

# TECHNICAL DATA SHEET

**2-component, pure polyurea system. When applied by using hot spray application, it reacts immediately in a flexible waterproof coating with very high mechanical characteristics.**

**Designed for waterproofing and protection of concrete and steel structures**

## I. Applications

TEKINJECT POLYSTAR is an extremely versatile coating system that can be used for the waterproofing and protection of various structures. Its quick setting time, flexibility, and high mechanical properties, make it suitable for application in:

- Waterproofing of concrete structures.
- Roof waterproofing.
- Liners of on-site application, seamless, for secondary containment of rafts, landfills, tunnels, canals, repair of dams, reservoirs, etc.
- Wastewater facilities.
- TEKINJECT POLYSTAR can be coated with aliphatic polyurethane to provide UV protection to color change.
- Waterproofing of all type of hydraulic infrastructures also wastewater installations (high resistance to H<sub>2</sub>S)
- Waterproofing of foundations, especially those designed as barriers to Radon gas.

## II. Properties

- TEKINJECT POLYSTAR is a 2-component, pure polyurea system that needs to be applied using a 2 component, heated, spray reactor.
- Its elongation of 400% allows crack bridging.
- A very fast curing (several sec) allows you to work very fast and apply several m<sup>2</sup> per working shift.
- The high abrasion resistance makes it very suitable for application under high mechanical demands.
- A very high chemical resistance (check chemical resistance list)
- The seamless application (total continuous coating) makes it ideal as waterproofing coating.
- Non-toxic: does not contain solvents.
- Excellent adhesion on building materials such as concrete and steel

## III. Technical Data

- Typical values:

### TEKINJECT POLYSTAR COMP A:

Standard color	Specific
Viscosity (25°C)	Ca 440 mPa.s
Density (25°C)	1,05 – 1,10 g/cm <sup>3</sup>
Storage temperature	Between 10 °C and 30 °C

### TEKINJECT POLYSTAR COMP B:

Color	Yellow
Viscosity (25°C)	Ca 700 mPa.s
Density (25°C)	1,10– 1,15 g/cm <sup>3</sup>
Storage temperature	Between 10 °C and 30 °C

### VISCOSITY

Temperature (°C)	Component A (mPa.s)	Component B (mPa.s)
20	724	1348
30	396,2	406,8
40	151,5	179,2
50	111,0	127,2
60	82,9	92,0
70	79,0	75,1
80	75,6	68,1

TEKINJECT POLYSTAR Mixture:

Standard color	Specific
Mixing ratio	A=1, B=1 by volume
Pot life	Gel time mixture A+B (20 g) 4 sec at 25°C 3 sec at 60°C Tack free time 30 sec at 70°C
Elongation at break (EN-ISO 527-3)	400 %
Tensile strength (EN-ISO 527-3)	21,6 MPa
Hardness (Shore)	92A/40D
Tear strength	69 N/mm (ISO 34-1, method B)
Adhesion strength: Concrete (with epoxy primer) Steel (PU Primer)	4 MPa 5,3 MPa
Abrasion resistance	10 mg (Taber, CS-10, 1000 c, 1 kg)

▪ Curing times:

TIME	Hardness Shore A
5 min	28
10 min	40
20 min	55
1 hour	70
24 hours	80
4 days	88

TEKINJECT POLYSTAR acquires hardness to the touch within a few seconds of application.

Indicative values of the evolution of Shore A hardness (1 mm, about plastic, 25°C, 50%hr)

## IV. Processing

### 1. Substrate preparation and requirements

To obtain a good adhesion, the substrate must have the following characteristics:

- Leveled
- minimum resistance of 1,5 N/mm<sup>2</sup> (pull-off test)
- Regular and fine appearance
- Free of fissures and cracks. If there are any, they should be repaired.
- Clean, dry, free of dust, oils, and mosses
- Remove loose particles.
- NOTE: on a porous support with a high degree of humidity (without reaching the stagnation of water) a special primer is needed

Apply the epoxy-based primer. Several primers are available depending on the substrate and the substrate conditions.

## 2. Resin preparation

Homogenize the two components by means of appropriate equipment.

## 3. Injection

TEKINJECT POLYSTAR can only be applied by means of heated, 2-component, spray reactor. The recommended temperatures is  $\pm 65^{\circ}\text{C}$ . The pressure should be adjusted to about 150 bar.

The application window between application of the primer and the TEKINJECT POLYSTAR is maximum 48 hours. The minimum time depends on ambient temperature, but primer should be dry.

Depending on the application a, application thickness varies. A minimal obtained thickness of 2 mm is advised. Contact your TEKINJECT contact person for more advice on the suitable application thickness for your application.

Under normal conditions (25°C, 50% humidity), the membrane is resistant to raindrops in 10 minutes.

## 4. Cleaning

If the components are liquid, the pump can be cleaned with TEKINJECT POLYSTAR CLEANER. Hence, we recommend, every time there is a stop, and at the end of the work, flush the pumps and gun with TEKINJECT POLYSTAR CLEANER.

For more details see the application manual of the TEKINJECT POLYSTAR.

## V. Packaging

TEKINJECT POLYSTAR COMP A: 215 kg metal drum

TEKINJECT POLYSTAR COMP B: 225 kg metal drum

## VI. Shelf life

12 months after production date in the original, unopened and undamaged packaging, according to the storage instructions of each component (see technical data of this sheet). If the following recommendations are not followed, the shelf life of the material cannot be guaranteed.

## VII. Precautions and Safety Recommendations

- Wear personal protective equipment when handling this material (safety glasses, gloves, protective clothing).
- In the event of contact with the eyes: rinse thoroughly with clean water and consult a doctor if needed.
- In the event of skin contact: rinse with water thoroughly.
- Mix residues of the TEKINJECT POLYSTAR with sand and dispose of it in accordance with local regulations.
- Consult the Material Data Safety Sheet for more information on health and safety regulations.

## VIII. Company Details

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