



# SODIUM CYANIDE

## INFORMATION SHEET

Cyanide has been used in the extraction of gold from ore for over a century and is still considered the most efficient extraction method. Orica Mining Chemicals produce solid and liquid sodium cyanide, at a purpose built plant located at Yarwun in Queensland, Australia.

The Yarwun plant is located near the major industrial seaport of Gladstone, which is situated within the major shipping routes along Australia's East Coast, ensuring competitive freight costs and prompt delivery to global customers.



Figure 1. Cyanide Briquettes

### SOLID SODIUM CYANIDE

Orica Mining Chemicals produces solid sodium cyanide in the form of briquettes (or "cyanoids"). Each white crystalline briquette solid is approximately 46.5mm long, 36.5mm wide and 20.3mm thick. The small pillow-shaped briquette is easily handled, generates little dust, is less sensitive to air and is highly soluble (see Figure 1).

There are a number of alternatives for delivery of solid sodium cyanide, including wooden intermediate bulk containers (IBC's) and the popular Orica-designed sparging system, which incorporates both bulk sparging and the smaller mini-sparging system (see Figure 2). Both sparge processes utilise specifically designed sparge containers and onsite mixing systems to ensure a high level of safety for our customers. Sparging significantly reduces mine site costs and removes the potential manual handling risks associated with sodium cyanide. Orica is the world's leading supplier of sparged sodium cyanide.

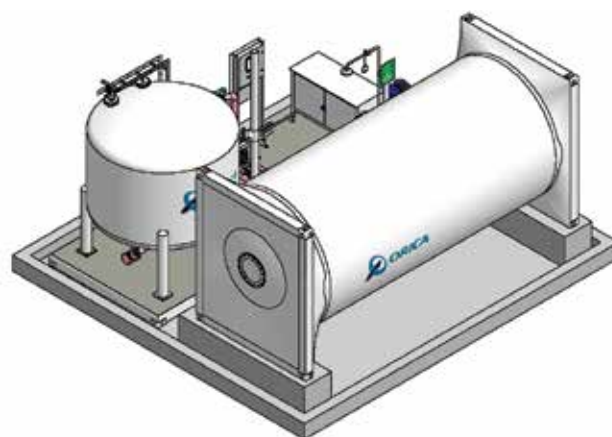


Figure 2. Mini-sparging system

### LIQUID SODIUM CYANIDE

A sodium cyanide solution is also produced and distributed by Orica Mining Chemicals. The supply of liquid cyanide is generally limited to plants situated close to the Yarwun facility, due to transportation considerations. This solution is dyed with red carmosine dye for ease of identification for safety purposes.

Liquid sodium cyanide is distributed as a nominal 30% solution in isotanks containing 18m<sup>3</sup> of liquid. The purpose-built isotanks help to ensure safe and efficient transportation and discharge of solution. Tanks are suitable for road and rail transport and have been accredited to IMO2 Standards and in accordance with the IMDG Code.

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## PROVEN PERFORMANCE

Orica is the world's largest supplier of commercial explosives and reagents to the mining industry, with a worldwide network of operations through Australia, Asia-Pacific, Europe, Canada, USA, Latin America, Africa and China. For more than a century, Orica has been at the forefront of product development and technical innovation and is committed to global best practice. This technical expertise and experience is used to develop solutions for the unique challenges faced by individual mines.

## TECHNICAL SUPPORT

To ensure Orica Mining Chemicals remain a global industry leader, we are committed to innovation, product differentiation and providing superior service quality. To achieve this, we focus heavily on our technical capabilities and research and development programs. Orica have a strong representation in the fields of chemistry, chemical engineering, metallurgy, civil, mechanical engineering and safety, health and environment, any of which can be drawn on to support our customers needs.

Orica Mining Chemicals is proud of the strength of our technical capabilities and the ability to deliver sustainable value improvements to mining companies. This is particularly the case with the gold mining industry, where the application of our latest innovative technologies, and access to metallurgists for process improvement, assist in unlocking value well beyond simple product supply.

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### Orica's technical edge helps assists customers in:

- Realising all the benefits of Orica's chemical supply
- Collating and analysing data to prove cost benefits
- Facilitating development of a total cost reduction program through chemical reagent efficiency
- Identifying and developing a program of continuous improvement projects in treatment cost reduction

## SAFETY, HEALTH AND ENVIRONMENT

Orica operates to the highest standard of safety, health and environment. This is guided by the vision 'No Accidents Today'. Orica is dedicated to maintaining a safe and healthy work environment for its employees and customers.

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Orica Mining Chemicals production facility is certified as compliant with the International Cyanide Management Code (ICMC). Our aim is to co-operate with our customers in their efforts to become signatories and ultimately ICMC compliant. We can provide details on how we can best assist with ICMC implementation.

The packaging and delivery methods used by Orica Mining Chemicals ensure that the highest level of product quality and safety is maintained during shipping. All packaging and transport methods comply with the ADG (Australian Dangerous Goods) Code and the IMDG (International Maritime Dangerous Goods) Code. All transport contractors used by Orica Mining Chemicals are required to be accredited to PACIA and are audited annually to ensure compliance with all appropriate procedures.

## SAFETY TRAINING

The safe handling and use of sodium cyanide is of paramount importance. Orica Mining Chemicals provides specialised and flexible cyanide safety training to customers, and supporting materials such as booklets, pocket guides, safety wall charts and electronic presentations. This Orica service ensures that customers get the best and most up to date sodium cyanide safety training available.

## FURTHER INFORMATION

Please contact your local Orica representative, or call Customer Service on:

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