



QUALITY ASSURANCE

Strategic Significance

The Olaroz Lithium Facility currently produces purified and primary grades of lithium carbonate, which are sold into battery, technical and chemical markets. These products vary in both physical and chemical composition: micronised lithium for batteries and compacted lithium for the ceramic and glass industries.

Detailed chemical specifications for these products are defined by each client based on their specific needs. Quality assurance is about ensuring the Company systematically achieves the required purity in the final product, and the specific parts per million (PPM) limit for each additional chemical in the product, as defined by the customer. This PPM breakdown is commonly referred to as the 'impurity profile'. Additional considerations include moisture content, magnetic particles, loss on ignition values, particle size and particle size distribution.

By focusing on the sustained delivery of high-quality product, the Company aims to attain premium pricing, enhance customer relationships and secure long-term contracts. As customer specifications change and evolve, Orocobre must continually and effectively tailor its products to meet customer requirements. For this reason, it is a strategic priority for the Company to constantly adapt and assure the quality of its production processes.

Impact Boundary

Orocobre's quality assurance processes are focused on the application of policies and procedures in adherence with the quality standard, to ensure high quality production and bagging of the Company's lithium chemicals at the Olaroz Lithium Facility.

All lithium carbonate produced at the Olaroz Lithium Facility, both primary and purified grade, is covered by the Company's quality assurance process.

Orocobre's joint venture partner, Toyota Tsusho Corporation (TTC), is responsible for the sales and distribution of the lithium product to market, so quality issues arising in product delivery are managed by TTC.

Management Approach

Commitment

As part of Orocobre's commitment to advancing the Sustainable Development Goals – in particular [Goal 7: Affordable and Clean Energy](#) and [Goal 12: Responsible Consumption and Production](#) – the Company seeks to meet the world's growing demand for clean energy technology, and to deliver quality products that meet clients' requirements whilst ensuring sustainable production practices.

Management Systems

Operations have an ISO certified Quality Management System (ISO9001) which sets out Orocobre's approach to managing and maintaining the quality of lithium produced at the Olaroz Lithium Facility.

Opportunities for quality improvements are presented and reviewed regularly as part of the Company's continuous improvement program, which allows all employees and site-based operators to propose opportunities for improved process performance across all aspects of its operations.

Monitoring and Reporting

The Company evaluates the effectiveness of its management approach through regular monitoring and reporting of key quality data and metrics including statistical analysis, production incidents, product out of specification and customer complaints. Internal data and reporting processes include daily operational

updates, weekly operational performance reviews, and monthly reporting on progress against predefined operational targets and objectives.

Responsibility

At an operational level, responsibility for product quality and quality assurance processes sits with the Quality Manager who reports directly to the Operations Manager.

At a Group level, responsibility for product quality and quality assurance sits with the Chief Operating Officer.

Orocobre's Global Key Account Manager ensures effective communication and liaison between Orocobre and TTC in the management of quality assurance from production through to customer delivery.

Accountability

Internal targets are clearly defined for quality performance, with KPIs integrated into the performance evaluation process for specific managers and employees at an operational level.

Orocobre's Executive and Board performance process also incorporates quality-related performance targets into their short term and long-term incentive criteria.

FY19 Update

Throughout FY19 the operating company of the Olaroz Lithium Facility, Sales de Jujuy (SDJ), focused on improving operational process controls to enhance product quality. In addition, feedback was sourced from customers across the European Union (EU) and Asia so that plant operators could improve responsiveness to customer's specification requirements.

One specific quality improvement project was the enhancement of the product packaging process to address customer feedback regarding product quality on delivery.

By focusing on the sustained delivery of high-quality product, the Company aims to enhance customer relationships and secure long-term contracts.

Quality remains a key strategic focus area, along with productivity and safety. Planned FY20 improvement initiatives include:

- Continue reducing product impurity levels to meet or exceed customer expectations
- Reduce variability and improve market perception of product quality
- Implement further product packaging improvements

INDICATOR	CURRENT	PRELIMINARY TARGETS (to be finalised in FY20)		
	FY19	FY20	FY25	FY30
Number of claims / 1000 dispatches	39.3	15	8	2
Claim resolution time (days)	New, it will start to be measured in 2020	30	15	7
Claims Index (%) (Claimed Product / Total Product Dispatched)	0.87%	< 0.6%	< 0.4%	< 0.2%
Process capability: % of Analytes with $C_{pk} > 1$	80%	95%	95% with $C_{pk} > 1,15$	95% with $C_{pk} > 1,3$

For more information on Quality performance, refer to [Value Chain Performance Data](#).