DIRECT FEEDBACK AND FAST COUNTERACTIONS

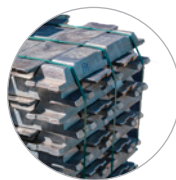## From bauxite to alumina to aluminium processing

REDUCE COSTS FOR REAGENTS AND ENERGY DURING MINING, REFINING AND SMELTING

Malvern Panalytical delivers innovative and unique analysis solutions to increase the efficiency of your bauxite mining operation, alumina refinery and aluminium smelters. Constant and accurate monitoring will enable significant savings in each step of the process.

Bauxite mining

Monitor available alumina and reactive silica in the mine.
Enable fast counteractions on changing bauxite composition.
Guarantee ore quality to avoid penalties.

Aluminium smelting

Avoid bath solidification with accurate and high frequent monitoring.
Minimize energy consumption.
Automate analysis for fast, safe and robust feedback.

Alumina refining

Reduce consumption of caustic soda and energy.
Control alumina particle size.
Optimize red mud settling rates and flocculant consumption.

Remote sensing (NIR) - **On-line** monitoring (CNA / NIR) - **Elemental** testing (XRF) **Particle size** and **shape** characterization (PSD) - **Mineralogical** analysis (XRD / NIR) - **Sample preparation** (Fusion)

www.malvernpanalytical.com/mining

Malvern Panalytical
a **spectris** company

ANALYTICAL SOLUTIONS TO **INCREASE PROFIT AND EFFICIENCY** OF YOUR **ALUMINIUM PRODUCTION**

DETECT AVAILABLE ALUMINA AND REACTIVE SILICA IN THE MINE
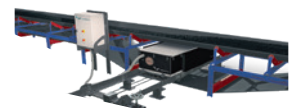
QualitySpec7000 cross-belt analyzer
- Allows on-line mineralogical monitoring.
- Enables real-time analysis of available alumina and reactive silica.
- Operates under completely safe conditions.

ENABLE OPTIMAL BLENDING OF THE ALUMINA REFINERY RAW MATERIAL FEED

CNA cross-belt analyzer
- Provides the elemental composition of your entire ore in real-time.
- Delivers reliable results independent from your belt width, load, variation or particle size.
- Operates under completely safe conditions.

CONTROL MINERALOGY AND PROCESS PARAMETERS FAST AND EASY

Aeris
- Facilitates intuitive and accurate analysis of the mineral content of bauxite, alumina modifications (α, γ) and bath composition.
- Operates in rough industrial environments and remote destinations.
- Automatable.

ENHANCE LABORATORY PERFORMANCE WITH AUTOMATED ANALYSIS

Automation
- Guarantees safe sample taking, transportation, preparation and analysis.
- Turn-key laboratory solutions.

ANALYZE IMPURITY LEVELS AND GUARANTEE QUALITY

Zetium
- Allows fast, accurate and simultaneous analysis of light and heavy elements.
- Tracks impurities to lowest levels.
- Designed for high-throughput environments.

INCREASE LIFETIME OF MILLS AND ENSURE OPTIMAL REFINING AND SMELTING CONDITIONS

Mastersizer 3000
- Monitors easy and accurate the particle size of bauxite and alumina.
- Enables wet and dry analysis
- Automatable.

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