

HydroBloc® AC 555

Methacrylic injection resin, water soluble

HydroBloc® AC 555 is a polyurethane acrylate. It is produced according to a technology developed by ARCAN. This innovative resin is characterized by a whole range of special and unique properties.

HydroBloc® AC 555 is resistant to humidity and completely miscible with water before curing. Due to its hydrophilic character, the resin also wets damp substrates excellently and has an outstanding adhesion to wet substrates.

- HydroBloc® AC 555 penetrates excellently - even into the finest cracks and capillaries. It is compatible and miscible with water and can therefore be easily adapted to special requirements.
- HydroBloc® AC 555 - mixed with 1:1 water - it reacts to hard, stable pseudo-gels, by means of which e.g. leached joint mortar or tamped concrete can be stabilised or fine sands can be consolidated in civil engineering.
- Mixed with sand, HydroBloc® AC 555 produces hard synthetic resin mortars with very high strength and fast curing. Such mortars (similar to epoxy resin mortars) can be used for casting machine foundations, as anchor grouts and for similar applications.
- HydroBloc® AC 555 cures reliably even at low temperatures and is easy to apply even in frosty conditions. **Moreover** - Machines and processing equipment can be rinsed / cleaned with water!

Processing

Like the well known acrylate gels or the two-component acrylate resins for floor coatings, HydroBloc® AC-555 is an "unsaturated" resin and is cured by a radical initiated polymerisation. In contrast to the addition reactions during the curing of polyurethane and epoxy resins, the hardener component of acrylates only has the function of a reaction starter and does not have to be added to the resin in a strictly defined (stoichiometric) ratio. The setting time can therefore be manipulated (within limits) by dosing the starter. It is also possible to accelerate the system by adding activators.

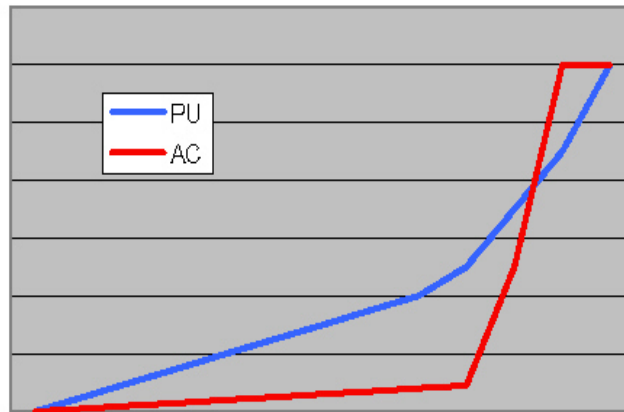


In the case of PU or epoxy resins, the reaction of the two components begins almost immediately after mixing and can be easily observed due to the more or less rapid increment in viscosity. With acrylates, on the other hand, the viscosity of the mixture of resin and hardener (= starter) remains almost the same up to a point known as GEL TIME [tGel] and then rises steeply very quickly. This is a very big advantage because the low viscosity remains until the end of the processing time.

HydroBloc® AC 555 can set using two different methods. When used as an injection resin, the base resin is mixed with 4% of a second component, called hardener, which is supplied suitably packaged and used like any other injection resin. The processing time [tGel] is about 90 minutes at 20°C material temperature, which is long enough for processing with simple equipment. If necessary, up to 10% water can be added to this mixture.



The setting time is shortened by increasing the dosage of the hardener (HydroX®587). Even faster reaction with shorter setting times, down to a few minutes, can be easily adjusted by accelerating with activators (HydroCat®585 und 586). The product is therefore very easy to handle and allows the experienced practitioner to easily adapt it to special structural requirements.



**Typical:
reaction differences
between
polyurethane and
acrylate resins**

The standard hardener of HydroBloc®AC 555 is not suitable for the alternatively possible processing as hard pseudo-gel - i.e. mixed up to 1:1 with water. For this application, the Redox system of HydroCat®546 (activator) and HydroX®549 ("hardening salt") - also used for our acrylate gels HydroBloc®Polygel and Flexilith®322 - is employed. With different quantities of activator and hardener, the gel time of an HydroBloc®AC 555 hard gel can be varied to a large extent and also adapted to the processing conditions.



■ **Further information for this special application can be found in our technical information Hard gels made of HydroBloc® urethane acrylates.**

HydroBloc®AC 555 is processed with the usual equipment and machines used in the injection technology. As with all acrylates, all parts of the equipment and machine that come into contact with the product should be made of stainless steel. Non-ferrous metals (copper or copper alloys) or simple tool steels are not suitable.

To prepare the injection mixtures, the components have to be mixed thoroughly. In principle, even small quantities should always be stirred with the machine (drilling machine with stirring propeller) until a perfectly homogeneous, streak-free product is obtained. This is particularly important because of the comparatively small quantity of hardener component 587 (approx. 4%) used!

To clean the devices, use water with a little wetting agent (commercial dish washing detergent). Fresh dirt on the construction site is also removed simply by rinsing / rinsing off with water.

■ **Bonded AC resin is also no longer soluble in solvents and can practically only be removed mechanically or with HydroClean®524 special cleaner.**

IMPORTANT: Always mix only as much material as can be processed in a reasonable time. The released heat of reaction leads to self-acceleration of the reaction in all reactive resins. This drastically shortens the processing time for large batch sizes. Also high ambient temperatures, machine temperatures (!) and material temperatures shorten the processing time of a mixture!

**Machine cleaning:
Quite simple -
with water !**

Properties



Delivered Product	: Main component and hardener
Main component	: Oligomeric urethane acrylate
Appearance	: Clear, brownish liquid
Odour	: Very faint, fruity, pleasant
Density	: approx. 1,05 at 20°C
Viscosity	: approx. 150 - 200 cStk (mPa.Sek). @ 20°C
Solid content	: 100 %
Hardener Component	: Benzoyl peroxide - suspension
Hardener volume	: 4% (on main component)
Processing time	: 70-80 Min/20°C (without additional accelerator)

Labelling

A Component	: GHS07
B Component	: GHS02, GHS07, GHS08, GHS09
VOC	: Not applicable
Toxicity Class (Schweiz)	: 4
ADR / RID (Transport)	: No limitations

Storage Safety Disposal

HydroBloc®AC 555 can be stored for at least 12 months in closed original containers, in a cool, dry place and protected from light. Quality and reactivity are not affected by storage.

The product is not flammable but combustible. This property must be considered during the storage. Do not store HydroBloc®AC 555 together with food and not make it available to children and unauthorised persons

HydroBloc®AC 555 is a harmless substance when used as an injection agent in accordance with regulations. Nevertheless, it is recommended to wear protective clothing and goggles during processing and to observe the usual industrial hygiene regulations. The national regulations, e.g. of the trade associations, concerning the handling and processing of injection agents must be observed.

In case of eye contact with the basic components or the injection mixture, always rinse with plenty of water for 15 minutes and then consult a specialist immediately.

Fully reacted HydroBloc®AC 555 is completely harmless and should be disposed of as household waste. Product residues can therefore be rendered harmless most easily by mixing and curing the components. Empty containers with liquid adhesions can be cleaned by rinsing with water and then sent for recycling (PE). Rinsing water and liquid material residues diluted with water can be hardened most easily by mixing them with cement or gypsum and then disposed of like construction waste.

Our technical information describes the current state of our knowledge about this product. It is only intended to inform about the possibilities of its application and cannot release the user from his obligation to carefully test the product for the intended applications. Information on the processing of the product can be found in the processing instructions; information on Safe Handling of HydroBloc®AC 555 in the current safety data sheet.

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ARCAN Waterproof

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Passion to invent 