

### Application

MAPRENAL® BF 892 ULF is a butylated benzoguanamine formaldehyde crosslinker with ultra-low free formaldehyde content and high reactivity. It is supplied as 70% solids, clear and colourless solution in 2-ethylhexanol.

MAPRENAL® BF 892 ULF is particularly utilized as a crosslinker in solvent-borne, internal and external beverage and food packaging coatings, as well as in primer formulations for coil coatings. It enables the formulation of coatings with excellent balance of hardness and flexibility, high chemical resistance, and outstandingly low free formaldehyde content.

Properties	Typical values	Standard
Non-volatile content, 2g 1h 120 °C [%]	68.0 – 72.0	DIN EN ISO 3251
Viscosity, 23 °C [mPas]	1200 – 2500	DIN EN ISO 3219-B
Tolerance n-heptane, 23°C [ml/g]	3.0 – 6.0	DIN EN ISO 11908
Colour (APHA)	≤ 30	DIN EN ISO 6271
Haze (APHA)	≤ 5	DIN EN ISO 7027
Free formaldehyde content [%]	< 0.1	DIN EN ISO 11402 4.3

### Processing

MAPRENAL® BF 892 ULF is soluble in non-polar solvents such as solvent naphtha as well as in esters, alcohols and glycol ethers and is insoluble in water. It can be formulated with polyester and epoxy resins to yield highly flexible and glossy films which are showing a high solvent and sterilization resistance after baking.

In can coating formulations optimum properties can be obtained with binder/crosslinker ratios in the range of 80/20 to 70/30, based on solids. The best ratio depends on the nature of the binder resin, the curing conditions and the required coating properties and therefore needs to be determined experimentally. Due to the high reactivity of MAPRENAL® BF 892 ULF, usage of a catalyst is normally not required. In the event of short baking times, acid catalysts such as Nacure® 5925<sup>1</sup>, typically 0.2 – 1.0% based on total resin solids, can be used to accelerate crosslinking. If acid functional groups are present in the main binder resin, the crosslinking reaction is accelerated as well.

Like other benzoguanamine resins, MAPRENAL® BF 892 ULF is not UV light resistant. Therefore, usage in top coatings requiring extended outdoor resistance is not recommended.

### Storage

Liquid resins age when stored. As a result of aging, product properties may change over time. The speed of these changes depends on storage conditions.

MAPRENAL® BF 892 ULF can be stored for at least 12 months from the date of production at 15 - 25 °C in originally closed containers. If exposed to higher temperatures, resin properties might change even before reaching the storage life indicated above. At freezing temperatures, the resin becomes highly viscous, but may be fully reused after warming up to room temperature. Exposure to direct sunlight should be avoided.

The storage life indicated above is a guideline based on our experience. Users of this resin should conduct individual tests to fully understand possible changes to the product performance due to aging.

<sup>1</sup>Nacure is a registered trademark of King Industries, Inc, [www.kingindustries.com](http://www.kingindustries.com)

#### Handling and safety requirements

Detailed information is available in the safety data sheet for the product.

#### Common indications

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