

Agglomeration—organic binders

Stronger agglomerates for stable mining operations



Agglomeration sits at the intersection of fines generation, moisture variability, and downstream process stability. As a post-treatment step, it converts fine particles into larger, more stable structures that support transport, handling, and processing across pelletizing, briquetting, and extrusion applications.

Because this stage governs permeability and mechanical durability, even small weaknesses in agglomerate strength can ripple through the operation—affecting handling efficiency, dust generation, and downstream recovery. Effective agglomeration is therefore not just about strength, but about how particles bind and respond to changing operating conditions.

Particle binding and agglomerate stability

Agglomeration binder chemistry is applied to control how fine particles adhere and form durable structures during agglomerate formation.

Improved wet and dry strength development

Binder chemistry promotes particle adhesion and solid bridge formation, supporting both green (wet) strength and dry strength required for handling, drying, and transport.

Stability across variable operating conditions

Chemistry is designed to perform reliably under variable moisture levels, fine particle distributions, and challenging water chemistries, including high salinity and brine rich systems.

Compatibility with agglomeration processes

Binder solutions support pelletizing, briquetting, and extrusion without altering downstream process requirements or material purity.

Operational outcomes

- Stronger, more durable agglomerates under variable conditions
- Reduced fines generation, dust, and material segregation
- Improved handling efficiency and downstream permeability
- Greater process stability across formation, drying, and transport

How this works in practice

Across fines, moisture conditions, and agglomeration processes, these chemistries enable strong particle binding, agglomerate stability, and process compatibility. This is demonstrated in application specific operating conditions as seen in the case example on page 2.

Assess your agglomeration conditions and start a technical discussion at nouryon.com/mining/agglomeration

Core brands:

- Celect® organic binders
- Finnfix® organic binders

Case Example: Controlled pellet growth under constrained mixing conditions

Challenge

Short mixing residence time limits binder hydration—reducing pellet growth control, yield, and process stability.

Solution

Celect® RBA binder delivers:

- Rapid hydration for immediate activation
- Stable performance across a wide dosage range
- Consistent pellet nucleation and growth—even in constrained mixing conditions

Proven performance

- Maintains stable pellet growth and strength at short residence time
- Enables higher binder dosage without reducing yield
- Improves process runnability and stability

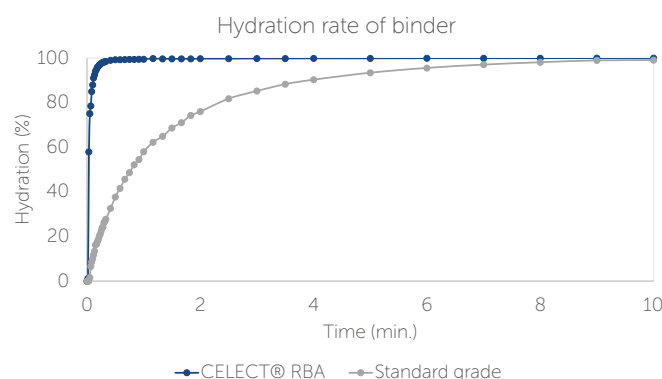
What the data shows (see graph)

- Celect® RBA binder hydrates significantly faster compared to standard grade binder

Impact

- Greater process flexibility
- Stronger, more consistent pellets
- Stable performance without sacrificing throughput

Higher yield, stronger pellets, and stable operation—no trade-offs with mixing time.



Review your agglomeration approach with our technical team at nouryon.com/mining/agglomeration

Nouryon

Nouryon is a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of approximately 8,200 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our website and follow us @Nouryon and on LinkedIn.

All information concerning our products and/or all suggestions for handling and use contained herein (including formulation and toxicity information) are offered in good faith and are believed to be reliable. However, Nouryon makes no warranty express or implied (i) as to the accuracy or sufficiency of such information and/or suggestions, (ii) as to any product's merchantability or fitness for a particular use or (iii) that any suggested use (including use in any formulation) will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. The user must determine for itself by preliminary tests or otherwise the suitability of any product and of any information contained herein (including but not limited to formulation and toxicity information) for the user's purpose. The safety of any formulations described herein has not been established. The suitability and safety of a formulation should be confirmed in all respects by the user prior to use. The information contained herein supersedes all previously issued bulletins on the subject matter covered.

Products mentioned are trademarks of Nouryon and registered in many countries.

nouryon.com