TECHNICAL DATA SHEET

Hard, acrylic based injection system.

Designed for soil injections: stabilization of soils, capping of oil & gas wells and soil control during excavation and operation.

I. Applications

TEKINJECT AC SOIL is an injection system designed for soil injections. Due to its very low viscosity (equivalent of water) it can be used to consolidate very fine soils. Setting time can be adjusted accordingly, which guarantees deep penetration and sealing in a variable application field:

- Coagulation of soils
- Creating a waterproof barrier in soils
- Increasing barring strength of soils
- capping of oil & gas wells
- Soil control during excavation and operation.

TEKINJECT AC SOIL is compatible with the TEKINJECT AC POLYMER component, which creates an extremely durable gel, with high resistance to fluctuating water tables.

II. Properties

- TEKINJECT AC SOIL is a 4-component, very hard, acrylic based injection system that is water-expanding and reacts into a hard, durable gel.
- Good chemical resistance against many acids, bases, solvents, and fuels (check chemical resistance list)
- Non-toxic: does not contain acrylamide, methacrylamide, formaldehyde or solvents.
- Non-flammable.
- Excellent adhesion on mineral building materials such as concrete, cement and brick.
- Variable reaction time from few seconds to several minutes.
- High water retention capacity: when the injected cracks dry out due to temperature or ground water level fluctuations the gel will not crack easily
- The cured gel has excellent durability in wet-dry cycles.

III. Technical Data

- Typical values:

TEKINJECT AC SOIL RESIN:

Color	Blue liquid
Viscosity (20°C)	5-10 mPa.s
Density (20°C)	1,15 - 1,2 g/cm^3
PH	6,0-7,5
Active parts	40%
Storage temperature	2 - 35°C

TEKINJECT AC ACCELERATOR:

Color	Transparent liquid
Viscosity (20°C)	< 30 mPa.s
Density (20°C)	1,05 - 1,11 g/cm^3
PH	10-12
Storage temperature	0 – 35 °C

TEKINJECT AC NPS:

Color	White powder
Storage temperature	2 - 35 °C

TEKINJECT AC SOIL Mixture:

Color	Blue (reacted gel will turn amber)
Viscosity (20°C)	5-8 mPa.s
Density (20°C)	1,1 - 1,15 g/cm^3
PH	6,0-7,5
Elongation at Break (hardened)	300%
Tensile strength	
Water absorption	33%
E-modulus	
Min. application temp	2°C

- Reaction times:

12,5% ACC	0,5% NPS	1% NPS	2,5% NPS	4% NPS	5% NPS
5°C	6’ 45”	3’ 58”	1’ 50”	1’ 10”	1’ 00”
10°C	4’ 46”	2’ 26”	1’ 06”	44”	42”
15°C	3’ 27”	2’ 00”	40”	28”	21”
20°C	1’ 54”	55”	31”	24”	19”
25°C	1’ 45”	48”	25”	20”	15”

IV. Processing

1. Resin preparation

Create 2 mixtures with the TEKINJECT AC SOIL components in plastic buckets. When mixing the components, you should always use a wooden spatula:

Mixture 1: 20 kg TEKINJECT AC SOIL RESIN + 6% TEKINJECT AC ACCELERATOR
Mixture 2:
Option 1: 20 kg WATER + 2% TEKINJECT AC NPS
Option 2: 20 kg TEKINJECT AC POLYMER + 2% TEKINJECT AC NPS

Depending on the ambient and structure temperature, the reaction times will vary (check 4. Technical data, Reaction times). The higher the temperature, the quicker the reaction time. The more TEKINJECT AC SOIL NPS component is added, the quicker the reaction time.

2. Substrate preparation

Check the quality of the substrate, injection means increased pressure on the substrate, so the substrate needs to be of sufficient strength.

Determine the packers according to the injection technique, substrate dimensions and type of pump. According to the selected packer and injection technique, the holes in the substrate need to be drilled. Tighten the packers well in order to make sure the injected pressure is absorbed.

The distance and pattern of the packers/bore holes depend on the substrate structure and the injection technique. Please consult your TEKINJECT contact person for more information or the specific application manuals of the injection techniques.

3. Injection

Always use a 2-component stainless steel pump for acrylic injection resins. The 2 mixtures are mixed to a homogeneously mixture in the mixing head of the pump and inject in a 1-to-1 volume ratio.

We always advise to do an on-site trial in plastic cups in order to determine the reaction speed of the material.

The selected injection pressure is as low as possible. Start at the lowest point and increase until you see the resin flowing. Injection with low pressure ensure a deep penetration of the resin and complete sealing of the structure.

Start injecting at the lowest point in case of a vertical application and at the widest point for a horizontal application. Open the valve of the gun, hold the pressure, and inject until the resin appears in the next packer. Stop pumping and proceed to the next packers. In order to make sure the material is penetrated in the full structure, opening and closing the valve and letting the material flow, can be advised. Continue the process until the whole structure is sealed.

4. Cleaning

As long as the acrylic components are liquid, they pumps can be rinsed with water. Hence we recommend to flush the pumps with water every time you stop the injection for more than 15min.

Packers can be removed and the boreholes can be sealing with a fast setting mortar.

Liquid materials can be cleaned with water
Hardened material need to be put in waste as solid material non toxic

For more details see application manual of the TEKINJECT AC SOIL

V. Packaging

TEKINJECT AC SOIL RESIN: 20 kg plastic jerry can or 1000 kg IBC
TEKINJECT AC ACCELERATOR: 2 kg plastic bucket or 20 kg plastic jerry can
TEKINJECT AC NPS: 1 kg plastic bucket or 25 kg bag
TEKINJECT AC Polymer: 20 kg plastic jerry can or 1000 kg IBC

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.

Acrylate materials are highly sensitive to UV-light and high and low temperatures.

VII. Precautions and Safety Recommendations

- Wear safety and protection materials when handling this material (glasses, gloves, protective clothing).
- In the event of contact with the eyes: rinse thoroughly with clean water and consult a doctor.

Consult the Material Data Safety Sheet for more information on health and safety regulations

VIII. Company details

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