MINING

CARBOFILL

TWO-COMPONENT PHENOLIC RESIN FOR CAVITY FILLING

DESCRIPTION

CARBOFILL, comp. A, is an aqueous phenolic resin which contains a suspension of solid carbonates as a blowing agent.

CARBOFILL, comp. B, is a blend of various acids which give rise to the foaming process and the curing reaction.

PHENET is a surface-active, alkaline rinsing solution for the A-component.

APPLICATION AND USE

Instant foaming two-component phenolic foam for

- Filling of cavities e.g. in roads, longwalls and rise drifts
- Filling of cavities to prevent gas accumulations
- Filling of roadside packs against air leakage from the goaf
- Construction of dams for fire fighting
- Sealing of end dams
- Sealing and filling for fighting fire e.g. by Wiborex bolt
- Stabilisation of broken fragments in the end positions of the longwall
- Gas sealing of the roadside embankment

ADVANTAGES

- Due to the fast reaction, the foam can be heaped up easily without flowing away
- CARBOFILL foams up immediately after mixing of the components and can be placed without complicated and time-consuming sheeting
- CARBOFILL does not transmit fire, as proven in the fire test (cf. approval).

TECHNICAL DATA

Our Minova products undergo stringent laboratory and field testing to ensure consistent and high quality.

MATERIAL DATA

Parameter	Unit	Comp. A	Comp. B	PHENET	Standard
Density at 25 °C	kg/m^3	1260 ± 30	1540 ± 30	1090 ± 20	DIN 12791-1
Colour	-	beige-brown	various colours*	beige-turbid	-
Flash point	°C	none	none	none	DIN 53213
pH-value	-	approx. 8	0-1	10 ± 0,5	-
Viscosity at 25 °C	mPa*s	550 ± 350	< 100	< 10	ISO 3219

*varies from greenish to brownish

REACTION DATA

Starting temperature	20°C	Standard
Mixing ratio	4 : 1 p. b. v.	-
Start of foaming	immediately	MCT PV 10-601
End of foaming	3 min. ± 1 min.	MCT PV 10-601
Foam factor, free rise	32 - 38	MCT PV 10-601
Consumption	approx. 36 – 42 kg/m³	-
Temperature of reaction	< 90°C	MCT PV 10-601

APPLICATION METHOD

Processing temperature minimum 15°C.

CARBOFILL comp. A must be homogenised before decanted.

Both CARBOFILL components in volume ratio 4 : 1 are conveyed via a twin pump and hoses to the place of use. They are mixed with each other in a static mixing unit and discharged into the cavity to be filled. In order to keep the admissible concentrations of the ingredients phenol and formaldehyde, the total pumping rate must not exceed 4 kg/min (2 lbs/min) per 100 m³/min (3500 cft/min).

The resin foams up instantly and fills the existing voids. As containment for the foaming resin, only light sheeting e. g. from planks or jute fabric, is necessary; under favourable circumstances, a sheeting may even be unnecessary, as the foam sets during the foaming process.

The regulations and references form the Approval of the District government Arnsberg are to be considered.

For more details consult the brochure „Instruction manual on proper use of Minova phenolic resin”.

SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the usual precautionary measures for handling chemicals, see MSDS of CARBOFILL components A and B and PHENET.

The people on site should stay on the fresh air side of the material discharge.

Following important aspects are noted below:

Measures against unintentional release of CARBOFILL

Absorb CARBOFILL Comp. A with suitable bonding agent, e.g. powdered mineral, saw dust, universal bonding agents stagger until the liquid is bound. Collect bound material in suitable receptacle, e.g. plastic container, close and remove from the mine.

Attention: CARBOFILL Comp. A – do not dilute with PHENET.

Absorb CARBOFILL Comp. B with suitable bonding agent, e.g. universal bonding agent stagger until the liquid are bound. Collect bound material in suitable receptacles, e.g. plastic disposal container, close (not airtight) and remove from mine.

Attention: CARBOFILL Comp. B - Never sprinkle or neutralize released or spilled CARBOFILL, Comp. B with alkaline substances such as unhardened building materials (powdery) which are used for torcreting, anchoring, injection, as this will result in strong heat and steam development.

For more details consult the brochure “Instruction manual on proper use of Minova phenolic resin”.

PACKAGING AND TRANSPORTATION

All forms of packaging are approved according to the dangerous goods regulations for road, railway, and shipping – refer to section 14 of the SDS.

The components can be delivered in 20 l units with colour-coded caps (components A yellow cap, component B black cap, PENET green cap).

Other packaging is available upon request.

STORAGE AND SHELF LIFE

The product shelf life is six months from date of delivery when stored in a dry place between 10 °C and 30 °C. If this time is exceeded, we recommend having the material checked by Minova for compliance with specification.

Component A

The product shelf life is six months after the delivery or twelve months after the production date, when stored in a dry place at ≤ 5°C. If the

product is cooled down, transport the product at least 36 hours (approximate value) before it being used in the mine and warm the components up to the processing temperature prior to application.

Storage temperature	Time of storage
30°C	20 – 30 days
25°C	50 – 70 days
20°C	75 – 100 days

Component B

The product shelf life is 12 months after the delivery or 18 months after the production date, when stored in a dry place between - 5°C and 30°C. If the product is cooled down (< 0°C), transport the product at least 36 hours (approximate value) before it being used in the mine, and warm the components up to the processing temperature prior to application.

PHENET

The product shelf life is six months after the delivery or twelve months after the production date, when stored in a dry place between - 5°C and 30°C. Is the product cooled down (< 0°C), transport the product at least 36 hours (approximate value) before used into the mine and warmed the components up to the processing temperature.

When the materials are warmed up, local overheating, e.g. at the container wall, must be avoided by any means.

When this time is exceeded, we recommend having the material checked by Minova for compliance with specification.

DISPOSAL

Follow local regulations.

APPROVALS AND CERTIFICATES

1. Approval of the German mining authority 62.12.22.67-6-13

DISCLAIMER

MCT-120327/120410/151201/CARBOFILL_E35 (December 2020)

ADDITIONAL DOCUMENTATION

- Instruction manual on proper use of Minova phenolic resin
- MSDS of CARBOFILL component A
- MSDS of CARBOFILL component B
- MSDS of PHENET

CUSTOMER SERVICE

For additional support options available at your area, contact our local offices.

www.minovaglobal.com