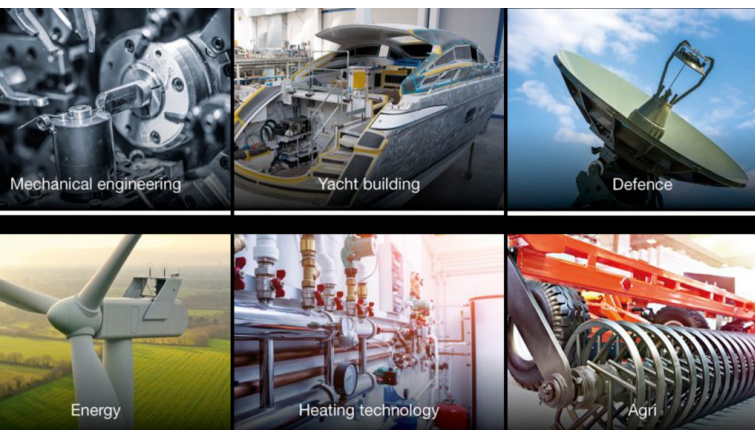


NEW MAGNASET™ 2.0

Environmentally-friendly furan resin with improved GHS classification

SUCCESS STORY



STARTING POINT & CHALLENGE

Aluminium Gieterij Oldenzaal produces high-quality castings with a strong awareness of sustainability and occupational health aspects. The furan system in use was a conventional one with >80 % furfuryl alcohol and „skull & crossbone“ labelling.

Aluminium Gieterij Oldenzaal approached ASK Chemicals with the following requirements:

- Provide the best available furan technology in terms of worker health and safety
- Reduce harmful emissions during mixing and moulding
- Keep high level of quality and productivity

SOLUTION

ASK Chemicals proposed MAGNASET™ 2.0, a new generation of furan resins, that offers a low-formaldehyde and a low free furfuryl alcohol content with a milder classification requiring no „skull & crossbone“ labelling. The casting performance of the new MAGNASET™ resins is comparable to „state-of-the-art“ furan resins (with a free FA: 50-95 %), although MAGNASET™ 2.0 resins have a significantly lower free FA content (< 40 %). This leads to a substantial reduction in furfuryl alcohol emissions during mixing and molding.

RESULTS

- Simple conversion without changing the foundry setup
- Same level of high-quality castings
- Reduction of smell during mixing and forming
- Increased worker health & safety



ALUMINIUM GIETERIJ OLDENZAAL

PROFILE OF THE FOUNDRY

Location	Europe
Capacity	> 1,500 to / year
Material	Aluminum
Casting weight	up to 1,500 kg
Cast parts	Heat exchanger, flywheel housing, pump housing, gear housing, radar system parts, combustion chamber, vacuum chamber...
Markets	Mechanical engineering, foodstuff, energy, yacht building, defence, lorry industry, heating technology, medical world, furniture industry, ...

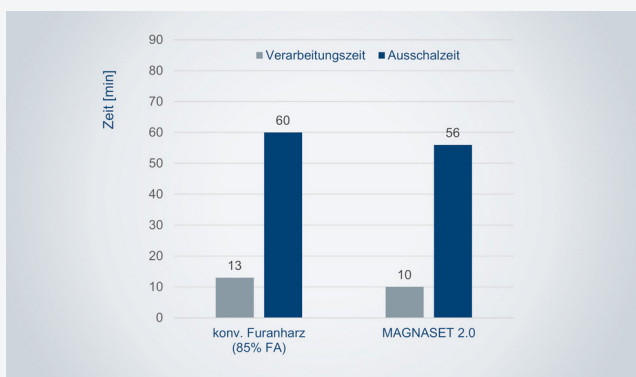


Figure 1: Comparison of reactivity times of conventional furan resin and MAGNASET™ 2.0

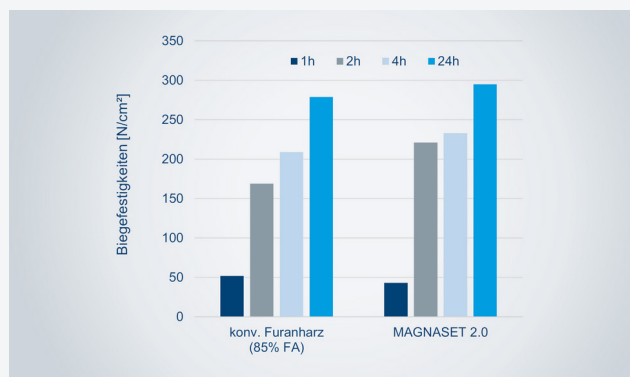


Figure 2: Comparison of flexural strengths after 1, 2, 4 and 24 hours of conventional furan resin and MAGNASET™ 2.0

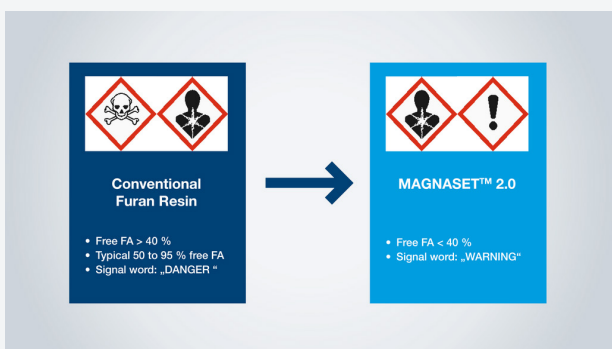


Figure 3: New generation of environmentally friendly furan resins without „skull & crossbone“ labeling, that feature a low content of free furfuryl alcohol and can easily replace conventional furan resins.

TECHNICAL PROFILE OF THE SOLUTION

MAGNASET™-resins can be cured with acidic hardener GS II, for example, and the reactivity can be easily adjusted by selecting the appropriate type and quantity of hardener. The intrinsic high reactivity of those resins makes it possible to use less reactive catalysts with reduced sulfur content, which ASK Chemicals offer as the “RS” hardener series. In combination with the low free FA content, the “RS” series has the potential to further decrease overall emissions. The portfolio encompasses a series of resins with tailored properties suitable for all types of casting and customer needs, providing good molding properties and excellent casting surfaces.

BENEFITS AT A GLANCE

Technological

- Performance comparable to conventional furan resin
- Stable low viscosity
- Long storage stability
- Easy mechanical sand reclamation

Environment & Workplace

- Labeling without „skull & crossbone“
- Low release of harmful substances during mixing and forming
- Low furfuryl alcohol emissions
- Improved worker health & safety