Nouryact™ Cobalt-free accelerators
Proudly presented by AkzoNobel

Just as nature likes to put on an impressive display, we are proud to show off the results of our efforts in sustainability and innovation.

Anticipating increasing environmental pressure on cobalt, we are now leading the way with a range of breakthrough, Cobalt-free accelerators for the curing of unsaturated polyester and vinyl ester resins. These products, based on Copper, Manganese and Iron offer sustainable alternatives to traditional cobalt octoate and cobalt acetate.

Nouryact™ accelerators combine high reactivity with process flexibility to secure the desired mechanical properties in the required product cycle time.

www.akzonobel.com/polymer
Be Cobalt-free

Innovation continues unabated and we’re now leading the way with a new generation of more sustainable thermoset accelerators.

Our Cobalt-free accelerators are based on Copper, Manganese and iron and can be used as alternatives for conventional Cobalt-based accelerators, while maintaining existing cycle times and mechanical properties.

Our Nouryact™ range of Cobalt-free accelerators is part of our continuous drive towards an innovative, Cobalt-free composites world.

Cobalt-free Nouryact accelerators

Nouryact accelerators are highly reactive and can be used in most standard U/P resin types, including VE and DCPD resins. They can be fine-tuned on geltime, time to peak and peak exotherm. We can recommend a Cobalt-free curing system that matches your specific application.

Nouryact CF12
- Copper-based
- Recommended for ambient temperature curing
- Used to pre-accelerate VE resins allowing curing with Butanox® M-50 (standard MEKP) without gassing

Nouryact CF13
- Copper-based
- Recommended for ambient temperature curing
- To improve pot-life of pre-accelerated resins without gelltime drift

Nouryact CF20
- Manganese-based
- Recommended for elevated temperature curing
- Very low discoloration after curing

Nouryact CF30
- Iron-based
- Ability to reduce the activation temperature of peroxyesters
- Suitable for curing artificial marble slabs (at elevated temperature using tert-butyl peroxycarboxylate)

Proven performance

The table below shows that our Copper-based accelerators can serve as an excellent alternative to traditional Cobalt-containing accelerators. For both Nouryact CF12 and Nouryact CF13 the peak exotherm is higher. Consequently the Barcol development and curing is much faster and more efficient resulting in lower residual styrene levels. For an actual GRP end product with a different laminate thickness the intakes can be easily adjusted and fine-tuned to suit the required curing characteristics.

<table>
<thead>
<tr>
<th>Intakes per 100 resin (phr)</th>
<th>High reactive orthophosphonic resin</th>
<th>Butanox M-50</th>
<th>Accelerator NL-49P (Cobalt 1%)</th>
<th>Nouryact CF13</th>
<th>Nouryact CF12</th>
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Our sustainable journey continues

Currently, we are developing a range of Iron-based accelerators to expand our product portfolio. These highly reactive products are suitable for curing at both ambient and elevated temperatures, and can be used in combination with most general purpose resin types and curing systems. Iron-based accelerators can be used with the main curing agents such as Butanox M-50 (standard MEKP), Butanox LPT and Trigonox® K-90 (cumyl hydroperoxide), in some cases even with Trigonox 44B (AAP).

Like all Nouryact products Iron-based accelerators show no gassing when used in combination with standard MEKP to cure an epoxy-based VE resin at ambient temperature.

One of our latest products introduced to the market is Nouryact CF30. This Iron-based accelerator has the specific ability to reduce the activation temperature of a peroxyester like, for example, Trigonox C. This allows for faster curing and quicker demolding or for curing at lower mold temperatures.

Nouryact CF30 is very suitable for curing artificial marble slabs at elevated temperature (approx. 85°C). It is used in combination with a promoted tert-butyl peroxycarboxylate (Trigonox 93) to get fast and efficient curing with very low residual styrene levels. The shelf life of the premix with Nouryact CF30 is very long as is required for this application.

Nouryact CF30 may also be used in other applications such as Hot Press Molding (SMC/BMC).

Product Data Sheets of our Nouryact accelerators are available at www.akzonobel.com/polymer. On request we also provide basic test data.

Accelerate your business

Nouryact accelerators offer you a long-term sustainable advantage and help grow your business. We are ready for a Cobalt-free composites world. Are you?

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Nouryact™ accelerators are BluCure™ products. BluCure™ is synonymous with raise-the-bar technologies related to Cobalt-free curing of composite resins. Developed by industry leaders in innovation and sustainability, BluCure™ Technology is available through licenses to all composite component and resin manufacturers. BluCure™ Technology offers opportunities for outstanding performance and sustainability and user value both now and in the future. The BluCure™ Seal is a guarantee to you and your customers that your products are 100% Cobalt-Free. More information can be found at www.BluCure.com