

**MINING**

**MINOTERM**

**SPRAYABLE PHENOLIC FOAM**

**DESCRIPTION**

Minoterm is a two-component foam, obtained after mixing component A (aqueous solution of phenol-formaldehyde resin) and component B (aqueous solution of organic and inorganic acids). It could be applied by spraying (components volume ratio 2:1) or applied by foaming (components volume ratio 4:1). The foam property allows use under various geological and mining conditions.



**APPLICATION AND USE**

Minoterm is used for fire and methane hazard prevention by spraying, filling voids, sealing mined-out openings & walkways. It can also be used to build or seal insulation and ventilation dams.

**ADVANTAGES**

- Fast application
- High efficiency
- Low content of free formaldehyde
- Ability to use under a wide range of geological and mining conditions
- Low reaction temperature
- Good gas-insulation
- Does not disturb gas indicator readings
- Ability to use in environments where fire hazard occurs

**TECHNICAL DATA**

The data below are laboratory data. They may vary in practice due ambient temperature, pressure and other factors.

**TECHNICAL PROPERTIES**

**SYSTEM DATA**

Parameter	Unit	Application by spraying (volume ratio 2:1)	Application by foaming (volume ratio 4:1)
Foaming factor	-	15-20	30-40
Reaction time - start	[s]	~ 5	~ 5
Reaction time - foam rise end	[min]	< 1	< 4
Reaction time - hardening	[min]	< 3	< 30
Compressive strength at 10% deformation	[MPa]	> 0.15	> 0.04
Flammability	-	self-extinguish	self-extinguish
Anti-electrostatic	-	dissipative	dissipative

## **APPLICATION METHOD**

Phenol-formaldehyde foam is supplied through a pump-set with a component volumetric pumping ratio of 2:1 for spraying or 4:1 for regular foaming. During the pumping, the components are mixed in a static mixer and form foam, which hardens within a few minutes. When using spraying method additional spraying nozzle is required to deliver compressed air into the reacting mixture. For details, please see the Application Instructions.

## **SAFETY INSTRUCTIONS AND LIMITATIONS**

Failure to follow the application equipment operating manual, and particularly its technical condition, insufficient cleaning and lack of maintenance can lead to a change in the ratio of the supplied components which then reduces the effectiveness of foaming or makes it completely impossible. In consequence, the obtained foam might have inadequate parameters (non-homogeneous structure, inadequate foaming factor, reduced durability). Do not use in poorly ventilated areas.

When applying the product, use standard PPE meant for work with chemicals: safety gloves and goggles, protective clothing etc. Immediately change the clothes if they become soaked with components. For detailed safety information please see the Material Safety Data Sheet.

## **PACKAGING AND TRANSPORTATION**

Foam components are packed into barrels/canisters with a capacity of 20 or 30 liters. Containers are delivered on pallets. After arranging with the customer, the material can be delivered in alternative packages (for instance 200 liters barrels or 1000 liters containers.)

## **STORAGE AND SHELF LIFE**

The components A and B shall be stored in airtight containers and in dry and well-ventilated areas at 10 - 20°C.

The warranty period for properly stored components is respectively: 2 months for component A (resin) and 12 months for component B (hardener).

## **DISPOSAL**

Follow local regulations.

## **APPROVALS AND CERTIFICATES**

1. Certificate - safety mark "B"
2. Hygienic assessment (PZH)

## **DISCLAIMER**

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## **ADDITIONAL DOCUMENTATION**

- Minoterm komponent A MSDS
- Minoterm Komponent B MSDS

## **LIST OF REPRESENTATIVES**

- AUSTRIA: Minova MAI GmbH
- CZECH REPUBLIC: Minova Bohemia s.r.o.
- FRANCE / BELGIUM: Sales office Minova France / Belgium
- GERMANY: Minova CarboTech GmbH
- ITALY: Minova CarboTech GmbH Italy branch
- KAZAKHSTAN: Minova Kazakhstan LLP
- POLAND: Minova Ekochem S.A.; Minova Arnall Sp. z o.o.; Minova Ksante Sp. z o.o.
- RUSSIA: ZAO "Carbo-ZAKK"
- SLOVAKIA: Minova Bohemia s. r. o., organizačná zložka
- SOUTH AFRICA: Minova Africa (Pty) Ltd.

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Minova International Ltd.
- APAC: Minova Australia Pty Ltd.
- AMERICAS: Minova USA Inc.

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