



Tackling Chrome Challenges in PGM Smelting

How MetDep TAC Provides a Solution.





Platinum Group Metals (PGMs) are essential in key industries like automotive, electronics and renewable energy. However, the journey from extracting ore to refined metal is no simple task and one of the complications that makes it challenging is the presence of chrome (Cr_2O_3), which can occur during the smelting process.

Deep within the furnace, metals are coaxed from rock, but when chrome is present, it disrupts this delicate process. Particularly in regions like South Africa, where PGM and chrome deposits are often intertwined, chrome becomes more than an inconvenience, but also a costly challenge.

Imagine a smelting operation trying to extract PGMs like platinum, palladium and rhodium. As the furnace reaches blistering temperatures, the presence of chrome (Cr_2O_3) increases the energy required to keep things flowing smoothly. Chrome has a high melting point, meaning more power is needed and slag (a molten byproduct in the process) becomes viscous and hard to manage. Chrome-rich slag wears down equipment faster, causes costly shutdowns and complicates waste disposal due to its toxic properties.

Enter MetDep TAC, a breakthrough from MetSop engineered to tackle these challenges head-on. MetDep TAC is a specialised depressant designed to target chrome minerals during the flotation process, significantly reducing chrome levels in the concentrate before it even reaches the furnace. By selectively depressing chrome, MetDep TAC allows smelting to proceed more efficiently, using less energy and lowering maintenance needs.



In plant trials, MetDep TAC has shown the power to reduce chrome content in concentrates by up to 30%, smoothing out operations and minimising unexpected shutdowns. But its benefits go further: reduced chrome content leads to higher payability for PGM producers, as penalties associated with chrome contamination decrease. Enhanced concentrate quality means more of those precious PGMs make it through the smelting process, increasing profitability with each ton processed.

Beyond financial savings, MetDep TAC also helps companies meet tightening environmental regulations, lowering the risk and cost of disposing chrome-laden slag. It's a sustainable, forward-looking solution that addresses chrome contamination from every angle.

For PGM producers grappling with chrome's disruptive effects, MetDep TAC is more than a product, but a game changer that turns operational setbacks into streamlined success.

