable material: NBR (nitrile rubber), EN 388.

Eye protection

Eye glasses with side protection, EN 166.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Solid
Colour	No data available.
Odour	No data available.
Odour threshold (ppm)	No data available.
pH	No data available.
Viscosity (40°C)	No data available.
Density (g/cm ³)	No data available.

Phase changes

Melting point (°C)	No data available.
Boiling point (°C)	No data available.
Vapour pressure	No data available.
Decomposition temperature (°C)	No data available.
Evaporation rate (n-butylacetate = 100)	No data available.

Data on fire and explosion hazards

Flash point (°C)	No data available.
Ignition (°C)	No data available.
Auto flammability (°C)	No data available.
Explosion limits (% v/v)	No data available.
Explosive properties	No data available.

Solubility

Solubility in water	Insoluble
n-octanol/water coefficient	No data available.

9.2. Other information

Solubility in fat (g/L)	No data available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Product is an explosive.

10.2. Chemical stability

The product is stable under the conditions, noted in the section "Handling and storage".

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Avoid static electricity.

Mechanical influences (e.g. shock, pressure, impact, friction). Fire, sparks or other ignition sources.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products

Nitrogen oxides (NOX), Carbon monoxide (CO), Carbon dioxide (CO₂), Lead containing reaction products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
Lead azide	Rat	TDL0	Oral	3920 mg/kg
Aluminium powder	Rat	LD50	Oral	>2000 mg/kg bw
Aluminium powder	Rat	LC50	Inhalation	>888 mg/m ³
Aluminium powder	Rat	NOEC	Inhalation	10 mg/m ³
PETN	Rat	LD50	Oral	2500 mg/kg
Red lead	Rat	LD50	Oral	>10000 mg/kg
Red lead	Rat	LD50	Dermal	>2000 mg/kg
Red lead	Rat	LC50	Inhalation	>5.05 mg/l
HMX	Rat	LD50	Oral	6250 mg/kg bw
HMX	Mouse	LD50	Oral	1670 mg/kg
HMX	Rat	LD50	Dermal	>4230 mg/kg bw
HMX	Rabbit	LD50	Dermal	634 mg/kg

Skin corrosion/irritation

No data available.

Serious eye damage/irritation

No data available.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

May damage fertility or the unborn child. May cause harm to breast-fed children.

STOT-single exposure

No data available.

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available.

Long term effects

Reproductive toxicity: This product contains teratogenic substances, which may produce anomalies and/or developmental defects to the human offspring. Adverse effects include: death, growth retardation, congenital disorders, delayed mental development, and functional disorders.

Carcinogenic effects: This product contains substances considered or proven to be carcinogenic. The carcinogenic effects may be triggered subsequent to exposure through inhalation, skin contact or ingestion.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Duration	Result
PETN	Fish	LC50	96 h	926 mg/l
PETN	Daphnia	EC50	48 h	292 mg/l
Red lead	Fish	LC50	96h	0.04-3.598 mg/l
Red lead	Daphnia	LC50	48h	0.026-3.115 mg/l
Red lead	Algae	ErC50	72h	0.020-0.388 mg/l
Red lead	Fish	NOEC	-	0.0178-1.588 mg/l
Red lead	Daphnia	NOEC	-	0.0017-1.409 mg/l
HMX	Fish	LC50	96h	>15 mg/l
HMX	Algae	EC50	96h	>6.5 mg/l
HMX	Daphnia	LC50	48h	>15 mg/l
HMX	Fish	NOEC	32d	>3.3 mg/l
HMX	Daphnia	NOEC	28d	>3.9 mg/l

According to EC-Regulation 2015/830

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
No data available.			

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BCF
PETN	No	2,38	No data available
HMX	No	0,165	No data available

12.4. Mobility in soil

PETN: Log Koc= 1,963122, Calculated from LogPow (High mobility potential.).

HMX: Log Koc= 0,2090635, Calculated from LogPow (High mobility potential.).

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

12.6. Other adverse effects

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms. This product contains substances, which due to poor biodegradability, may cause adverse long-term effects to the aquatic environment,

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.

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.

Waste

EWC code
16 04 03* other waste explosives

Specific labelling

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Contaminated packing

Contaminated packaging must be disposed of similarly to the product.

SECTION 14: Transport information

14.1 – 14.4

This product is within scope of the regulations of transport of dangerous goods.

By using special approved packaging a reduction of a explosive hazard is possible.

ADR/RID

14.1. UN number	0361, 0500
14.2. UN proper shipping name	DETONATOR ASSEMBLIES, NON- ELECTRIC
14.3. Transport hazard class(es)	1.4B, 1.4S
14.4. Packing group	II
Notes	-
Tunnel restriction code	E

IMDG

UN-no.	0361, 0500
Proper Shipping Name	DETONATOR ASSEMBLIES, NON- ELECTRIC
Class	1.4B, 1.4S
PG*	II
EmS	F-B, S-X
MP**	No
Hazardous constituent	-

IATA/ICAO

UN-no.	0361, 0500
Proper Shipping Name	DETONATOR ASSEMBLIES, NON- ELECTRIC
Class	1.4B, 1.4S
PG*	II

14.5. Environmental hazards

-

14.6. Special precautions for user

Product is an explosive.

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

No data available

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Restrictions for application**

People under the age of 18 shall not be exposed to this product cf. Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

Industrial use only.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education

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Additional information

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Sources

Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

Arbetsmiljöverordningen (1977:1166), med ändringar (senast AFS 2015:7).

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 (CLP).

EC regulation 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information**Full text of H-phrases as mentioned in section 3**

H200 - Unstable explosives.

H201 - Explosive; mass explosion hazard.

H228 - Flammable solid.

H302 - Harmful if swallowed.

H311 - Toxic in contact with skin.

H332 - Harmful if inhaled.

H351 - Suspected of causing cancer.

H362 - May cause harm to breast-fed children.

H372 - Causes damage to organs through prolonged or repeated exposure α .H373 - May cause damage to organs through prolonged or repeated exposure α .

H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

H360D - May damage the unborn child.

The full text of identified uses as mentioned in section 1

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Additional label elements

-

Other

In accordance with Regulation (EC) No. 1272/2008 (CLP) the evaluation of the classification of the mixture is based on:

The classification of the mixture in regard of physical hazards has been based on experimental data.

The classification of the mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP)

The classification of the mixture in regard of environmental hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP)

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

The safety data sheet is validated by

Thomas Lagerström

**Date of last essential change
(First cipher in SDS version)**

-

**Date of last minor change
(Last cipher in SDS version)**

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