

Cyanide Analysers

Information Sheet

Cyanide accounts for a significant portion of the total operating costs of many gold and silver mines. In recognition of this fact, Orica has developed a range of On-Line Cyanide Analysers designed to optimise cyanide usage, thereby lowering costs, without sacrificing precious metal recovery rates.

Orica's technical team, with extensive experience in gold processing works, work in close partnership with customers to select and design an on-line analyser to meet their needs.

OCM5000 Free Cyanide Analyser

The OCM5000 On-Line Free Cyanide Analyser has been developed for exclusive use in the gold and silver mining industries to optimise cyanide addition.

Based on well-proven potentiometric titration technology, the OCM5000 represents a cost-effective cyanide management solution.



Figure 1 OCM5000 Analyser

The analyser can be configured to monitor one or two streams, with sodium cyanide concentrations ranging from 0 to 10,000 ppm.

Benefits of the OCM5000

- Optimal precious metal recovery through improved control of cyanide in the extraction stage.
- Reduced cyanide consumption, leading to lower operating costs.
- Reduced cyanide discharge into tailing storage facilities, a significant environmental consideration.
- Assists in achieving compliance with ICMC practice 4.2.

OCM6000 WAD Cyanide Analyser

The OCM6000 On-Line WAD Cyanide Analyser is based on the same operating platform as the highly successful OCM5000 analyser.

The OCM6000 incorporates an innovative micro-distillation unit and potentiometric titration technology to measure WAD cyanide concentrations.



Figure 2 OCM6000 Analyser

The OCM6000 utilises the on-line method of WAD cyanide measurement closest to the preferred laboratory method, as defined by the International Cyanide Management Code (ICMC). The unit may be configured to monitor one or two streams, with WAD cyanide concentrations ranging from 3 ppm to 1,000 ppm.

Benefits of the OCM6000

- Reduced cyanide destruction costs through improved control of cyanide destruction reagents.
- Provides evidence to support compliance with the ICMC regarding the levels of WAD cyanide entering tailings storage facilities.

Proven Performance

Orica is a leading supplier of commercial explosives and reagents to the mining industry, with a worldwide operational network that spans Australia, Asia-Pacific, Europe, Canada, USA, Latin America, and Africa. Over 40 on-line cyanide analysers have already been installed worldwide, providing performance and cost benefits.

“The installation of the cyanide analysers has permitted controlled automatic cyanide dosing to individual tanks within a fine tolerance. This has resulted in greater metallurgical recovery through optimisation of cyanide set points with varying mineralogy. The improved control to set points compared to manual titrations and adjustments has also reduced the periods of gold loss due to insufficient cyanide, as well as reduced operational costs during periods of above set point cyanide levels impacting on cyanide usage and subsequent detoxification costs.”

Richard Holder, General Manager,
Beaconsfield Gold Mine

Technical Support

Orica Mining Chemicals is a global industry leader, committed to providing our customers with innovative products and superior service quality. To achieve this end, Orica has invested heavily to upgrade both our technical capabilities and research and development programs, ensuring we possess the technical edge necessary to meet the evolving needs of our customers.

Orica have strong representation in the fields of chemistry, chemical engineering, metallurgy, civil, mechanical engineering and safety, health and environment, expertise that can be drawn upon at any time to support the needs of our customers.

Orica also works closely with our customers to measure the commercial, technical, safety, health and environmental benefits associated with their adoption of Orica's on-line cyanide analysers.

Parker Centre Evaluation

Orica commissioned the Parker Centre to conduct an independent review of the OMC6000 On-line WAD Cyanide Analyser. The following excerpt was taken from this report:

‘On-line analysis of samples containing only sodium cyanide produced consistent results, with the average values showing good agreement with those obtained from manual titrations. It was also found that the method successfully determined cyanide contained in copper cyanide and nickel cyanide complexes and excellent agreement with results obtained by an external laboratory was achieved.’

Safety Health & Environment

Orica operates to the highest standard of safety, health and environment, guided by our vision of “No injuries to anyone, ever.” This vision underpins Orica's commitment to ensure that both our employees and customers operate in a safe and healthy work environment.

Orica is also a signatory to the International Cyanide Management Code (ICMC), a charter designed to “improve the management of cyanide used in gold mining” (ICMC Website). Orica's Free Cyanide Analyser optimises the amount of Sodium Cyanide employed in the extraction process to improve operational performance and minimise costs. Orica's WAD Cyanide Analyser reduces reagent usage whilst meeting discharge requirements. The adoption of an Orica on-line analyser is an effective tool that demonstrates adherence to the ICMC.

Further Information

Please visit www.orica-miningchemicals.com or contact the National Customer Service Centre

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