

Finnfix[®] and Celect[®] CMC depressants



Mining solutions for
improved performance



Nouryon

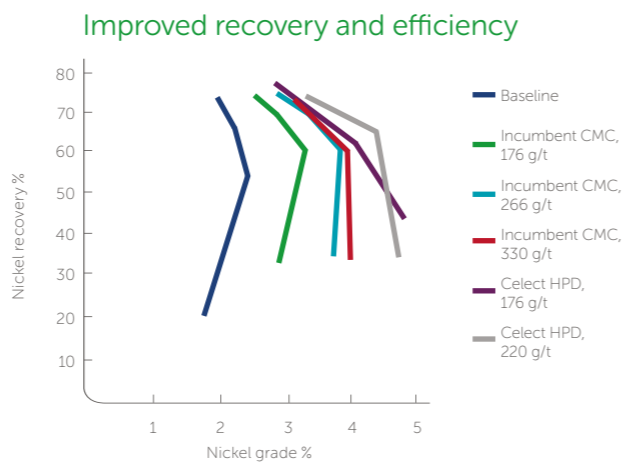
Unique advantages for the mining industry

Not all carboxymethyl cellulose (CMC) is created equal. Our Finnfix® and Celect® CMC mining solutions are designed to enhance the depressant function improving the recovery and grade of valuable mineral while reducing costs and reagent consumption.

We collaborate with you to understand the requirements of each mine, combining our expertise in metallurgical testing with a robust product portfolio to deliver solutions that will improve flotation efficiency.

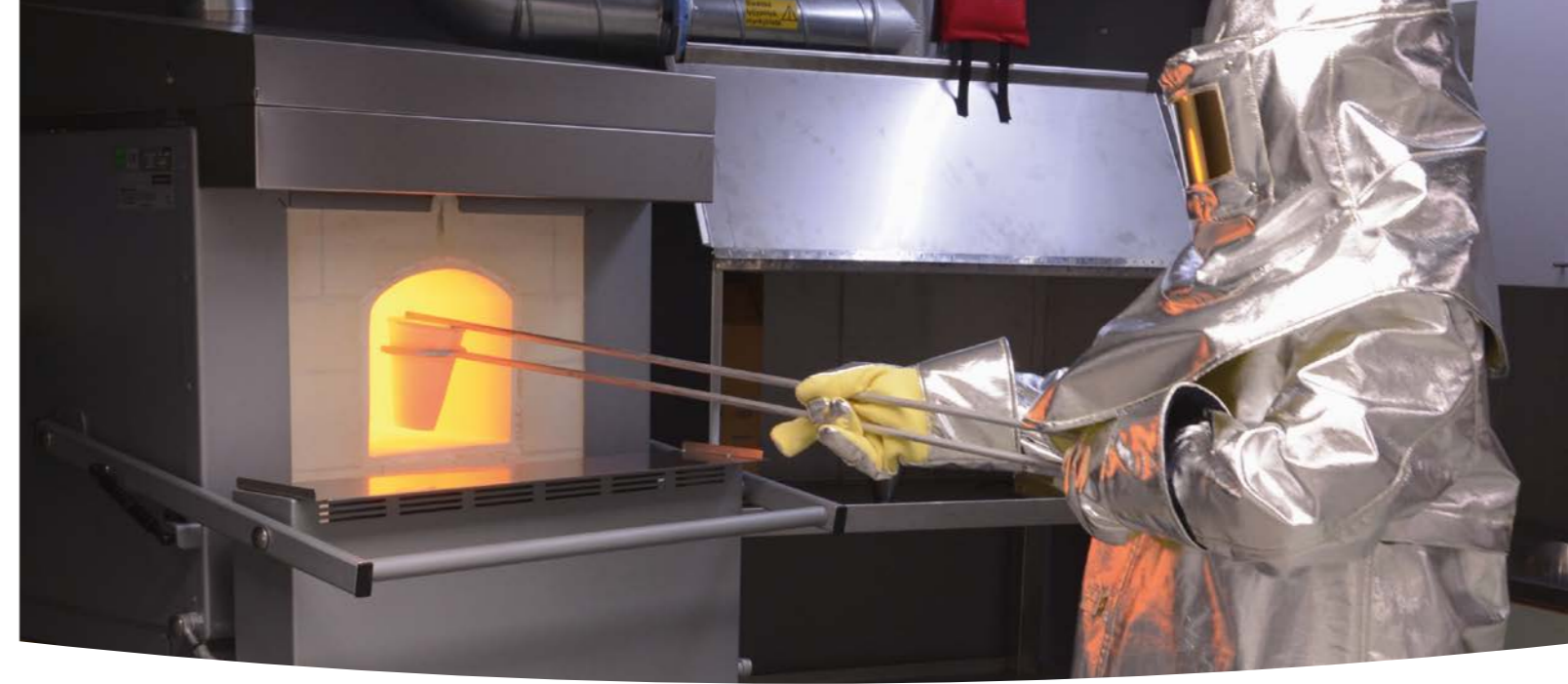
In laboratory tests, the use of Finnfix® and Celect® CMC was shown to decrease depressant consumption by more than 50%, reduce reagent cost by up to 20% and increase valuable metal recovery by at least 10% for mines around the world. In full-scale plant operations, our CMC reagents have also been proven to significantly lower the amount of depressant consumed when compared to alternatives.

**50% decrease in depressant
20% reduction in cost
10% increase in recovery**



Decreased consumption at plant scale

Mine	Mineralogy	Reagent	Consumption, g/t
Case 1 - Nickel	Talc and Magnesite	Next best alternative CMC depressant	420
		Celect® CMC in current use	190
Case 2 - Nickel	Amphiboles and Pyroxenes	Next best alternative CMC depressant	630
		Celect® CMC in current use	412
Case 3 - Nickel	Talc Amphiboles	Next best alternative	480
		Finnfix® CMC in current use	400
Case 4 - PGM	Talc and Pyroxenes	Next best alternative in current use	370
		Celect® CMC in trial	113



Collaborating with customers

Throughout the lifecycle of a mine, the changing characteristics of ores requires cyclical refinement of mineral processing systems. We collaborate closely with our customers so we can routinely optimize and refine depressants to ensure our CMC products continue to deliver significant value by reducing dosage and cost and improving performance during flotation.

From innovating technology in our laboratories to rigorously validating results on-site with your metallurgists, we work with you across the value chain to achieve your goals.

Investing in flotation innovations

With more than 50 years of flotation application research and development, we have built an extensive understanding of the fundamental chemistry and adsorption mechanisms involved in selective flotation. Based on the data obtained in our metallurgical testing laboratory, we identify the best solutions for your application.

Starting at the molecular level, we use modeling to test and prove which factors affect depression efficiency and selectivity. High-confidence testing is performed by our scientists and metallurgists to ensure data reliability and quantify the value associated with recovery and reagent efficiency while minimizing trial risks. You can rely on the consistent quality of our responsibly sourced, bio-based Finnfix® and Celect® CMC produced in Finland – the largest CMC production plant in the world.

Contact us today to harness our robust expertise, empirical testing and product selection to maximize your metal recovery and reagent use efficiency.

Cyclical review process



Contact us directly for detailed product information and sample request
website | nouryon.com/markets/mining
email | mining@nouryon.com

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 more than 7,900 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.

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