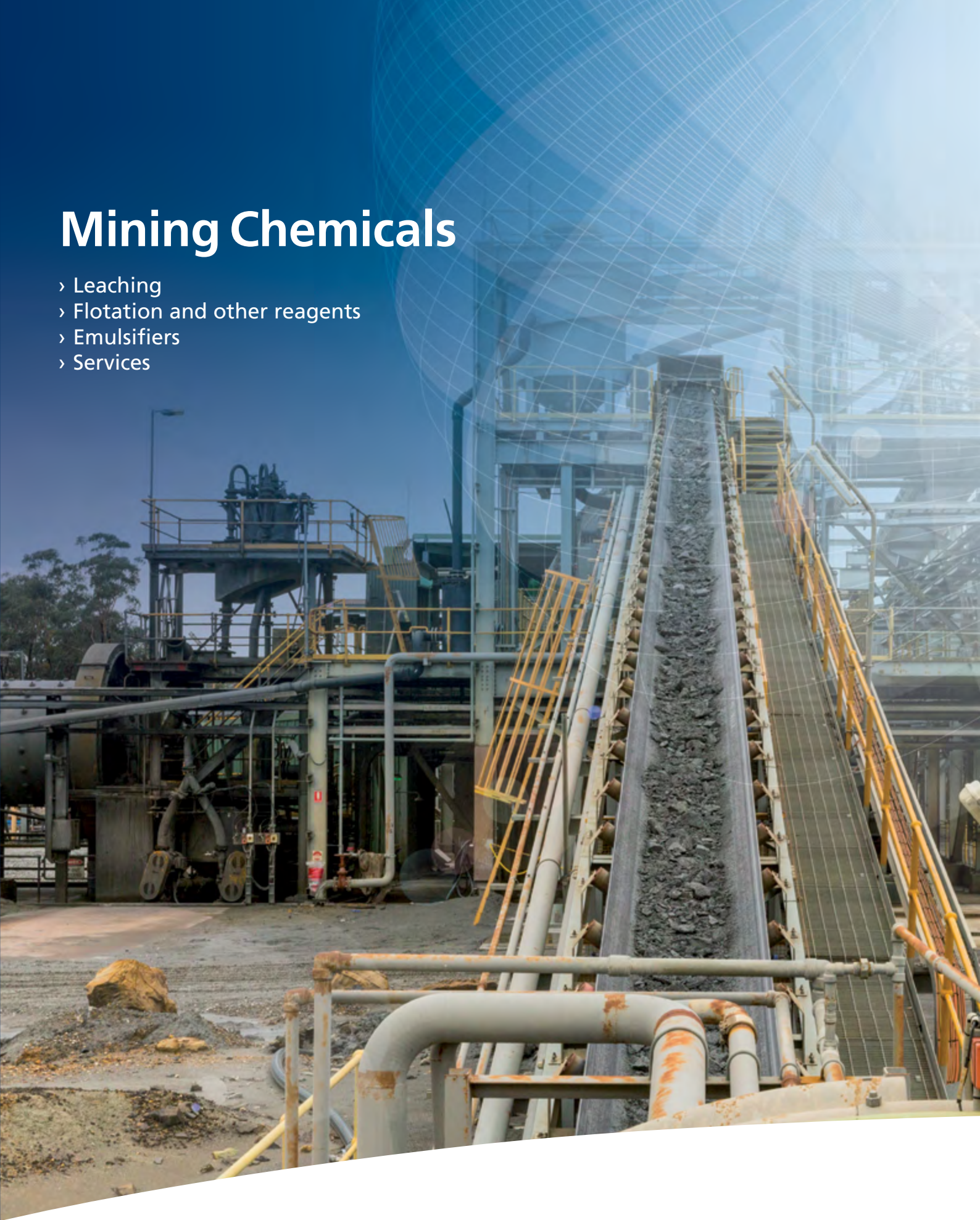


# Mining Chemicals

- › Leaching
- › Flotation and other reagents
- › Emulsifiers
- › Services



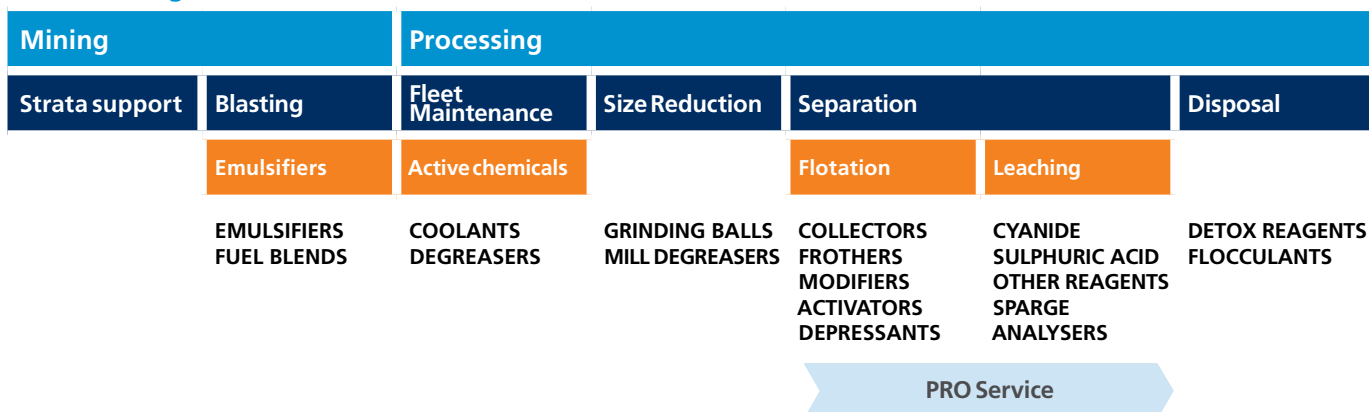
At Orica, we understand that mining is a complex business, with specialised inputs required at every step. We're dedicated to supporting businesses like yours, by offering a broad range of chemicals for the mining and mineral processing industry.

## Orica supports the mining industry throughout the value chain

### Mining process



### Orica's mining chemicals offer



Our mining chemicals offer integrates more broadly with Orica's full range of Blasting Services, Bulk and Packaged Explosives, Electronic Blasting Systems, Initiating Systems and Ground Support Systems.



# Orica's mining chemicals will keep you operating, safely and efficiently.

Our proven and responsive global supply chain ensures the safe and secure supply of cyanide and mineral processing chemicals, while our technical specialists support their safe handling and effective use at the mine site.

## KEEP YOU OPERATING

Orica offers a broad range of chemicals right across the processing value chain, so you can be assured of consistent, seamless supply.

Our proven and responsive supply chain is end-to-end, from manufacturing right through to on-site monitoring and training. And to provide added security of supply, we work with you to ensure that contingency plans are in place.

We understand you need a secure supply of key raw materials to ensure your continuous operation.



Orica's world-scale cyanide manufacturing facility is located in Yarwun, Australia.

## SAFELY

Our dedication to safe handling and use helps you protect people, the environment and your business reputation.

Orica's proven delivery systems for cyanide and other chemicals include the use of accredited third party contractors. Orica also provides a 24/7 Emergency Response capability with technical advice and awareness programs for your staff in the safe use and handling of cyanide on your site.

We know you need high safety standards, environmental compliance and strong community relationships.



Orica is committed to safety, both on our site and yours.

## AND EFFICIENTLY

Orica's technical expertise can help you increase recovery and reduce total costs.

With metallurgists located in Latin America, Africa and Australia, and site-customised technical support drawing on our in-house engineering, design, blending and testing capability, we support you to achieve the most from your processing.

Our PRO Service offer helps you access site-customised solutions, such as online analysers and product trials, targeted at reducing consumption and improving recovery.

All so you get the most out of your operations.



Orica has in-house engineering, design, blending and testing capability.

# PRO Service

## Tackling *your* site challenges

To achieve increased recovery and reduce total costs for both flotation and leaching, talk to us about Orica's PRO Service.

At Orica, we understand that while quality raw materials are crucial, there's more to it than chemicals alone.

With the PRO Service package, Orica provides a proactive and systematic technical support service, supporting your team to ensure that you get the most out of our products, at your site.

Our methodical PRO Service project framework ensures that we understand your site challenges and objectives, so that we can then apply our mineral processing expertise and experience to deliver real process and economic improvements.

### THE PRO SERVICE FRAMEWORK



### PRO SERVICE SOLUTIONS ARE TAILORED FOR YOUR SITE

Recommendations might include:

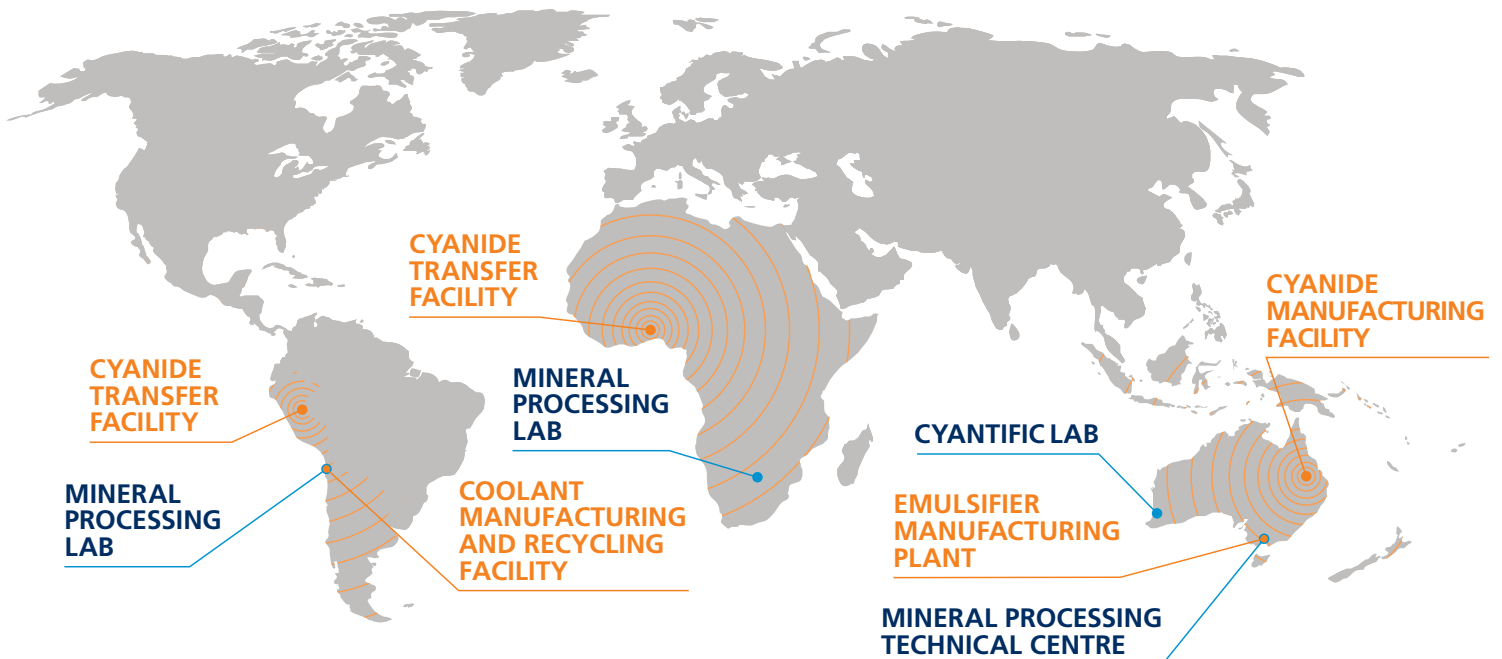
#### FLOTATION

- › Ore monitoring service
- › Matching ores with reagents

#### CYANIDE

- › Cyantific analyser installation
- › Dosing optimisation
- › Staged addition optimisation
- › Detox optimisation
- › Process modelling and benchmarking
- › Sparge design and installation

## Proven supply performance



## Cyanide

As one of the largest global producers of sodium cyanide, Orica produces both liquid and solid sodium cyanide for use in the mining industry.

### There are two core delivery methods:

- › Box – wooden intermediate bulk containers (IBC's) for easy transportation
- › Sparge – Orica-designed delivery system.

### SPARGE

Orica's proven sparging systems ensure the safe and secure delivery of cyanide to your site, reducing risk associated with transportation, safety and the environment. Available as bulk sparging and the smaller mini-sparging system, our standardised systems can be customised to meet your site's requirements.

Orica has unparalleled experience and expertise in the design and project management of Sparge systems, with more than 43 systems installed globally.

## Flotation

Orica offers a broad range of flotation, leaching and detoxification chemicals, including:

### COLLECTORS

Xanthates, Dithiophosphates, Thionocarbamates, DSP Specialty Range, Specialty Oxide Reagents.

### FROTHERS

MIBC, DSF Specialty Range.

### MODIFIERS

Lime, Soda Ash, Caustic Soda.

### ACTIVATORS

Copper Sulphate, Sodium Hydrosulphide, Sodium Sulphide.

### DEPRESSANTS

SMBS, Sodium Hydrosulphide, Sodium Sulphide, CMC, Dextrin, Guar Gum.

Orica aligns with leading manufacturers, to ensure high quality product and continuous supply, and our local blending capability in Latin America and Australia means that whether you require collectors, frothers, modifiers, activators or depressants, Orica has the capability to supply it.

## Active Chemicals

Active Chemicals has a range of maintenance products designed to keep your fleet operational in a safe and efficient manner.

The Active range is applied in a wide variety of applications from heavy automotive to grinding mill degreasing. Extensive technical experience and field trialling ensures optimal performance of our quality products.

## Emulsifiers

Orica is a global leader in the provision of emulsifiers and fuel blends to explosives manufacturers. From our manufacturing base in Deer Park, Australia, we reliably supply more than 100 sites, across 32 countries, through our global supply chain.

## Size Reduction

To aid in the blasting, grinding and classification process, Orica provides specialised products:

- › Cast Chrome & Forged Steel Grinding Balls
- › Additives (Acetic Acid) and Initiators (Sodium Nitrate, Sodium Perchlorate & Thiourea).

Orica's proven and responsive global supply chain ensures the safe and secure supply of chemicals to your site, wherever you are.

### Dedicated manufacturing base

Orica-owned manufacturing facilities ensure our continuity of supply. These include our emulsifier and coolant manufacturing plants, mineral processing labs and our cyanide manufacturing plant, located in Yarwun, Australia.

### Contingency planning to ensure continued supply

Our cyanide transfer stations in Africa and Latin America provide safety stock and storage capability, while contingency and inventory planning by site ensures specific solutions.

### Dedicated and reliable delivery systems

We provide services to ensure safe and secure supply, including Sparge or box cyanide delivery, route assessments, GPS Sparge tracking and bulk IBC drums for mineral processing.





## Orica is focused on mining.

Orica is the largest provider of commercial explosives and blasting systems to the mining and infrastructure markets, the global leader in the provision of ground support in mining and tunnelling, and a leading supplier of sodium cyanide for gold extraction.

With a history spanning more than 120 years, since our foundation in 1874, we have built a proud tradition of leadership, innovation, quality and safety.

Orica is a truly global company: 15,000 people, from 130 nationalities; sites in 50 countries; and customers in more than 100 countries.

We have a commitment to sustainability and life cycle management.

Our global reach means we can be responsive to your site needs.

### **That's the Power of Partnership.**

This document is subject to copyright. No part of it should be reproduced without the written consent of Orica Limited. Under no circumstances will Orica Limited, its related companies, or any of their directors, officers or employees be responsible for or accept liability for any loss, expense, cost or damage of any nature resulting from the use of or reliance upon information contained in this brochure.

Orica Australia Pty Ltd (ABN 99 004 117 828) © 2013 Copyright.

## Contact Information

For further assistance please contact your local Orica representative, or call Customer Service on:

Australia: 1300 550 063

New Zealand: 0800 734 607

Other Countries: +61 3 9246 4099

[www.orica.com/miningchemicals](http://www.orica.com/miningchemicals)