MINOVA

MINING / CONSTRUCTION

EKOPUR U

RIGID POLYURETHANE FOAM

DESCRIPTION

Ekopur U comprises a series of rigid polyurethane foams. Ekopur U is two-component foam, formed by mixing component A (a mixture of polyols and additives) and component B (polymeric MDI based) in a given volume ratio. Application parameters of the foam can be adjusted to customer specific requirements.

APPLICATION AND USE

Polyurethane foam system for use as thermal insulation and construction foam.

Examples of applications:

- Insulation of pipelines and tanks (in-situ and prefabricated)
- Insulation and reinforcement of doors
- Refrigeration systems
- Filling of buoyancy chambers in ships

ADVANTAGES

- Very good thermal insulation
- Easy application
- High efficiency
- Good adhesion to multiple surfaces
- Good mechanical properties
- Ozone friendly, do not contain CFC, HCFC

TECHNICAL DATA

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

INSULATION FOAM PROPERTIES

EKOPUR U	3320 E	3320 E/R	3320 M/E	3320 W/F	3320 W/FM	3320 W	3320 N
Density of comp. A at 25 °C [g/cm³]	1.00-1.20						
Viscosity of comp. A at 25 °C [mPas]	max. 800						
Density of comp. B at 25 °C [g/cm³]	1.10-1.30						
Viscosity of comp. B at 25 °C [mPas]	220-240						
Mixing ratio A:B (by weight)	100: 105	100 : 105	100 : 110	100 : 120	100 : 120	100 : 155	100 : 100
Mixing ratio A:B (by volume)	100 : 100	100 : 100	100 : 100	100 : 110	100 : 110	100 : 140	100 : 100
Reaction start time at 20 °C [s]	14 - 30	14 - 30	30 - 40	14 - 30	30 - 40	14 - 30	24 - 34
Reaction gel time at 20 °C [s]	80 - 120	80 - 120	150 - 190	80 - 120	150 - 190	80 - 130	80 - 120
Reaction tack free time at 20 °C [s]	110 - 160	110 - 160	180 - 360	110 - 160	180 - 360	160 - 230	150 - 180
Free foam density [kg/m³]	28 - 32	28 - 32	34 - 38	30 - 34	34 - 38	30 - 34	34 - 38
Compression strength [MPa]	min. 0,13	min. 0,13	min. 0,13	min. 0,13	min. 0,13	min. 0,13	min. 0,13
Thermal conductivity coefficient at 10°C [W/m K] according to PN-EN 12667:2002	0,022 - 0,024	0,024 - 0,028	0,022 - 0,024	0,024 – 0,028	0,024 - 0,028	-	0,021 - 0,023 *
Fire classification according to PN-EN 13501-1:2004	E**	F**	-	-	-	-	V0 ***
Flammability according to PN 88/C 89297	120 °C						
Temperature resistance [°C]	max. 3.0% w 110°C		max. 3.0% w 110°C	max. 3.0% w 110°C	max. 3.0% w 110°C	0.02% w 65°C	max. 3.0% w 110°C

* - in accordance with PN-EN ISO 8497:1999
** - in accordance with PN-EN 13501-1:2004
*** - in accordance with PN-EN ISO 60695-11-10:2002

INSULATION / CONSTRUCTION FOAM PROPERTIES

EKOPUR U	3320 W/R	7020 W/FM	5520 M/E	7020 M/E
Density of comp. A at 25 °C [g/cm³]	1.00-1.20			
Viscosity of comp. A at 25 °C [mPas]	max. 800		max. 1000	
Density of comp. B at 25 °C [g/cm³]	1.10-1.30			
Viscosity of comp. B at 25 °C [mPas]	220-240			
Mixing ratio A:B (by weight)	100:155	100:110	100:110	100 : 110
Mixing ratio A:B (by volume)	100:140	100:100	100:100	100:100
Reaction start time at 20 °C [s]	40-60	30-40	30-40	34- 45
Reaction gel time at 20 °C [s]	140-230	110-130	150-210	120-180
Reaction tack free time at 20 °C [s]	240-360	160-200	190-360	160-240
Free foam density [kg/m³]	50-56	65-68	53-58	75-90
Compression strength [MPa]	min. 0.30	-	min.0.30	min. 0.70
Thermal conductivity coefficient at 10°C [W/m K] according to PN-EN 12667:2002	-	-	0.032-0.035	0.037-0.040
Fire classification according to PN-EN 13501-1:2004	-	-	-	-
Flammability according to PN 88/C 89297	120 °C			
Temperature resistance [°C]	-	-	-	-

APPLICATION METHOD

The processing of the two-component polyurethane systems to produce the final product may be carried out by hand or specialised equipment.

For the manual method, it is necessary to mix the components with a high-speed stirrer.

The mechanised method requires a pump that can handle two components and high-pressure applications.

For details, please see the Application Instructions.

SAFETY INSTRUCTIONS AND LIMITATIONS

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 Ekopur U Safety Data Sheet.

Failure to correctly follow the application equipment operating manuals and insufficient maintenance and cleaning of the equipment can lead to a change in the required 1:1 ratio of the two components, leading to a higher risk of reduced material properties and in the worst-case scenario incomplete reactions.

PACKAGING AND TRANSPORTATION

Components are packed in barrels/canisters with a capacity of 20 or 30 litres. Containers are delivered on pallets. The materials can also be delivered in alternative packages (e.g. 200 litres barrels or 1000 litres containers) – please contact Minova for further advice.

STORAGE AND SHELF LIFE

Component A shall be stored in airtight containers and in dry and well-ventilated areas at 5 - 25 °C.

Component B shall be stored in airtight containers and in dry and well-ventilated areas at 15 - 30 °C.

The warranty period for properly stored components (A and B) is 6 months.

DISPOSAL

Follow local regulations.

APPROVALS AND CERTIFICATES

1. Hygienic assessment (PZH)

DISCLAIMER

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TDS - Minova Ekochem S.A. – Ekopur U e5 May 2018

ADDITIONAL DOCUMENTATION

- Ekopur U SDS

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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CUSTOMER SERVICE

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