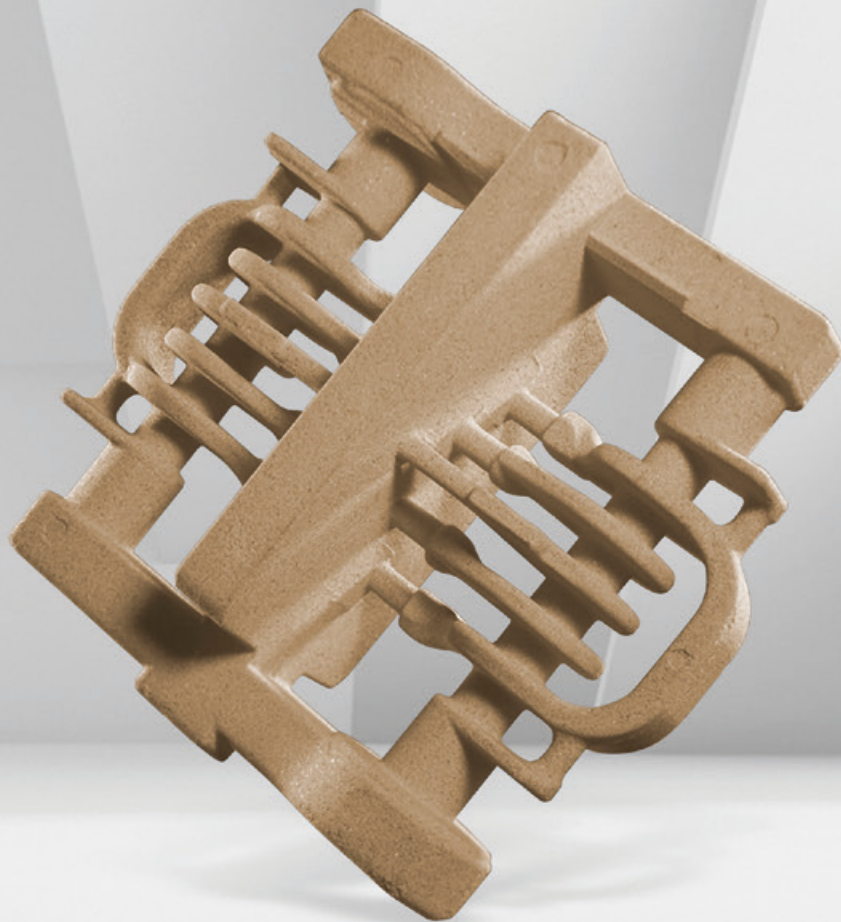


Hot-Curing Processes

Wide range of resin systems,
precoated sands and moulding materials





Hot-curing core making and moulding processes

The hot-curing core-making and moulding processes are the oldest mass-production processes using synthetic resins. They were founded in the Croning process, the patent for which dates back to 1944. This was followed in 1960 by the Hot-Box and five years later by the Warm-Box process.

The hot-curing processes are characterised by a variety of properties and consequent applications. All heat-hardening processes have one thing in common: they produce very high-quality castings. Certain castings can only be produced safely and to a high quality using these processes. For example, the production of hydraulic valve housings or sanitary fittings would be inconceivable without the use of these processes.

The advantages of cores and moulds produced with heat-curing binder systems are:

- high dimensional stability
- high thermal stability
- low deformation during casting
- low condensate formation
- good core breakdown after casting
- very high bending strength
- very good core storage properties
- good casting surfaces
- low tendency to form veining
- low lustrous carbon formation

A wide range of products is available to achieve the above properties.

Thermoset® / Urea Resin modified with Furfuryl Alcohol

The Thermoset® resin family is created by modifying urea resins with furfuryl alcohol. The modification produces sufficient thermal resistance while maintaining a short curing time (cycle time) when using the adapted hardener. Systems of this group are very well suited for the production of aluminium cylinder heads. Other areas of application for the resins in the Thermoset range are malleable cast iron and thin-walled grey cast iron.

Resin / Pure Urea Resin

Our “Resin” resin family is characterised by its excellent core decomposition properties. Cores made with Resin and the appropriate hardener can be removed excellently from the casting in the connected decoring process (e.g. vibrating, troughed belt blasting). Separate heat treatment for decoring the castings is not necessary in most cases. The system is also characterised by extremely short curing times (cycle times). With these properties, the resin system with the adapted hardener is predestined for sanitary fitting castings in brass. It is used worldwide with great success.

Resital® / Pure Phenolic Resin

The resins of the Resital® family are used in thick-walled grey and nodular iron and steel castings.

The major advantages are

- free of Nitrogen
- low odour due to very low Formaldehyde content
- excellent bending strength values with high storage stability
- high thermal stability reduces deformation during the casting process.

Furesan® / Urea Furfuryl Alcohol and Phenolic Resins

The Furesan® resins with the corresponding Furedur hardeners are used for every casting metal. From engine blocks and brake discs to aluminium castings. One of the great advantages of this system is the very low gas emission during casting, combined with an extremely low amount of condensate.





Croning® Process / Shell Moulding Process

This process has been used in foundries around the world for 80 years. The HA Group produces the necessary Novolak resins (solid resins), known under the brand names Corrodur® and Resital®, at several locations. Adapted to the most diverse requirements of the foundries.

In Europe, the HA Group produces resin-coated sands throughout its own coating plants, which are highly specialised for the various applications. Adaptation to the requirements of the respective casting is achieved both through the selection of the resin type and through the selection of the sand base. Here, in addition to the qualified silica sands of all the usual grain sizes, an extensive selection of special sands is available.

The Croning process convinces with the highest dimensional stability, the lowest susceptibility to sand expansion defects and, when using shell moulds or hollow cores, the lowest moulding material usage. The simple and insensitive processability are a further plus point for the process and have given it a high status worldwide.



HÜTTENES-ALBERTUS

CHEMISCHE WERKE GMBH

Wiesenstr. 23
40549 Düsseldorf
Germany

Phone: +49 211 5087 -0
pm.germany@ha-group.com
ha-group.com