

## Controller for Free Radical Polymerization

BlocBuilder<sup>®</sup> controller is a remarkable new alkoxyamine compound that allows the control of free radical polymerizations. This nitroxide-based technology is the basis of several Arkema patents and can be used to customize polymer structures with tailored properties. BlocBuilder<sup>®</sup> controller enables the production of polymers with:

- Reduced polydispersity (tighter molecular weight distribution)
- Controlled copolymer sequencing, allowing manufacture of block, gradient, and star copolymers

As a result, novel polymers with unique properties can be created for applications in diverse fields including adhesives, toughening agents, compatibilizers, coating additives, paint additives, dispersants, and medical, electronic, personal care, or consumer goods.

The technology can enable numerous benefits including improved adhesion, toughness, rheology, pigment dispersion, and aesthetics. Arkema has developed expertise in designing copolymers to meet specific end-use performance needs.

### Designed to Control Most Polymerizations

- Polymerization media: bulk, solvent, suspension, or emulsion
- Reaction temperature: 25°-125° C (depending on monomers used)
- Monomers: a wide range including styrene, alkyl acrylates, alkyl methacrylates, acrylamide, methacrylamide, and their derivatives, and other functional-monomers (such as anhydrides, hydroxyethyl methacrylate, glycidyl methacrylate, acrylic acid, methacrylic acid, anionic and cationic (meth)acrylates, and many others)

### Ease of Use

- Easily adapts to standard reactors
- Monomers can be used without special purification requirements
- Kinetics comparable to standard radical polymerizations
- No residual sulfuric or metallic impurities from the controller
- Controller and initiator are conveniently combined in one compound
- Provides capability to achieve high molecular weights while maintaining control.

Arkema's flexible business model supports diverse marketplace requirements. Depending on your needs and interests, you can purchase either the BlocBuilder<sup>®</sup> controller, reactive copolymer intermediates, or custom-designed copolymers.

Visit our website at [www.BlocBuilder.com](http://www.BlocBuilder.com) to contact us and find out how this technology can help you achieve the results you have been seeking.