

HydroBloc®OM 591

Fast setting Organo Mineral Resins for Injection

Organo Mineral Resins are high reactive, hard hybrid resin. Typical applications are consolidation of unstable areas, filling and stabilisation, anchor technique and sealing under high water pressure.

HydroBloc®OM 591 is a combination of modified low viscosity Polyisocyanates and Silicates as second component.

After mixing the material reacts immediately to a porous free compound, without shrinking, similar to stone.

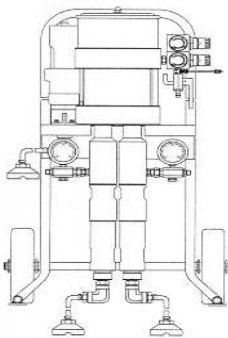
HydroBloc®OM 591 has an excellent adhesion on all mineral undergrounds and metal.

Application range:

- stabilisation of unstable rocks and soil especially in Tunneling
- glueing of brittle structures in mining
- sealing of cracks, gaps and joints in Tunneling and civil engineering.
- waterstop in heavy water intruding areas
- rock anchor resin

The excellent stability, durability and adhesion of the hardened material allows to use the material as anchor resin and binding agent for anchor mortar. It is possible to use with rock anchor made of metal and plastic. Applied anchors with HydroBloc®OM 591 are able to work under pressure after a short period of time.

Processing



HydroBloc®OM 591 is a typical 2 component systems with a 1 : 1 mixing ratio (after volume). All typical 2 component injection machines are suitable. The resin does not require any special material inside the pump such as stainless steel.

The gel time (tGel) is normally 4 - 5 minutes by 20 °C. Directly after mixing the material is weak and kneadable and very good to pump. It reacts quickly forward to a hard body similar to stone.

The reaction development is user friendly and enables a sufficient long reaction time and therefore a perfect spread of the resin in the injected area. The hardening itself is quick and reliable. This reaction process is also perfect for anchor-technique. Additional acceleration is possible through mixing the A component with a special accelerator. If required the setting and reaction time could be modified meanwhile production. Reaction after 30 seconds is possible, as well as customising.



Part-face heading machine driving heading face*

The stone like structure of HydroBloc®OM 591 allows the easy cutting of stabilised rock and soil.

***Metro Paris; Picture: RATP**

Processing with a 2 component injection machine with mixing nozzle is mandatory. Only good homogenised material guarantees a perfect technical result. The mixing nozzle must be flushed in interruption of work. As cleaning agent we recommend water with 10% cleaner HydroSolv®599.

The A component could be cleaned with the above mentioned flushing agent but the B component must be cleaned with HydroSolv®520. Never use a water based cleaner for the Isocyanate (B) component. The material cures immediately!

The reaction behaviour of the HydroBloc®OM 591 is much less dependent on temperature than with classic resins based on PUR or EP. At lower temperatures, however, the viscosity of both components increases significantly. If the resin has to be injected at extremely low temperatures (in the range < -5 °C) we recommend consulting our application engineering department.

The reaction of the HydroBloc®OM 591n is intense exothermic. The maximum reaction temperature is 100°C even in big quantities such as cavity fillings.

When bigger quantities of the resin cure the reaction temperature rises up to 100°C. The water contained in the Silicate based A component starts boiling and evaporates as water steam. This is normal and absolutely harmless.

Important !

The reaction heat of the resin won't create any temperature peaks which are dangerous for flammable substances such as e.g. Coal mining. The reaction heat won't ignite the Coal. This applies for other injection areas as well where the resin may in contact with other flammable substances.



HydroBloc®OM 591 is less difficult in this relationship than other high reactive systems based on Epoxy or Polyurethane and non water based acrylate resins.

HydroBloc®OM 591 is an alternative product to the resins supplied under the name of "Wilkit". The chemical technology is similar but the application technology of the HydroBloc®OM 591 produced by ARCAN are further enhanced and optimised. The main difference and the improvement compared with other available products are the adaptable reaction time and the approximately 50% lower viscosity of the mixed resin, additionally to the much better mechanical properties of the reacted resin.

**Properties
-individual components**

Component	A
Characteristic	Muddy, slightly yellow liquid
Density	1,35 - 1,45 g/ml at 20°C
Viscosity	400 - 500 mPa.s at 20°C
pH	11 +/- 1
Flash Point	Not applicable

Component	B
Characteristic	Dark brown, clear liquid
Density	1,10 - 1,15 g/ml at 20°C
Viscosity	150 - 400 mPa.s at 20°C
pH	Not applicable
Flash Point	≥ 200°

-and reaction products



Processing time	4 - 5 minutes without additional accelerator
Hardening time	3 - 15 minutes (depends on the volume)
Reaction product	Tough elastic, shrink free
Adhesiveness	2 - 5 N/mm²
Bonding strength	25 - 75 N/mm²
Fire behaviour	Non inflammable / A2 DIN 4102
Foam factor	Non foaming

**Storage
Work safety
Disposal**

HydroBloc®OM 591 is harmless if used as Injection resin and under consideration of the actual safety guidelines for injections and as well the government safety organisation.

We recommend the permanent use of work safety clothes and goggles when handling the materials. Avoid skin and eye contact.

Store the material in a dry and cold place and keep away from children and unauthorised third parties. Do not store together with food the materials are unfit for consumption through human or pet.

The A component is a watery silicate solution. Non flammable and no tendency for dangerous reactions. Cans must be kept closed because the silicate reacts in contact with carbonic acid in the air and will be damaged though exposition to air.

The B component is flammable but not inflammable. The product is a modified Diisocyanate and reacts as all such connections easily with water and the existing air humidity. Cans must be kept closed. In contact with water this component creates carbonic acid (CO₂). Product mixed with water or water containing materials should never be stored in closed cans. Because of the gas development the can may burst.

HydroBloc®OM 591 is storage stable for 12 month after delivery date. The safety data-sheet contains more and detailed information about the handling of the product.

The reacted material could be disposed as building rubble. In case of left over material, cure it through mixing both components. Please behave after the local rules.

These technical information describe the present-day state of knowledge these product. They should only inform about the possibilities of application and could not release the applicator of his commitment to check the possibility to use the product for the required application. Information for processing can be found in processing instructions of our product. Information about safe handling can be found in our current safety data sheet.

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