HAZARD DATA SHEET
DETONATING CORDS

NITROERG	43-150 Bieruń Pl. Alfreda Nobla 1 phone: (32) 46 61 900 fax: (32) 46 61 357 e-mail: *nitroerg@nitroerg.pl*	Edition 2 Date of issue 14/11/2011	
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1. PRODUCT AND COMPANY IDENTIFICATION

1.1.Product name:

DETONATING CORDS FOR ROCK BLASTING, PENTRITE NITROCORD, NOBELCORD, ROWOCORD, CORDTEX

the product is occurring with trade names as following:
NITROCORD 6, NITROCORD 6-N, NITROCORD 10, NITROCORD 12, NITROCORD 20, NITROCORD 25, NITROCORD 40, NITROCORD 80, NITROCORD 100, NOBELCORD 6, NOBELCORD 10, NOBELCORD 20, NOBELCORD 12, NOBELCORD 40, NOBELCORD 80, NOBELCORD 100, ROWOCORD 12, ROWOCORD 25; CORTEX 10; CORDTEX 20; CORDTEX 40; CORDTEX 80, CORDTEX 100.

1.2. Applying of the product

Detonating cord is applying in quarries and open-pit mines and underground mines as the rocks explosive. The detonating cord is designed for initiation of explosives cartridged and loaded in bulk, and for initiation of detonation of shock tubes the NONEL type in nonelectric detonators. It is prohibited to use detonating cords when potentially hazardous atmosphere exists: for coal dust and air mixtures, and methane and air mixtures.

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 Alarm telephone

0048 32 466 20 00
0048 32 466 21 00

2. HAZARDS 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 is occurring in the temperature above 140°C. Very toxic oxides of coal and nitrogen are produced during the heating and the incineration.

2.3. Remaining threats

2.3.1. Fire threat

The burning of small quantities take place safely on open space. Burning small quantities in closed space or the combustion of big quantities are able to go to the detonation. The fire is able to arise as the secondary effect of the explosion also.

2.3.2. Eco-toxic threat

The product is insoluble in water; a threat of the pollution of ground isn't occurring.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

3.1. Pentrit (PETN, pentaerythritol tetranitrate) - concentration in product: 30 % < c < 70 %

Classification of substance: E, R 2

Index No	603-035-00-5
CAS No	78-11-5
EINECS No	201-084-3

Remaining components of the product aren't being classified as dangerous

4. FIRST AID PROCEDURES

Skin contact: in case of direct contact with PETN wash skin with water and soap. If irritation occurs consult physician.

Eye contact: in case of direct contact with PETN wash with plenty water for at least 15 minutes and call medical assistance.

Ingestion: call a medical assistance.

Instructions for medic: PETN acts as a vasodilator.

5. PROCEDURE IN CASE OF THE FIRE

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 least 300 meters).

When product is not directly involved in a fire:

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

Special protective equipment during the rescue operation:

it is necessary to dress the protective, gastight clothing with the apparatus isolating the respiratory tract.

6. PROCEDURE IN CASE OF UNINTENTIONAL FREEING TO 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, in case of rain keep released product dry.

Methods for cleaning up: take away product manually and fill it in closed container, use non-sparkling and non-metallic tools, keep away unauthorized persons, warn about explosion danger. See point 13 too.

Accident during transport: notify the Police and / or Nitroerg S.A. telephone: 0048 32 466 20 00 (24 hour service)

7. HANDLING AND STORAGE

7.1. Handling:

Technical measures: manipulate carefully in accordance to handling with explosives Class 1.1D. Danger of explosion.

Precautions: do not smoke or weld, keep away from open flame, avoid shock and friction.

Safe handling advices: do not eat or drink at work, follow safety procedure for handling explosives approved by local, state and federal laws, regulations and ordinances, employ authorized persons only.

7.2. Storage:

- in authorized warehouse according federal law, suitable for Class 1.1D,
- keep locked up,
- do not smoke and keep away from ignition source,
- temperature of storage - depends of kind cord (information available on label).

7.3. Common storage:

Only with materials of the class 1, groups of conformity: C, D, E, G and S according to ADR regulations. Quantities of the product being in magazines are regulated strictly with regulations.

Storage conditions: normal temperature and humidity.

Packaging material: recommended in the original containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Types of risk

During the normal work, risk of the contact pentrit with the skin is existing only.

8.2. Personal protective equipment:

- **respiratory protection:** no individual protection required
- **hand protection:** no special protection required
- **eye protection:** no special protection required
- **skin protection:** no special protection required
- **Hygiene measures:** wash the hands after ending work

9. CHEMICAL AND PHYSICAL CHARACTERISTICS

Appearance:	flexible cord encased in a red or other colour plastic cover and filled with a white, crystalline powder (PETN).
Colour:	red or other colour
pH:	not applicable
Decomposition point:	PETN core melts at 140°C
Explosion properties:	sensitivity to impact: > 10 J (cord) sensitivity to impact: 3 J (PETN)
Solubility:	not soluble in water

10. STABILITY AND REACTIVITY

Stability:	explosive stable at normal storage conditions
Possible hazardous reactions:	friction, impact, fire, explosion
Conditions to avoid:	shocks, frictions, flames, sparks, excessive temperature
Hazardous decomposition products:	CO, NO_x and HCl

11. TOXICOLOGICAL INFORMATION

The detonating cord used in accordance to the destination and the instruction of use is causing no consequences and it doesn't contain toxic components. They are be able toxicological threat from contact with pentrit in case to apply the detonating cord to wrong applications.

Ways of absorbing: through the skin, membranes lockage, the respiratory system, the digestive tract.

In the case of swallowing: degreasing the arterial blood's pressure and pulses and headaches, the syncope, weakness.

In the case of the contact with eyes: can be reason of irritation,

In the case of the contact with the skin or mucous membranes: be able to cause local reddening.

Symptoms of severe poisoning:

Pentrit is be able a reason reddening of the skin (especially a face), with the feeling hot, the headache, mawkishness, the sting in the throat, stomach ache; degreasing of the blood-pressure which is able to the collapse, body's vibrations, respiratory disturbance, and in special cases of death.

Symptoms of protracted poisoning: data are missing for PETN

Local effects: minor skin irritation in case of contact with PETN

12. ECOLOGICAL INFORMATION

The product insoluble in water. Is no the threat of ground pollution.
Allowed pollution of air - not determined.

13. DISPOSAL CONSIDERATIONS

Waste from residues: to be eliminated in accordance to regulations in force in concerned country.
Contaminated packaging: to be eliminated in accordance to regulations in force in concerned country.
Neutralizing of waste detonating cord can be doing only by authorised firms. NITROERG S.A. accepts the waste of detonating cord and polluted packages for neutralization.

14. TRANSPORT INFORMATION

Packaging of the detonating cord and their marking are agree to RID/ADR regulations.
The marking on the package contains: transit name in the Polish language, and English, German or French and the identify number of the product. The warning label and the commercial name of the explosive are put on each box.
Detonating cord, pentit is the dangerous product with the RID/ADR/IMDG classification:

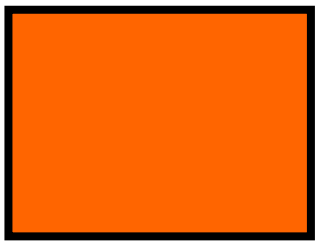
Proper transport name:	DETONATING CORD,
Polish	LONT, DETONUJĄCY
English	CORD, DETONATING
German	SPRENGSCHNUR
French	CORDEAU DÉTONANT
Identification number of material:	UN 0065

Classification code:

- Transport by land ADR/RID 1.1 D
- Transport by sea IMDG 1.1 D page 1251
- Transport by air IATA-DGR forbidden

There are forbidding flatly to transport on the one vehicle the detonating cord together with other dangerous materials behind the exception of dangerous materials of the class 1 groups of C conformity, D, E, G and S.
Transport packages have to be marked in harmony with RID/ADR regulations. Modes of transport and containers have to have an permit to transport of dangerous materials class 1 and marked in accordance to RID/ADR/IMDG regulations.

Orange board:



Marking of vehicles

Warning sticker:

Marking of vehicles and packages

15. INFORMATION CONCERNING TO LAW REGULATIONS

Buying and the storing the explosive requires to obtain suitable permission in conformity to EC directives or local, state and federal law on the country of user.
Classification of the product

E	explosives
R2	threatening with the explosion as a result of the impact, friction, the contact with fire or other sources of the ignition

Terms concerning to the correct storage and handling (S)

S1	Keep locked up
S16	Keep away from sources of ignition – no smoking
S20/21	Not to eat and not to drink and not to smoke the tobacco when using the product
S35	This material and its container must be disposed in a safe way
S41	Not to inhale smokes after the fire or the explosion
S45	In case of the breakdown or if you feel wrongly, promptly to go to the doctor, - if it is possible show the label

The Evaluation of Chemical Safety for the product and his components wasn't done.

Components contributing to the hazard:

Chemical name:	pentaerythritol tetranitrate (PETN)
Concentration:	6-100 g/m
Classification:	1.1 D
CAS Registry number:	78-11-5

16. OTHER INFORMATION

This Material Safety Data Sheet was elaborated on the basis of following source data:

1) MSDS No 178 for Pentrit (PETN) elaborated by Institute of the Organic Industry (Polish notified laboratory),
2) MSDS No #1126 for detonating cord elaborated by Dyno Nobel Inc.
3) MSDS for pentrit (PETN) elaborated Societe Suisse des Explosifs, Switzerland

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. These data are describing the product for security reasons and they aren't able to be regarded as guaranteed values. The user is responsible for creature of conditions of safe storing and using the explosive. Only predicted applications were being taken under remark during preparation these MSDS. The user is taking responsibility full on oneself for consequences for inappropriate handling with the product and applying the product inappropriate to its destination.

Date: November 2011