

1- IDENTIFICATION

Commercial identification:

MINOR FUSEChemical identification: no purpose, **mixture**Company: **TITANOBEL**

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Product	CE type attestation number	Agreement Type
MINOR FUSE	0080.EXP.00.0052	-

Use of the product: safety fuse allowing a regular propagation of the flame at a known velocity to cause the firing of an explosive loading. **(SU2a: i.e.: mine concern)****2 - HAZARDS IDENTIFICATION**

- Danger of combustion, without any risk of mass detonation

Storage classification of the explosive in its transport packaging

Classification in division's compatibility risk's group 1.4 S in accordance with decree dated April 20th, 2007 modified

Hazard Symbol

E : Explosive

**Risk phrases:****R2: risk of explosion by shock, friction, fire or other sources of ignition****R11: highly flammable****3 - COMPOSITION/INFORMATION ON THE COMPONENTS**

The black powder's core (which lineic mass is about 5g/m) is wrapped with two braided textile protections (in cotton), recovered by an insulating plastic tube of black polyethylene.

Two thread marks, in cotton, one white, the other yellow are placed in the core of the black powder from the minor fuse.

4 - FIRST HELP**4.1 - General Indications**

In any case, see immediately a doctor.

In case of contact of the powder with the eyes, rinse immediately and abundantly with water during at least 15 minutes by keeping open the eyelids. Consult an ophthalmologist.

5 - FIRE FIGHTING MEASURES

Extinguishing ways:

Possibility of flooding with large quantities of water in case of beginning of the fire

Protective equipment: isolating breathing devices because of the spreading of harmful gases (especially carbon monoxide)

6 - MEASURES TO TAKE IN CASE OF ACCIDENTAL RELEASE**6.1 - Individual precautions**

In case of no-run or incomplete run, collect carefully and with adapted individual protection what remains from the fuse (see § 8)

6.2 - Environmental precautions

In case of accidental opening from the packaging, do not leave the spread product. Do not throw in sewer of water system and make sure the product if identified on the packaging.

6.2 - Cleaning methodsCollect the product in a packaging recommended by Titanobel (see § 14) within respecting the safety measures bound to handling and identify the product on the new container. Then, **sweep** carefully the ground.

In case of particular problem, contact Titanobel.

7 - HANDLING AND STORAGE**7.1 - Handling**

Technical measures and precautions: during these operations, keep the product far from heat, flames and sparks, avoid any shock and friction. It is formally forbidden to smoke or to set naked fires.

Using advises: avoid contact with incompatible matters (see § 10). Avoid contact with skin and eyes.

7.2 - Storage

Technical measures: eliminate defect packaging

Storage conditions: the containers must be piled in a stable way shielded from bad weather. Storage period: must be used within 5 years after the date of production.

Incompatible matter: do not store with product out of class 1 neither with products of class 1 which compatibility group **would be A or L**.Packaging materials: the storage **must** be made in packaging recommended by Titanobel (see § 14).**7.3 - Specific use**

Comply with the regulation (see § 15) and the technical sheet of the product.

8 - EXPOSURE CONTROL / PERSONNAL PROTECTION

8.1 - V. L. I. without purpose

8.2 - V. L. E. P. nothing to point out in normal conditions of use

8.3 - Individual protection equipments

- Protection of the body: wear **suitable** clothes and gloves
- Particular hygiene measures: do not eat or drink with hands soiled with black powder.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Basic physical / shape

Core of black powder (lineic load: 4,5 to 6 g/m) wrapped with two braided textile protections (in cotton), recovered by an insulating plastic tube of black polyethylene. The core of the black powder contains two thread marks, in cotton, one yellow, the other white

Color: black polyethylene plastic tube

odor: odorless

Specific temperature for change of physical state: > 120° C (regarding the polyethylene plastic tube)

Flash point: without purpose

- Temperature of self-ignition by progressive heating: of the black powder contained in the fuse

Test SNPE 47 (FE/47/14/80/004) (GEMO FMD - 051 - A - 1) 351 ° C *

- Operating time of the fuse

Test CSE 1.45/ L5

In open air about. 122 s/m
under stuffing about 107 s/m

- Operating time of the fuse (test of operation time of the waterproof slow-burning fuse)

Test CSE 1.47/L7

about 106 m/s

Vivacity of the flame

Test CSE 1.47/L7 transmissions

6 / 6 trials

Resistance to traction

Test CSE 2.29/J6 applied to the fuse

No break at 500 N

10 - STABILITY REACTIVITY

10.1 - Conditions to avoid

Fire, sparks or other sources of ignition, mechanical influences (for example shock, crushing, bump, friction)

Temperature higher than 50° C, contact with substances given in § 10.4

10.2 - Stability:

In usual storage conditions the safety fuse is stable chemically. Nevertheless, in case of anomaly the product can be isolated and the anomaly immediately pointed out to the technical department of Titanobel.

10.3 - Harmful decomposition products:

In case of fire and/or non-compliance of some of the prescriptions hereunder: possibility of release of carbon monoxide

10.4 - Materials to avoid:

Avoid contact with alkalis, amines, strong acids, alkalis metals, copper, zinc and wash powders. Do not store with products out of class 1 as well as with products from class 1 which compatibility group **would be** A or L.

11 - TOXICOLOGICAL INFORMATIONS

11.1 - Acute Toxicity:

Not classified (it is an object).

11.2 - Exposition way: Ingestion, Inhalation, eyes and skin.

11.3 - Acute effects / symptoms

For the black powder:

- lightly irritating for eyes, skin and respiratory tracts

11.4 - Chronicle effect after exposition / prolonged or repeated contact: eruption / dermatitis

12 - ECOTOXICOLOGICAL INFORMATIONS

- Do not discharge into drains or in natural environments

13 - DISPOSAL CONSIDERATIONS

Waste and residues

The product should not be left, it must be collected to be disposed according to the recommendations prescribed in paragraph 6 then stored under supervision as recommended in paragraph 7.

For small quantities, the recovered product can be destroyed by placing it in contact with initiated loads, after the drawing up of a specific instruction by the owner.

For significant quantities: consult the supplier's depot who will supply you with the information regarding the disposal conditions.

Do not mix with other incompatible residues (see § 10).

In any case, comply with the regulation in force. In case difficulties, don't hesitate to take contact with Titanobel.

Soiled packaging

The packaging soiled with traces of products will be carefully examined to check that they are empty; they can be burn **nowadays' best technique (see BREF-OFC)**, on using sites in accordance with the safety instructions of the establishment, or they can be sent back to Titanobel according to the conditions defined between the two parties to be treated inside the destruction's channels.

14 - INFORMATIONS RELATIVE TO TRANSPORT

Classification for transport in recognized packaging

Official description for transport : SAFETY FUSE (or SLOW BURNING FUSE)

Road ways RID and ADR

- Number 47°, division 1.4S, n° ONU 0105

Maritime ways: code IMDG

- N° 0105 - division 1.4 S

Aerial ways: classification OACI/IATA

- 1.4.S (only in metallic boxes)

- **Packaging method: P 140**

- **Particular description: PP 73**

Recognized packaging: - cardboard boxes 4 G

15 - REGULATORY INFORMATIONS

<u>Symbol</u>	E	Explosive
	R 2	Risk of explosion by shock, friction, fire or other sources of ignition
<u>Risk sentences</u>	R 11	Highly flammable
<u>Safety advises</u>	S 33	Take precautionary measures against static discharges
	S 35	This material and its container must be disposed of in a safe way
	S 37	Wear suitable gloves
	S 41	In case of fire and/or explosion do not breathe fumes

Main French laws and regulation in force nowadays:

- Defense code modified and application's decision
- Environmental Code
- Decree 79-846 du 28.09.79 and it application's decision
- Decree n° 92-1164 modified on 22.10.1992 and it application's decision
- Decree n° 87-231 and it application's decision
- Decision TDM in force
- General Rules of the Extractive Industries (RGIE) - Title Explosives
- The product falls under the Directive on hazardous materials
- In France, the use of wick is subject to authorization by the Prefect, it may only relate to the following uses:
 - The firing of a detonator used outside of a mine hole
 - The blasting of rocks,
 - The mine priming loaded with black powder.

This list is not exhaustive and does not, in any case, dispense the user from taking account the whole official laws to his activity

16 - OTHER INFORMATIONS / WARNING

This form fills up the technical manual of use but doesn't replace it. The information is based on our knowledge relative to the concerned product, at the date which is indicated. They are given in good faith. The attention of the users is pointed out on the possible risks incurred when the product is used to other employment than those for which it is conceived.

Particularly, these products must be handled only by operators having knowledge of the explosives in accordance to regulation and the usual rules of trade; they are intended to be used as explosives for blasting rocks in mines, quarries and public works.

For any other use or particular use, Titanobel takes no responsibility,

It is up to the user under its own responsibility to do as follows:

- elaborate the safety measures regarding the use of the products taking in account especially the data of this sheet,
- reflect to all users and all handlers the adapted safety data and warn against the risks mentioned in the whole documentation relative to the use of these products.
- to make sure that the users who are going to handle/or use these products are trained to their use and their handle.

This enumeration must be in no case considered as exhaustive. It does not exonerate the recipient from checking that no other duty is prescribed by regulation other than those mentioned and especially those able to govern his own activity regarding possession and handling of explosives for which he is the only responsible.

Information: modifications facing the previous version **appear bold**