

## 1. PRODUCT DESCRIPTION

Two-component polyurethane adhesive SIL-PUR 80 is intended for use in methane and non-methane underground mining plants, in rooms with "a", "b", "c" level of gas explosion risk and A and B level of coal dust explosion risk.

COMPONENT POLY (mixture of liquid glass and additives)	SIL-PUR 80
COMPONENT ISO (isocyanate)	ISO KOMPONENT B

The adhesive is made by mixing its components (SIL-PUR 80 – POLY component and ISO component B) in a 1:1 volume ratio SIL-PUR 80 is a flame-retarded and self-extinguishing adhesive. Does not contain free formaldehyde or phenol.

## 2. APPLICATION

SIL-PUR 80 is recommended for sealing, strengthening and consolidation of cracked rock mass in the presence of dry, wet and waterlogged loose rocks and coal seams, as well as for strengthening earth embankments, slopes, rubble, deep excavations and sewer tunnels. Can be used to strengthen, consolidate and seal sandstone, dolomite, granite and limestone in tunnel construction.

## 3. COMPONENTS CHARACTERISTIC

### COMPONENT POLY

Mixture of liquid glass and auxiliaries. Liquid about white colour.

### COMPONENT ISO

Polymeric methylenediphenyl diisocyanate (mixture of isomers and homologues of 4,4' – methylenediphenyl diisocyanate). Liquid about dark brown colour, without suspenders.

Parameter	POLY	ISO	Unit
Density at 20°C	1,45 ± 0,02	1,20 ± 0,20	g/cm <sup>3</sup>
Viscosity w 20°C	300 ± 100	210 ± 30	mPa·s

## 4. FOAMING CHARACTERISTIC IN LABORATORY CONDITIONS

Reaction times were measured in laboratories conditions (at 20°C).

Parameter	Value	Unit
The volume ratio of mixing of components POLY:ISO	<b>100 : 100</b>	
Cream time	58 ± 42	s
Gel time	135 ± 55	s
Tack free time	25 ± 5	min
Increase in volume	1	v/v

## 5. RECOMMENDED PROCESSING CONDITIONS

Adhesive SIL-PUR 80 is used for injection gluing in dry and wet coal and other rock seams. Work should begin with drilling injection holes in the next section of the excavation (side wall, floor or ceiling). These activities should be performed with a standard mining drill bit or a pole with a handle with a diameter of 42 mm, to a depth determined in relation to local conditions and technological assumptions. The holes are drilled at a distance of 0.8 – 8.0 m. The injection pipes connected via hoses to the mixing and pumping unit should be inserted into the drilled holes. With this device, the components of the adhesive are pumped into the rock mass under high pressure (< 20MPa) in a 1:1 volume ratio. Then the polymerization process takes place, which leads to tight filling of cracks and fissures in the rock. This adhesive can also be used on existing gaps and cracks (without pre-drilling holes). When processing adhesive.

When processing adhesive SIL-PUR 80, the tips and information contained in Safety Data Sheets of both components should be taken into account.

## 6. PROPERTIES OF THE CURED ADHESIVE

Parameter	Value	Unit	Norm
Burning and incandescence time	<5	s	PN-EN 13463-1
Electric charge transferred (Q)	<60	nC	PN-EN 13463-1

## 7. PACKAGING

Adhesive SIL-PUR 80 is supplied for storage to the mine in containers 20 – 30 L stainless steel cylindrical containers with nonremovable lids equipped with stoppered pouring holes. The containers are labelled with marking established in separate regulations. Adhesive SIL-PUR 80 can be delivered in other packaging agreed with the recipient.

## 8. RECOMMENDED STORAGE CONDITIONS

Adhesive SIL-PUR 80 should be stored in original, tightly closed, labelled containers away from heat sources at 15 – 35°C. Protect from rain, frost, direct sunlight and oxidizing agents. Both components (POLY and ISO) cannot be stored together. Do not store the excess glue in the room at the bottom of the mine. It is forbidden to smoke or use open fire in the component storage room. Additionally, storage rooms must be ventilated, dry, with a hardened, dust-free and hygroscopically insulated surface. Containers with adhesive components should be transported (POLY and ISO separately) on pallets, secured against displacement, with corks up, arranged in maximum two layers. During transport, as well as during loading and unloading, special care should be taken to prevent the containers from being deformed or damaged. The shelf life for component POLY in original manufacture's packaging, stored in the recommended conditions, is **3 months**, from the production date.

## 9. REGULATORY AFFAIRS AND CERTIFICATES

- Transport regulations applied in accordance with section 14 of the Safety Data Sheet.

## 10. ADDITIONAL INFORMATION

Read the data included in the safety data sheets for both system components. Data included in this technical information are based on the results from the tests performed in our laboratory as well as on the practical experience. This data does not guarantee the properties of the final product. The results obtained may differ from those listed above especially when the use of the product is under the conditions other than originally intended. Foam application and conditions of use are beyond manufacturer's control and contractor is responsible for correct selection. Guidelines for use are included in Technical Information sheets (TDS) and safety data sheets (SDS). Failing to meet the recommended conditions can have negative impact on the processing of the system and parameters of the finished product.

**IMPORTANT:** We are happy to provide technical and substantive assistance in implementing and applying polyurethane adhesive SIL-PUR 80. At the same time when it is necessary and possible we help in adjusting relevant parameters. In all matters related to the purchase and usage of polyurethane adhesive SIL-PUR 80 we encourage you to use a direct contact to our technical and commercial representative or by writing to [prodex@pcc.eu](mailto:prodex@pcc.eu).