

MATERIAL SAFETY DATA SHEET



EMULINIT Emulsion Explosive

SECTION 1: Substance & Company Identification

1.1. Product name:

EMULINIT & Dyna-Booster

Product with trade names as following:

EMULINIT 1S, EMULINIT 2, EMULINIT 4, EMULINIT 5, DYNA BOOSTER

1.2. Application of the product

EMULSION EXPLOSIVE is intended to be used in underground mines and quarries for mining of compact beds and rocks in conditions free of coal-dust and/or methane explosion risk.

1.3. Manufacturer: NITROERG S.A.
43-150 Bieruń
Plac Alfreda Nobla 1

Manufacturing plant: NITROERG S.A. ul. Zawadzkiego 1, 42-693 Krupski Młyn

e-mail contact for HDS: d.duda@nitroerg.pl

1.4. UK supplier: BREXCO,
York Eco Business Centre,
Amy Johnson Way,
Clifton Moor, York YO30 4AG United Kingdom
Tel: +44 (0) 1904 785 500 Email: office@brexco.co.uk

Contact details: Richard Parkin: office@brexco.co.uk
Emergency telephone number (24hr) Tel: +44 (0) 7954 408 377

SECTION 2: Hazard Identification

2.1. Classification

E, R 2

2.2. Threat with the explosion

E – Explosives R 2

There is threat of explosion as a result of the impact, friction, the interaction of fire and other energy factors. Decomposition of the explosive occurs when the temperature exceeds 140°C. Very toxic oxides and nitrogen are produced during the heating and the incineration.

2.3. Remaining threats

2.3.1. Fire threat

The burning of small quantities should take place safely in open spaces. Burning small or large quantities in confined and /or closed spaces are liable to detonate resulting in fire as a secondary effect.

2.3.2. Eco-toxic threat

The product is insoluble in water; a threat of the pollution of ground does not occur.

SECTION 3: Composition & Ingredients Information

3.1. The chemical constitution of EMULSION EXPLOSIVE includes, among others:

Chemical name	%	Numbers			Warning symbol
		Index	EINACS	CAS	
AMMONIUM NITRATE	66,0-75,0	6484-52-2	229-347-8	6484-52-2	O
SODIUM NITRATE	7,0 –14,0	-	231-554-3	7631-99-4	O, Xn, Xi
BASE OIL	0,7-7,0	-	-	-	-
GLASS MICROBALLONS	0,7-2,3	-	-	-	-
EMULSIFIER	0,4-2,3	not accessible	-	-	-
ALLUMINIUM	2,4-5,0	-	7429-90-3	231-072-3	F

These components are strongly tied and stabilized by the emulsifier.

SECTION 4: First Aid Procedures

Eye Contact	-	Rinse with a lot of water
Skin Contact	-	Direct contact with skin, wash hands with soap and water, in case of skin irritation consult the physician.
Ingestion	-	Immediately drink large quantities of water with medical charcoal, if accessible; induce vomiting & seek medical consultation.
Inhalation	-	fumes e.g. COx, NOx, H2, CH4 Ensure plenty of fresh air, position the person in the recovery position and call a doctor.

Information for the doctor

Swallowing can lead to generation of methemoglobin, which in a certain concentration can cause cyanosis.

SECTION 5: Procedures In Case Of Fire

EMULSION EXPLOSIVE contains oxygen within the composition. Therefore, the efficiency of firefighting media (e.g. extinguishers) will not suppress the fire. If the product is directly involved in the fire do not attempt to extinguish.

If the product is not directly involved in the fire - try to suppress the fire using the best possible means and methods; avoid letting the fire reach the product! If the fire cannot be extinguished before reaching the product, evacuate all persons from the danger area immediately. Isolate the dangerous zone, observe the fire at a safe distance and contact the emergency services.

During the burning and decomposition process, strong toxic nitric oxides are released.

Extinguishing media: Carbon dioxide extinguishing powders, Foams, Diffused streams of water.

Extinguishing means:

DO NOT extinguish. Evacuate personnel immediately. Allow fire to burn it to the end.

Specific danger:

When product is directly involved in a fire:

- Danger of explosion – **do not fight fire.**
- Toxic gas release (CO, NO_x, HCl).
- Warn and evacuate the surrounding area. Shelter at minimum 300 meters.

When product is not directly involved in a fire:

- To protect the product against the fire.
- Carefully remove explosive to a safe distance.

Special protective equipment during the rescue operation:

It is necessary to wear protective, gastight clothing with the apparatus isolating the respiratory tract.

SECTION 6: Procedure In Case Of Unintentional Release Into The Environment

Personal precautions:

Keep away from ignition source, prevent from shock or friction, and avoid skin or eye contact.

Environmental precautions:

Avoid dispersion in soil, sewer and river, Do not wash waste into the sewer system.

Methods for cleaning up:

Remove product manually in closed containers and/or PE bags, use non-sparkling and non-metallic tools, keep unauthorised persons away from the danger area, Notify persons about the danger of explosion.

Accident during transport:

Notify the Police and / or
BREXCO telephone: 07954 408377 (24 hour service)

SECTION 7: Handling & Storage

7.1. Handling:

Technical measures:	Manipulate carefully in accordance to handling Class 1.1D explosives. Danger of explosion!
Precautions:	Do not smoke or weld, keep away from open flames, avoid shock and friction.
Safe handling advices:	Do not eat or drink at work, follow safety procedures for handling explosives approved by local, state and federal laws, regulations and ordinances, employ authorised persons only.

7.2. Storage:

- In authorised storage units according local law, suitable for Class 1.1D,
- Keep locked up,
- Do not smoke and keep away from ignition source,
- Temperature of storage 10°C to 30°C
- Protect against direct sunlight, rain and snowfall.

7.3. Common storage:

Only store with compatible materials of the class 1, groups of conformity: C, D, E, G and S according to ADR regulations. Product should be kept in licenced storage conditions and comply with the regulated quantities and compatibility groups.

Storage conditions:	Normal temperature and humidity.
Packaging material:	Recommended in the original containers.

SECTION 8: Exposure Controls / Personal Protection

8.1. Types of risk

During normal work activities, risk of skin penetration only.

8.2. Personal protective equipment:

- **Respiratory protection:** no individual protection required, avoid over ventilation.
- **Hand protection:** use gloves
- **Eye protection:** no special protection required, avoid contact with eyes.
- **Skin protection:** use protective clothing & gloves
- **Hygiene measures:** wash hands after use

SECTION 9: Chemical & Physical Characteristics

Characteristic	EMULINIT 1S	EMULINIT 2 DYNA-BOOSTER	EMULINIT 4	EMULINIT 5
Appearance	Grey plastic material cartridged into PE film or tubes			
Density [g/cm ³]	1,20	1,26	1,27	1,20
Trauzl test [cm ³]	310	306	255	223
Velocity of detonatioin [m/s]	φ 50 mm 5500	φ 32 mm 5460	φ 32 mm 4800	φ 32 mm 5200
Friction sensitivity [N]	>350	353	247	353
Impact sensitivity [J]	>49	24,5	12	25
Odour	odourless	odourless	odourless	odourless

SECTION 10: Stability & Reactivity

Stability:	Explosive stable at normal storage conditions
Possible hazardous reactions:	Friction, impact, fire, explosion
Conditions to avoid:	Shock, Friction, Sparks, Flames, Static, Excessive temperatures & Static electricity
Hazardous decomposition products:	fumes - COx, NOx, H2, CH4
Temperature of use:	-20°C to +50°C
Hydrostatic pressure (max):	0,3 MPa

SECTION 11: Toxicological Information

All components are strongly tied and stabilised by the emulsifying agent present in the compound, therefore in conditions of intended use they don't present any toxic risk. Only during the combustion and decomposition of the product strong toxic nitric oxides and carbon monoxide can be released.

SECTION 12: Ecological Information

If used as intended, EMULSION EXPLOSIVE is not hazardous to water or soil. During the combustion and decomposition process strong toxic nitric oxide and carbon monoxide can be released. Components of the product are toxic for water organisms and can caused long-standing changes in water environment.

Avoid releasing to the environment.

Ammonium nitrate is the main component of the product. Problems concerned with releasing into the environment result from high solubility in water further it leads to eutrophisation of algae.

The toxicity owing to :

a) Ammonium Nitrate : Water toxicity is follows:

- LC50 = 800 g/m³ within 4 hours;
- EC90 = Not defined, not toxic for the water organisms
- Solubility in water – very good, contaminated water is not drinkable; there is also corrosive action;
- Absorbed by soils;
- The product has not bioaccumulation properties.

SECTION 13: Disposal Considerations

Waste from residues: To be disposed in accordance with local regulations.

Contaminated packaging: To be disposed in accordance with local regulations..

Disposal of waste explosives should be conducted by authorised companies & trained persons only.

Disposal by detonation: Primer weight, min. 20% of the quantity of destroyed material

SECTION 14: Transport Information

Packaging of emulsion explosives and their marking are agree to RID/ADR regulations.

The marking on the package contains: transit name in English, Polish, German or French and the identify number of the product. The warning label and the commercial name of the explosive are placed on each box.

Emulsion explosives are a dangerous product with RID/ADR/IMDG classification:

Proper transport name: Blasting explosive Type E,

Identification number of material: UN 0241

Classification code:

- Transport by land ADR/RID 1.1 D (Par.4 compatible with im 2101)
- Transport by sea IMDG 1.1 D (Par.4)
- Transport by air IATA-DGR Forbidden

These materials are forbidden to be transported on the same vehicle with other dangerous materials unless adhered to the exception of dangerous materials of the class 1 groups of C conformity, D, E, G and S.

Transport packages are to be marked in harmony with RID/ADR regulations. Modes of transport and containers are required to have a permit to transport dangerous materials class 1 and marked in accordance to RID/ADR/IMDG regulations.

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Material classified as 1.1D packed acc. to:

Packaging instruction: P116
 Collective packaging: MP20
 Packaging regulations: PP 61, PP62, PP65, B 10
 Certification marking:



Orange board:



Marking of vehicles

Warning sticker:



Marking vehicles and packages

SECTION 15: Regulatory

Buying and storing explosives requires suitable permissions in conformity with EC directives, local state and federal laws in the country of the user.

Classification of the product

E, Xn, R: 2-10-20/21/22

E	Explosives
R 2	Explosion danger by impact, friction or fire action.
R 10	Inflammable substance
R 20/21/22	Substance irritating for respiratory tract and skin as well as in case of swallowing

Terms concerning to the correct storage and handling (S)

S1	Keep locked up
S16	Keep away from sources of ignition – no smoking
S20/21	Do not eat, drink or smoke when using the product
S26	In case of contact with eyes rinse immediately eyes abundantly with water call medical aid
S33	Use protection means against static electricity
S35	This material and its container must be disposed in a safe way
S36	Wear suitable protective clothing
S41	Do not inhale smoke after the fire or the explosion
S45	In case of collapse or signs of contamination, contact a doctor immediately. Where possible show the product label.

SECTION 16: Other Information

The above information is prepared on the basis of actual knowledge of:

EMULSION EXPLOSIVES

Information and data included in this MSDS are determined on the basis of above-mentioned documents and our knowledge and of our practice about the product. Data describing the product for safety guidelines only and should not be regarded as guaranteed values. The user is responsible for safe storage conditions and using the explosive. Only predicted applications were being taken under remark during preparation of this MSDS. The user accepts full responsibility for consequences as a result of inappropriate handling and use.

Data Sheet Updated

July 2014 (RTP)