

CHEMICALS

The Chemical Division makes value-added products from natural brines and salts extracted from the subsoil by hydraulic mining at Química del Rey plant, located in Laguna del Rey, municipality of Ocampo, Coahuila.

The main product of this business is sodium sulfate, which accounts for more than half of its revenues. This material, in which we lead the domestic market with a 79% share, is used in producing powdered detergents, glass and paper, and in the textile industry. Today, Química del Rey is the largest sodium sulfate producer outside China with an installed capacity of 780,000 metric tons a year.

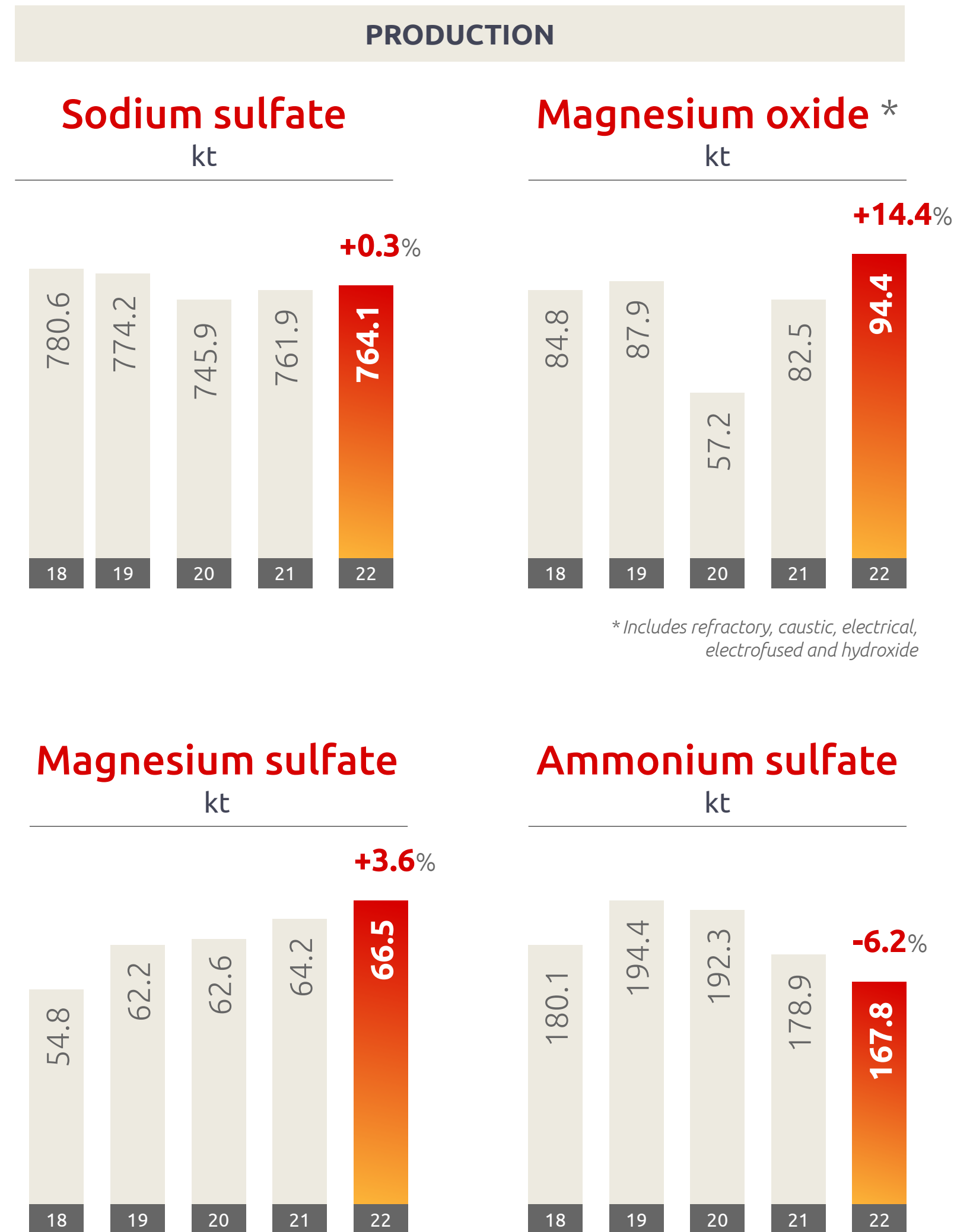
The second most important product, magnesium oxide, is made from residual brine resulting from sodium sulfate operations and dolomite ore from the La Esmeralda mine in Coahuila. It is produced in various

grades: refractory, used in making the bricks that line high-temperature kilns in the steel and cement industries; caustic, used to make animal feed and fertilizers; hydroxide, used as a flame retardant; and electrical, useful as an insulating material and to make electrical resistors. This product accounts for between a third and a quarter of the Chemical Division's revenues.

The third product, magnesium sulfate, also known as Epsom salt, is used as a fertilizer, in the leather tanning industry, in processing chemical products and making detergents.

In addition, residual sulfuric acid from the lead smelter is used to produce ammonium sulfate, a fertilizer by-product, at the Fertirey plant adjacent to the metallurgical complex in Torreón.

Química del Rey received the Safe and Healthy Work Environment distinction from the Mexican Social Security Institute, for meeting the requirements of its occupational health and safety program.



We maintained certification of our Business Management System according to ISO 9001:2015 and ISO 14001:2015 standards.

PRODUCTION AND PERFORMANCE

Our main chemical products performed well in 2022.

Sodium sulfate, with annual volumes 764,089 and 762,378 metric tons of production and sales, respectively, saw variations of +0.3% and -4.9%, respectively, from the previous year. Domestic market demand remained strong, primarily in the detergent industry. However, we faced logistical challenges during some months due to the low availability of hoppers in the railway system for distributing our product. We were able to handle the situation by better distributing loads and inventories so as not to affect our clients.

Gross margin for sodium sulfate improved compared to the previous year, due to a higher average price per metric ton, which absorbed the increase in production costs caused by the higher cost of natural gas, electricity and operating materials. Efficiency measures remained in place to optimize consumption rates of the dryers at plant 1, improving the rate of steam and electrical energy per metric ton of product.

This year, we introduced a new flow model for La Laguna to improve the estimation of resources under current conditions and various production scenarios, in an effort to optimize brine extraction and the sustainability of the deposit. We also deployed a technological tool for managing data to incorporate and manage information efficiently, and support decision-making in the deposit exploitation process.

We obtained recertification of our Responsibility System from the National Chemical Industry Association (ANIQ).

Demand for magnesium oxide was also solid in the first half of the year but weakened in the second half as the global economy slowed down. Exports of some varieties of our product toward certain regions of Europe ran into difficulties due to the geopolitical conflict in Ukraine and a scarcity of containers, but we were able to place higher volumes in China and the United States. We began a strategy to keep operating continuity in the magnesium oxide plant and specialty products plant, and for increasing production through actions such as operating furnaces and reactors at full capacity, carrying out preventive maintenance, and managing assets to extend the term before the annual shutdown. Furthermore, we installed an advanced process control system in rotating furnace number 2, which had the benefit of reducing the natural gas consumption rate.

Magnesium hydroxide stands out, with new production and sales records in 2022 and an increase in our share in the Asian market, while we strengthened our presence in Europe and the United States. The acceptance of our product is growing for its applications as a flame retardant in plastics because it not only offers higher temperature resistance, but is halogen-free, making it environmentally friendly.

To counter the high cost of natural gas and higher marine tariffs, we introduced a quarterly update formula for our magnesium oxide sales prices which, combined with the efficiency measures introduced, improved both the net price and margin of our magnesium by-product mix over the previous year.

Magnesium sulfate, primarily sold in the domestic agricultural industry, had a good year. Due to supply shortage, we were able to increase exports and diversify our client portfolio, besides registering our product



Magnesium sulfate and magnesium hydroxide reached new production records.

with the Organic Materials Review Institute (OMRI) which endorses its use in organic crops in the United States. With the operating efficiency measures we introduced in the crystallization, dams and drying areas, we operated at peak capacity during the months of solar evaporation, producing less by the reaction method and lowering our consumption of sulfuric acid. Combined with better sales prices, these measures broadened the margin for magnesium sulfate compared to the previous year. Production and sales volume reached consecutive records of 66,497 and 66,110 metric tons, respectively.

In ammonium sulfate, on the other hand, production and sales volumes were lower due to a reduced availability of sulfuric acid needed to make this product, in addition to continuing high ammonia prices in 2022.

As regards our High-Potential Management system, we continued to strengthen critical controls for the risks identified. We practiced visible onsite leadership from the technical advisor level up to the lead team, through safety inspection visits to all plants. We also issued regular reports with a preventive approach. Four of our high-performance teams achieved outstanding records of 21, 18, 17 and 13 accident-free years. Specific metrics show a TRIFR—aligned this year with ICMC criteria—of 5.49, and an LTIFR that moved down, from 5.8 in 2021 to 5.5 in 2022.

Investments totaled US\$ 9.1 million in the Chemicals Division, primarily in sustaining and replacing critical equipment to ensure business continuity. We invested in furnace efficiency, preparation of La Esmeralda dolomite mine, installing a filtration system to eliminate gypsum in the magnesium oxide plant, technological improvement at the sodium sulfate plant 1, and a sacking system for magnesium specialties.