

Applications in the building sector

Levasil

- **Gypsum processing**

The addition of 1-3% Levasil (e.g. Levasil 200/30%) based on the gypsum mass already liquefies the plaster slurry, so that less water is needed and the hardened plaster dries faster. This makes the finished product significantly stronger.

- **Concrete**

As a source of silicate, Levasil is suitable for use in the concrete industry and so presents a technically interesting alternative to silica dispersions, in particular in the field of liquid concrete. Levasil accelerates the setting behaviour and has a positive effect on the early strength of the concrete. By varying the particle size and concentration, the response time can be varied over a wide range. For example, Levasil is successfully used in the application of shotcrete to reduce its rebound tendency or in cementitious floor screeds.

- **Silicate paints**

Combining Levasil with potassium or sodium water glass can significantly improve the strength of the plaster system. Also, by adding Levasil, the property of silicate paints to only form closed, mechanically strong film systems on silicate substrates can be counteracted and good film formation on other, typical construction substrates can also be achieved.

By varying the particle size and concentration, the "open time" and the shelf life can be directly influenced.

In combination with acrylate binding agents the layer hardness is also significantly improved, which improves the rub resistance of the paints.

By combining sand with Levasil, repair compounds can be produced which distinguish themselves from the traditionally proven water glass/sand system by its particularly low alkali input. A combination of Levasil with water glass and special sands can possibly also be useful.

Bayhibit AM and Bayhibit N, Baypure DSP ground

The products of the Bayhibit series are phosphonocarboxylic acids. In addition to a 60% aqueous solution of the free PBTC (Bayhibit AM), the aqueous solution of the PBTC sodium salt (Bayhibit N) and a spray-dried variant (Bayhibit S) are also available. All Bayhibit types, among others, slow down the crystallisation of CaCO₃ from supersaturated solutions considerably and are especially used in water treatment as scale and corrosion inhibitors as well as dispersing agents, but also in concrete additives.

The addition of Bayhibit liquefies the concrete, significantly prolongs the setting time and partially protects the steel against corrosion. The set-retarding effect of Bayhibit is used when shotcrete must be pumped over long distances or if waste concrete no longer required must be kept liquid for longer periods. The addition of a setting accelerator then causes the concrete to stiffen. This eliminates the previously necessary disposal of waste concrete. Bayhibit is used in concentrations of a few 100 ppm, often together with other additives. On request we will gladly provide you with a patent overview.

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Baypure DSP

Baypure® DSP is a virtually water-insoluble powder, which at suitable pH values, however, releases small amounts of a hardness dispersing agent over a longer period. This hardness dispersing agent has both a liquefying and set-retarding effect in concrete preparations. The difference to conventional setting retarders, such as the products of the Bayhibit series, is the fact that not the entire amount of setting retarder is released spontaneously, but that it can be released over a longer period. Depending on the application, a combination of Bayhibit and Baypure DSP can also be useful.

Defoamer for the concrete industry

Tributyl phosphate (TBP), Tri-isobutyl phosphate (TiBP), Defoamer TE and TRE

The use of concrete plasticizers improves the flow properties of the concrete or by reducing the water content, it allows for an increase in the final strength of the finished concrete. Concrete plasticizers such as these, however, easily have a negative impact on the air void content of the concrete and therefore usually necessitate the use of defoamers as concrete deaerators.

As it is highly effective, additional quantities ranging from a few 10 mg TBP or TiBP per kg of concrete are sufficient. Since both types are quickly hydrolysed in the alkaline concrete, TBP or TiBP is ultimately no longer detectable in the hardened concrete.

The water-emulsifiable types TE and TRE are especially suited to be worked into the concrete plasticizer directly, but otherwise they have the same effect as the proven types TBP and TiBP.

For more information on product safety and handling, please refer to the safety data sheet.

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*This information is intended as a guide and should not be used in preparing specifications

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