



CYANIDE SPARGE

Reduce total cost of operation with
a safer, more secure and efficient
cyanide delivery system.



REDUCING YOUR RISK, INCREASING YOUR EFFICIENCY

Sparge is a safe, secure and efficient solution for many of the logistical and operational challenges associated with the delivery and use of sodium cyanide.

Orica is a global leader in the manufacture and distribution of cyanide to the mining industry. We understand that for mine sites today, there are many challenges associated with cyanide delivery and usage. These range from security and transportation to safety and the environment. We are dedicated to supporting businesses like yours.

Our responsive global supply chain is proven throughout the world, while our training and technical specialists support cyanide safe handling and effective use at your mine site. We're there to keep your site operating profitably. The Orica Sparge delivery system is at the core of our commitment to the safe and secure supply and use of cyanide.

ORICA'S PROVEN SPARGE PROCESS

Orica offers end-to-end management of the whole process, from manufacture and transportation to delivery and dissolution, ensuring the safe, secure and timely supply of cyanide to your site.

MANUFACTURE



Orica cyanide manufacturing facility and international transfer stations allow for continuity of supply.

At Orica, we have a dedicated manufacturing base in Yarwun, Queensland and transfer stations in Africa and South America, which allow for continuity of supply to your mine site. From these locations, up to 22 tons of cyanide briquettes can be loaded into Orica's Sparge isotainers.

TRANSPORT



Purpose-built Sparge isotainers lower loss of containment risk en route.

Designed in accordance with American Society of Mechanical Engineers (ASME) and International Cyanide Management Institute (ICMI) guidelines, the integrity of Orica's purpose-built Sparge isotainers lowers risk en route.

GPS tracking ensures we know precisely where your container is. In fact, we've had no loss of containment en route since we began delivering cyanide in this way. To maximise security, a thorough risk assessment of the route is conducted prior to the first delivery to your site.

DELIVERY



No manual handling or packaging required.

Upon arrival, the Sparge isotainer is connected to on-site sparging tanks, which are pre-filled with water.

The system is closed and automated, minimising exposure risk to cyanide and greatly reducing manual handling.

DISSOLUTION

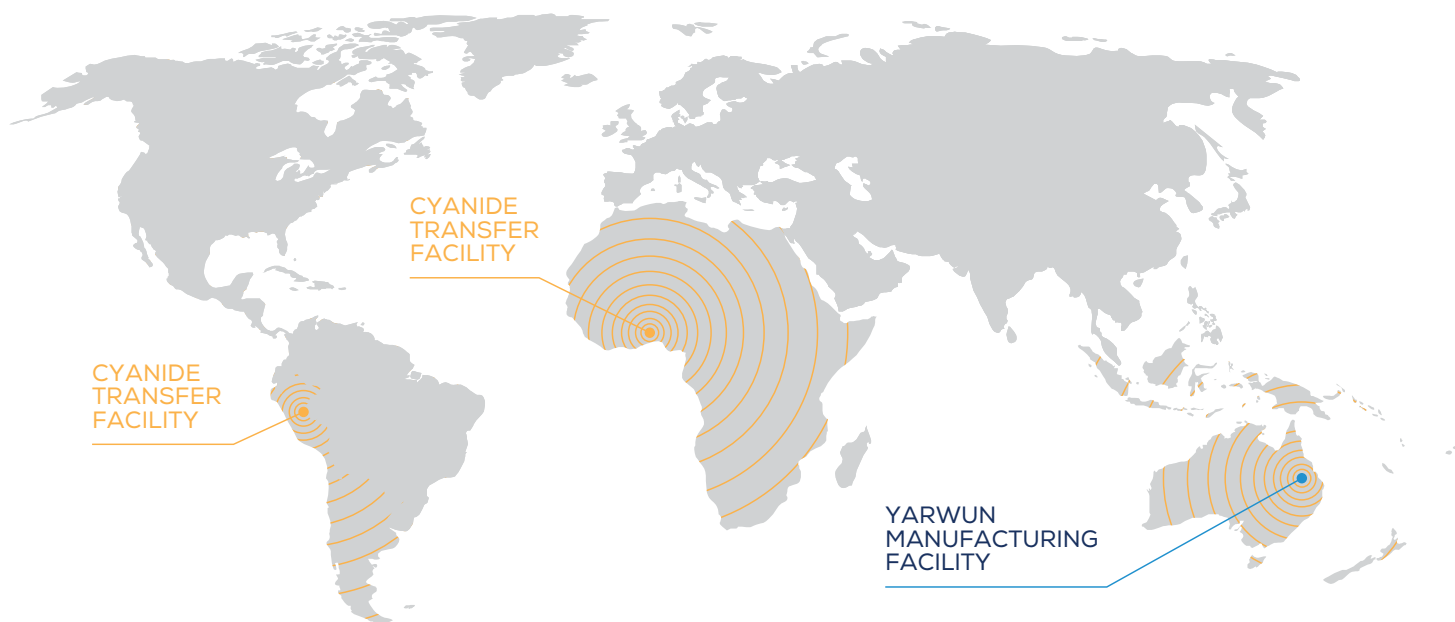


Closed and automated dissolution process, minimising exposure risk to cyanide.

Once connected, the dissolution process is started from a control hut, situated a safe distance from the process. Water is continuously circulated between the dissolving tank and the Sparge isotainer until the cyanide briquettes dissolve.

The liquid cyanide solution is transferred completely from the Sparge isotainer to the dissolving tank, which is then transferred to the storage tank ready for use. Once disconnected, the Sparge isotainer will depart the site, leaving you with the product you need and no packaging to dispose of.

ORICA'S SPARGE NETWORK



WHY CONVERT TO ORICA SPARGE?

Safety, Security, Efficiency

Reduces risk to your cyanide delivery

- Safer transportation to the mine site with minimal loss of containment risks
- Improved security including GPS tracking

Improves safety and security on site

- Closed process minimises the risk of a loss of containment
- Automated process reduces exposure risk for workers
- With no boxes your site is more secure
- Improved ergonomics with ground level discharge

Improves operational efficiencies

- Reduced manning – quicker dissolution process, option for Orca to manage the process
- No waste packaging for disposal at mine site

Orca expertise and support

- Standardised system, with ability to customise, to meet site specific requirements
- Unparalleled experience and expertise in the design and project management of Sparge installations, with six liquor facilities and over 43 Sparge operations globally
- Country and regional knowledge of local conditions provides a depth of capability
- In-depth cyanide awareness programs provided to your people
- Annual site inspections and preventative maintenance program
- Maintenance and trouble-shooting – local spares in Africa and South America
- Local technical support, backed by remote access, to deliver faster solutions
- Highest quality standards, designed in accordance with ASME standards and independent certification by QA/QC.

SPARGE SYSTEMS TO SUIT YOUR NEEDS

With end-to-end management of the process, Orca can manage the entire installation process for you. Standard modules are prefabricated, delivered and installed on site. This is a quick and efficient process that minimises site interruption, saving you time.



Bulk Sparging

Designed for large-scale sites, bulk sparging comprises of a dissolving tank, a 100 kilolitre storage tank and a sodium cyanide Sparge isotainer(s).



Minisparge™

Developed for smaller operations, Minisparge™ consists of a small on-site dissolving tank and a sodium cyanide Sparge isotainer, allowing up to 22t of sodium cyanide to be dissolved on site as required.

Liquid Sparging

Offered to customers located near our Yarwun facility in Queensland.

Tailored to your needs

Our standard designs can be customised to meet your unique operations needs whilst ensuring a cost-effective solution.

- Multi-solution – Minisparge™, Bulk Sparge, Liquor
- Dilution – Final NaCN concentration can be tailored to suit your site's requirement
- Sampling – Installation of an analyser, removing the need for manual sampling and analysis
- Multiple Storage – Range of standard size storage tanks.

WHY ORICA?

We are a truly global company, with 15,000 people serving mining customers in more than 100 countries and as ICI, we were the first company to manufacture and distribute sodium cyanide.

Our global supply chain ensures the safe, secure and efficient supply of cyanide to your site, wherever you are. Orica has had no loss of containment en route since the inception of Sparge technology.

Orica has implemented over 43 customer Sparge systems globally. Our engineering team has unparalleled experience in the design and project management of Sparge systems.

We understand and support business like yours.

HOW CAN WE MAKE YOUR CYANIDE DELIVERY MORE SAFE, SECURE AND EFFICIENT?

To find out how Orica can assist you in the safe, secure and efficient delivery and use of cyanide, just talk to us. Our experts will listen to your challenges and develop an approach, which fits your needs and your budget. For more information, or to book an assessment of your site's requirements go to:

www.orica.com/sparge

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