Implosive connectors

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 3/25/2025 Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Trade name : Implosive connectors

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

Relevant identified uses

Industrial/Professional use spec : For professional use only
Use of the substance/mixture : Implosive connector

1.3. Details of the supplier of the safety data sheet

VP Metall AS
Raufoss industripark, bygn. 53
NO 2830 Raufoss
T +47 61151787, F +47 61152556
post@vpmetall.no, http://vpmetall.no

1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
Norway	Giftinformasjonen	Folkehelseinstituttet Postboks 222 Skøyen 0213 Oslo	+47 22 59 13 00	Operating hours 24 hours / 24 hours, 7 days a week

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Expl. 1.2 H202
Full text of hazard classes, H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Explosive, severe projection hazard.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS01

Signal word (CLP) : Danger

Hazard statements (CLP) : H202 - Explosive, severe projection hazard.
Precautionary statements (CLP) : P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P234 - Keep only in original container.
P240 - Ground/bond container and receiving equipment.
P250 - Do not subject to grinding/shock/friction.
P370+P372+P380+P373 - In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Pentaerythritetetranitrate substance with national workplace exposure limit(s) (NO)	CAS-No.: 78-11-5 EC-No.: 201-084-3 EC Index-No.: 603-035-01-2	≥ 40 – ≤ 50	Expl. 1.1, H201

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically. No specific information from the manufacturer.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Fire hazard : No fire hazard.
Explosion hazard : Explosion risk in case of fire.
Hazardous decomposition products in case of fire : Carbon dioxide (CO2). Carbon monoxide (CO).

5.3. Advice for firefighters

Firefighting instructions : Evacuate area. Do not fight fire when fire reaches explosives. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage.

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Do not subject to grinding,shock, friction. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Keep cool. Protect from sunlight.

7.3. Specific end use(s)

See section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

Implosive connectors	
Norway - Occupational Exposure Limits	
Local name	organisk

Pentaerythritetetranitrate (78-11-5)	
Norway - Occupational Exposure Limits	
Local name	Organisk støv, totalstøv
Grenseverdi (OEL TWA)	5 mg/m³

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:
Provide adequate ventilation.

Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment. The personal protective equipment must be CE-marked and the latest version of the standards shall be used. The protective equipment and the specified standards recommended below are only suggestions, and should be selected on advice from the supplier of such equipment. The protection equipment's suitability and durability will depend on application.

Eye and face protection

Eye protection:
Wear safety goggles if there is a risk of splash.

Eye protection			
Type	**Field of application**	**Characteristics**	**Standard**
Safety glasses	Liquid	With side shields	NS-EN ISO 16321-1:2022

Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Protective gloves

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Disposable gloves, Reusable gloves	Nitrile rubber (NBR), Polyvinylchloride (PVC), Neoprene rubber (HNBR)	6 (> 480 minutes)	> 0,38		EN ISO 374, EN 21420:2020 (Protective gloves - General requirements and test methods)

Respiratory protection

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Respiratory protection			
Device	**Filter type**	**Condition**	**Standard**
Mask with combination filter	Type P2	Vapour protection, Protection for Liquid particles	EN 14387, EN 140

Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	Various colours.
Appearance	:	Cord.
Odour	:	odourless.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	≥ 140 (≤ 142) °C PETN
Boiling point	:	> 164 °C
Flammability	:	Non flammable.
Explosive properties	:	Explosive, severe projection hazard.
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	> 202 (< 205) °C
Decomposition temperature	:	≈ 195 °C
pH	:	Not available
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Solubility	:	Water: Insoluble Ethanol: Partly soluble Acetone: Soluble
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	:	> 1
Relative vapour density at 20°C	:	Not applicable
Particle size	:	Not available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Explosive, severe projection hazard.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

None under normal conditions. See also section 5.2.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

Pentaerythritetetranitrate (78-11-5)	
LD50 oral rat	1660 mg/kg

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Implosive connectors	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short–term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long–term (chronic) : Not classified (Based on available data, the classification criteria are not met)

Pentaerythritetetranitrate (78-11-5)	
LC50 - Fish [1]	926 mg/l
EC50 - Crustacea [1]	292 mg/l

12.2. Persistence and degradability

Implosive connectors	
Persistence and degradability	Rapidly degradable

Pentaerythritetetranitrate	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

Pentaerythritetetranitrate (78-11-5)	
BCF - Fish [1]	17
Partition coefficient n-octanol/water (Log Pow)	≥ 1.6 (≤ 2.4)

12.4. Mobility in soil

Pentaerythritetetranitrate (78-11-5)	
Mobility in soil	Expected to have low mobility in soil.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Disposed of as hazardous waste by approved contractor. The waste code (EWC-Code) is intented as a guide. The code must be chosen by the user, if the use differs from the one mentioned below.

Sewage disposal recommendations : Do not discharge into drains or rivers.

Product/Packaging disposal recommendations : Comply with applicable regulations for solid waste disposal.

Additional information : Do not re-use empty containers.

European List of Waste (LoW, EC 2000/532) : 16 04 03* - other waste explosives

HP Code : HP1 - “Explosive:” waste which is capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic waste, explosive organic peroxide waste and explosive self-reactive waste is included.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 0443	UN 0443	UN 0443	UN 0443	UN 0443
14.2. UN proper shipping name				
CHARGES, EXPLOSIVE, COMMERCIAL	CHARGES, EXPLOSIVE, COMMERCIAL	Charges, explosive, commercial	CHARGES, EXPLOSIVE, COMMERCIAL	CHARGES, EXPLOSIVE, COMMERCIAL
Transport document description				
UN 0443 CHARGES, EXPLOSIVE, COMMERCIAL, 1.2D, (B1000C)	UN 0443 CHARGES, EXPLOSIVE, COMMERCIAL, 1.2D	UN 0443 Charges, explosive, commercial, 1.2D	UN 0443 CHARGES, EXPLOSIVE, COMMERCIAL, 1.2D (1.2D)	UN 0443 CHARGES, EXPLOSIVE, COMMERCIAL, 1.2D (1.2D)
14.3. Transport hazard class(es)				
1.2D	1.2D	1.2D	1.2D	1.2D
		Not applicable		

ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
Not applicable	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 EmS-No. (Fire): F-B EmS-No. (Spillage): S-X	Dangerous for the environment: 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) : 1.2D
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P137
Mixed packing provisions (ADR) : MP21
Transport category (ADR) : 1
Special provisions for carriage - Packages (ADR) : V2
Special provisions for carriage - Loading, unloading and handling (ADR) : CV1, CV2, CV3
Special provisions for carriage - Operation (ADR) : S1
Tunnel restriction code (ADR) : B1000C

Transport by sea

Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P137
Stowage category (IMDG) : 03
Stowage and handling (IMDG) : SW1
Properties and observations (IMDG) : See glossary of terms in appendix B.

Air transport

PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : Forbidden
CAO max net quantity (IATA) : Forbidden
ERG code (IATA) : 1L

Inland waterway transport

Classification code (ADN) : 1.2D
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Equipment required (ADN) : PP
Provisions prior to loading (ADN) : LO01
Provisions for handling and stowage of the cargo (ADN) : HA01, HA03
Number of blue cones/lights (ADN) : 3

Rail transport

Classification code (RID) : 1.2D
Limited quantities (RID) : 0
Excepted quantities (RID) : E0
Packing instructions (RID) : P137
Mixed packing provisions (RID) : MP21

Transport category (RID)	:	1
Special provisions for carriage – Packages (RID)	:	W2
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW1
Hazard identification number (RID)	:	1.2D

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

National regulations

The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).
Regulation (EC) No 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH Regulation), with later amendments.
Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP-regulation) with later amendments.
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

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

Abbreviations and acronyms:	
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
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
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disruptor

Other information : This safety data sheet is quality controlled by Kiwa Kompetanse AS, which is certified in accordance with ISO 9001:2015.

Full text of H- and EUH-statements:	
Expl. 1.1	Explosives, Division 1.1
Expl. 1.2	Explosives, Division 1.2
H201	Explosive; mass explosion hazard.

Full text of H- and EUH-statements:	
H202	Explosive, severe projection hazard.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Expl. 1.2	H202	

Safety Data Sheet (SDS), EU

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.