ROK Market Brief No.14

Zinc Ores Market

Opportunities under the Korea-Central America Free Trade Agreement

The Korea-Central America FTA (K-CA FTA) brings significant benefits for CA exporters. Under the agreement, the Republic of Korea and the Central American countries will immediately or gradually reduce tariff on more than 95 percent of traded products. Such benefit will help CA exporters compete with exporters from other countries which have trade deals with Korea.

This guide provides an overview of the zinc ores category that benefit from tariff reductions under the K-CA FTA and have market access.

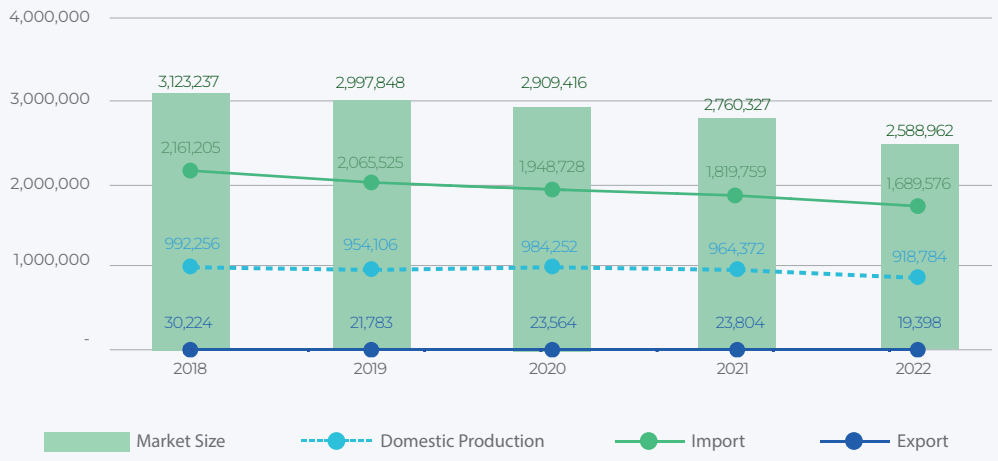
Market Snapshot

The ROK zinc ores market volume in 2022 shows a drop since 2018, indicating an average annual growth of -4.57%. Market value, however, shows an increase at an annual growth rate of 6.36%. This increase is attributed to the increased global commodity price which reached its peak in 2022.

In ROK zinc ores market, import proportion is significant, accounting for 65% in volumes and 102% in values in 2022. Domestic production contributes a meaningful proportion of 35.49% in volume[1] . On the other hand, the exports represent only 1 to 2% in both volume and value.

Figure 1. ROK zinc ores market trend in volume (2018-2022)

(Unit: Ton)

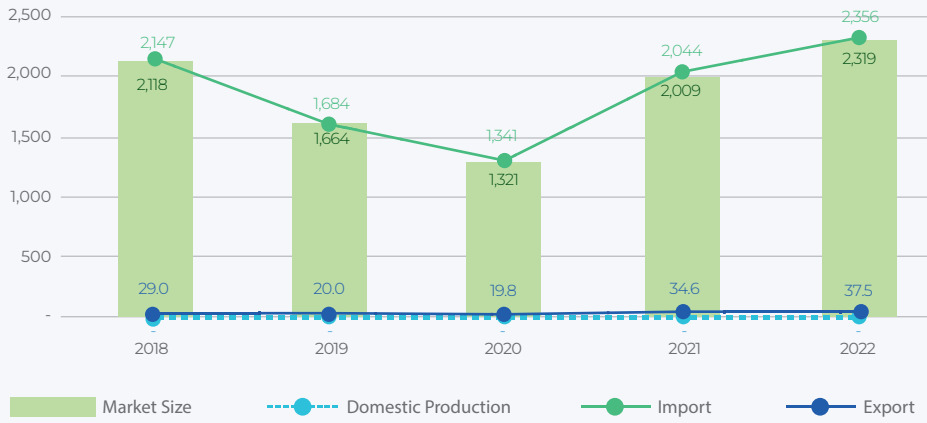


Source) Korea Customs Service Import and Export Statistics (2023); Korea Institute of Geoscience and Mineral Resources (KIGAM)
Note) Market Size = (Domestic production+Import) – Export

[1] There is no corresponding value data provided for domestic production.

Figure 2. ROK zinc ores market trend in value (2018-2022)

(Unit: million USD)



Source) Korea Customs Service Import and Export Statistics (2023); Korea Institute of Geoscience and Mineral Resources (KIGAM)
Note) Market Size = (Domestic production+Import) – Export

Considering the witnessed trend and global supply, for the next 5 years from 2022 to 2027, the market value and volume are expected to continue to increase despite the scarcity of the metal and the rise of global price. As for the market size in volume, the annual growth rate is estimated to be -4% with meaningful portion of domestic production and significant volume of import maintained. In case of the market size in value, it is estimated to show an annual growth rate of 6% maintaining the similar rates shown in the past 5 years.

In this regard, it is important that exporters of zinc ores take advantage of the base rate tariff of 0% for imported zinc ores (HS Code 260800). Detailed tariffs are described in the table below:

Table 1. Tariff on HS Code 260800 as of 2024

Country	HS Code	WTO bound rate	Current rate (2024)	Elimination of custom duties[2]
Costa Rica	260800.0000	1%	0%	2019.11.01
El Salvador	260800.0000	1%	0%	2020.01.01
Panama	260800.0000	1%	0%	2021.03.01
Honduras	260800.0000	1%	0%	2019.10.01
Nicaragua	260800.0000	1%	0%	2019.10.01
Guatemala	260800.0000	1%	0%	-
Australia	260800.0000	1%	0%	2014.12.12
Mexico	260800.0000	1%	0%	-

Source) Customs Law Information Portal. (2024); FTA powerhouse, KOREA. (2024); FTA agreement and basic documents

[2] Effective date of the FTA: Nicaragua and Honduras(Oct. 2019), Costa Rica(Nov. 2019), El Salvador (Jan. 2020), Panama (Mar. 2021), For Guatemala, it is assumed in the report that the FTA will come into effect within the year 2024.

Competitive Landscape

The major suppliers of zinc ores to the ROK market are Australia. Mexico, and USA which accounted for 59% of total zinc ores imports in 2022. The detailed import statistics in volume from 2018 to 2022 is presented in the table below.

Table 2. Import volume of Zinc ores per country (2018-2022)

(Unit: Ton)

	2018	2019	2020	2021	2022
Australia	730,080	540,502	614,215	605,372	478,134
Mexico	196,475	263,724	319,974	229,823	257,595
USA	178,337	151,561	142,640	164,582	255,875
Bolivia	251,471	237,614	168,335	121,552	245,998
Peru	498,090	453,265	423,809	375,409	220,568
Eritrea	51,081	132,857	72,293	91,844	56,953
Canada	3,812	17,834	23,747	45,621	54,686
India	-	-	-	-	22,530
Honduras	-	10,111	-	-	19,498
Others	251,859	258,057	183,715	185,556	77,739
Total	2,161,205	2,065,525	1,948,728	1,819,759	1,689,576

Source) Customs and Excise Department import and export statistics (2023)
Note) Value – means there is no import volume at all. Value 0 means there was import but with a very insignificant and small number which is close to zero.

Korea Zinc, in conjunction with Young Poong Group, holds a 94% of market share in Korea as of the fourth quarter of 2022. Korea Zinc mentioned that their primary suppliers for key raw materials were Minera Peñasquito in Mexico. Moreover, Korea Zinc has an Australian subsidiary named Sun Metals. Let alone this ROK's affiliate companies, Australia holds 31% of total world's zinc reserves as of 2022, which can be a huge attribution factor to Korea's import volume.

Consumer Preference

Korea Zinc Company, Ltd. is the major consumer for zinc concentrates in ROK who refines and produces zinc alloy materials from the imported zinc concentrates. For zinc concentrates, the foremost important task for the ROK smelter is diversifying the resource supplier to meet its production capacity.

When it comes to preference regarding zinc, it's crucial to note the revenue factor of the smelter which is treatment charges, free metal, and by-products. First, treatment charge is highly related with the grade of zinc concentrates; hence the smelters would prefer higher quality grade of zinc concentrates. For the free metals and by-products, which is mixed into the concentrates, these are usually another major source of revenue for the smelters since it includes golds and silver. Hence, when smelters choose to the partner mine companies, the grade and by-products of zinc concentrates are the important factor that determines the preference of smelters.

Lastly, although not directly related to the quality of zinc, most of smelters find it important to have a long-term contract with mining companies. Since ROK does not have natural reserves of zinc, supply of zinc concentrates is solely relied on its import. For industries with high zinc import dependencies, signing long-term contracts with suppliers can provide price stability and predictability. This approach can help mitigate the impact of short-term price fluctuations and ensure consistent zinc supply.

Main Distribution Channels

Given South Korea's lack of domestic zinc ores and concentrates production, many local enterprises find themselves dependent on foreign sources maintaining certain levels of import demand. Some of the major ROK importers of zinc ores are listed below.

Table 3. Major ROK importers of zinc ores

No.	Company name	Enterprise scale	Import value (Unit: million USD)	Industry classification	Major importing countries	Address	Tel	Website
1	Posco Steeleon Co., Ltd.	Conglomerate	20 ~ 50	Plating, coloring and other surface treatment steel manufacturing	China, Germany, USA	173, Cheolgangro, Nam-gu, Pohang-si, Gyeongsangbuk-do, Republic of Korea	+82-(0)54-280-6114	www.poscosteeleon.com
2	Dongil Steel Co., Ltd.	Midsize business	20 ~ 50	Cold rolled and extruded products manufacturing	China, Australia	474-40, Anseongmatchum-daero, Miyang-myeon, Anseong-si, Republic of Korea	+82-(0)31-677-1234	www.dongil-steel.com
3	DSR Wire Corp.	Midsize business	20 ~ 50	Steel wire manufacturing	China, Vietnam, Germany	15, Sandan 1-gil, Seo-myeon, Suncheon-si, Jeollanam-do, Republic of Korea	+82-(0)61-729-3500	www.dsr.com
4	Wonil Metal Co., Ltd	SMEs	20 ~ 50	Lead and zinc smelting, refining and alloy manufacturing	India	39, Neungheodae-ro 577beon-gil, Namdong-gu, Incheon, Republic of Korea	+82-(0)32-817-6101	www.wim.kr
5	Incheon Chemical Co., Ltd.	SMEs	10 ~ 20	Other basic inorganic chemical substances manufacturing	Germany, Australia, Japan	98-21, Geonji-ro, Seo-gu, Incheon, Republic of Korea	+82-(0)32-571-0282	http://inchem.co.kr
6	OSP Co., Ltd.	SMEs	10 ~ 20	Other chemicals and chemical products wholesale	Japan, USA, China	67, Saebitgongwon-ro, Gwangmyeong-si, Gyeonggi-do, Republic of Korea	+82-(0)2-6952-0011	www.optc.co.kr
7	Korea Non-Ferrous Metals Co., Ltd.	SMEs	10 ~ 20	Other primary non-ferrous metal manufacturing	Finland, USA, China	681, Neungheodae-ro, Namdong-gu, Incheon, Republic of Korea	+82-(0)32-814-5800	www.krpmc90.com
8	Samhyung Steel Co., Ltd.	SMEs	10 ~ 20	Primary metal product wholesale	China	520 Teheran-ro, Gangnam-gu, Seoul, Republic of Korea	+82-(0)2-569-8853	-
9	Saeju IND. Co., Ltd.	SMEs	10 ~ 20	Aluminum smelting, refining and alloy manufacturing	USA, Israel, Puerto Rico	112-36, Seobu-ro 1499beon-gil, Juchon-myeon, Gimhae-si, Gyeongsangnam-do, Republic of Korea	+82-(0)55-346-3212	-

No.	Company name	Enterprise scale	Import value (Unit: million USD)	Industry classification	Major importing countries	Address	Tel	Website
10	J Thus Chemical Co., Ltd.	SMEs	10 ~ 20	Other chemicals and chemical products wholesale	Netherlands, USA, Spain	230, Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea	+82-(0)31-382-5553	https://www.jthus.co.kr/

Source) KOIMA (www.koima.or.kr)

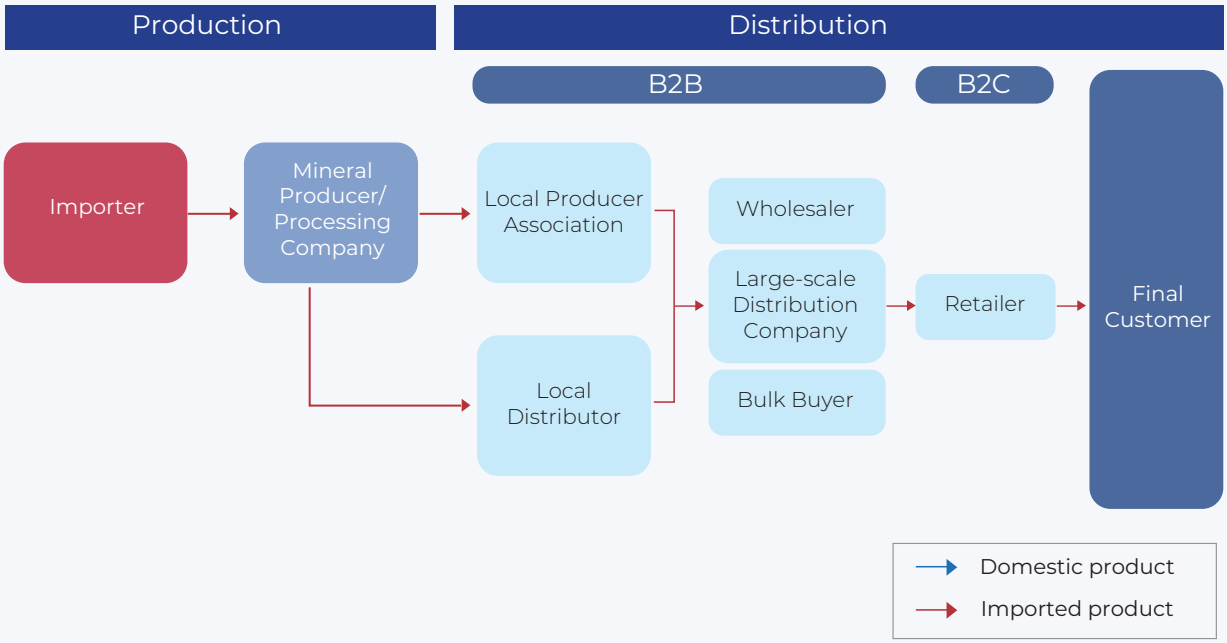
The imported raw zinc ore, whether imported or locally sourced, is sent to mineral producers or processing companies to be crushed or grinded and screened to a specific size to be distributed. But the zinc product can also be distributed and sold in bulk or tonnage after further chemical or physical production processes for industrial purposes.

Some of the domestic players in manufacturing and distribution are Seowon, Young Poong Group, and Hangchang. Seowon mainly specializes in the manufacturing and sale of copper alloys, and it also incorporated zinc as their primary products. Young Poong Group specializes in the mining sector and is at the forefront of the domestic non-ferrous metal industry. It operates the world's third-largest zinc smelting plant, producing 400,000 tons of zinc ingots annually. Young Poong Group is affiliated with, Korea Zinc, the non-ferrous metal smelter.

Lastly, Hangchang specializes in zinc dust and zinc phosphate, and imports zinc materials. The company sources zinc ingots internationally from companies in India and Vietnam, and domestically, from Korea Zinc and Young Poong. Additionally, a portion of the raw materials, particularly recycled zinc ingots, is acquired from small and medium-sized enterprises.

While zinc is largely supplied for industrial uses, the products using zinc after processing and manufacturing stages, such as batteries, paints, rubber, pharmaceuticals, plastics, could reach final customers via retailers or independent stores.

Figure 3. Distribution channel of zinc ores



Source) Ministry of Trade, Industry, and Energy (2016)

Regulations

Import Requirements

Under the laws and regulations of the Republic of Korea, there are no specific import requirements regarding Zinc Ores (260800), thereby allowing importation from all countries worldwide.

Import Process

Zinc Ores and Concentrates can be imported upon the preparation of shipment documents from the exporting country. Based on the shipping documents, after customs clearance process and payment of customs duties, the imported products could be transferred to the importer.

Other Obligations and Cautions

In the case of Zinc Ores, there is no requirement for indicating the origin country, as it is not a designated item for origin labeling. Additionally, there are no peculiarities to note during the import process.

SWOT Analysis

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Strengths

South Korea's robust industrial sector, particularly the steel industry, typically creates a steady and substantial demand for zinc which serves as a vital element in the coating process that prevents corrosion in steel. ROK also supports the streamlined management of the zinc supply chain, ensuring a smooth process from raw material procurement to end-user delivery. Various Korean businesses are integrated into global supply chains, facilitating the procurement of various raw materials.

Most importantly, the ROK-Central America Free Trade Agreement (K-CA FTA) would further enhance the appeal by eliminating the tariff on imported Zinc ores and concentrates, providing a competitive edge for potential CA suppliers, and facilitating their entry into the Korean market. With K-CA FTA, all CA exporters are expected to enjoy the full tariff-free status by 2024.

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Weakness

The production of zinc entails greenhouse gas emissions, posing Environmental, Social, and Governance (ESG) challenges that underscore the importance of adopting sustainable practices in alignment with evolving regulations and market expectations. According to Wood Mackenzie, a global research firm specializing in the natural resources sector, zinc production, from ore extraction to metal refining, releases approximately 40 million tonnes of CO2 annually. Although zinc mining and smelting emissions are comparatively lower than those of other metals, the imperative for a shift toward low-carbon zinc production necessitates proactive measures by producers to decarbonize operations and meet climate targets. Zinc smelting, due to differing energy demands, contributes double the emissions of zinc mining.

Consequently, Korea mainly relies on overseas sources to meet its total zinc demand. However, this dependence introduces other challenges, as geopolitical conditions, natural disasters, regulatory changes, currency exchange rates, and other factors can all impact the Korean zinc ore market. In addition, competition from alternative materials or zinc substitutes can influence the overall demand for zinc ore, presenting an additional factor to monitor.

Opportunities

In 2022, it was reported that the Korea Institute of Science and Technology (KIST) has laid the groundwork for overcoming the limitations of zinc-air batteries or considered using solar energy. Zinc-air batteries generate electricity through a chemical reaction between zinc and oxygen in the atmosphere, which positions them as a potential successor to lithium-ion batteries for electric vehicles.

Furthermore, in the subsequent year, an Australian research team has improved the performance and durability of zinc-air batteries by combining materials such as carbon, iron, and cobalt-based minerals. This allows zinc-air batteries to achieve a higher energy density than lithium-ion batteries. Moreover, the production cost of zinc-air batteries is lower, and they exhibit a longer lifespan compared to lithium-ion batteries. Thus, although still in the early stages of development, zinc-air batteries could innovate electric vehicle batteries, leading to an increased demand for zinc while strengthening the sector.

On the other hand, although Korea participates in zinc production, its contribution is minor. The involvement of mines in Korea's zinc ore production has exhibited fluctuations over the years, as indicated by Korea Institute of Geoscience and Mineral Resources (KIGAM). In 2018, the country had four actively producing mines, but this figure decreased to two in the subsequent year. As of 2022, only three mines were actively engaged in zinc ore production. The heavy reliance on imported zinc ore presents an opportunity for new entrant countries seeking to export their products.

Threats

Amidst intense competition for strategic minerals among manufacturing companies, governments worldwide are increasingly leveraging their resource holdings. This has triggered alarm signals for South Korea's strategic mineral supply chain, which heavily relies on imports.

In February 2023, the Korea Mine Rehabilitation and Mineral Resources Corporation (KOMIR) revealed that the average market outlook indicators for Korea's six key strategic minerals—zinc, nickel, copper, uranium, iron, and coal—stood at 22.7 points[3]. This marks the lowest since July of the previous year (13.6 points), reflecting the aftermath of the Russia-Ukraine war and underscoring the Korean zinc market's vulnerability to geopolitical events. In 2019, the market outlook indicators for the six key strategic minerals reached 61.2 points, but they plummeted to 19.6 points in 2021 due to the global supply chain disruption brought on by the COVID-19 pandemic.

Yong Min Park, head of the Economic Security Task Force (TF) at the Federation of Korean Industries, a major economic organization in Korea, remarked, "There is a noticeable trend recently in major resource-rich countries attempting to control demand within their own borders, such as nationalizing lithium and other minerals." He added, "There is a high probability that the volatility of key mineral prices will increase even further in the future," highlighting the downside for a country like Korea heavily dependent on external sources for minerals. These unpredictable traits would make it difficult and as the threat factor for Central American exporters to establish their entrant strategy to ROK market.

[3] KOMIR calculates these market outlook indicators by scrutinizing the price trends of key minerals over the past two decades, the international raw material settlement in U.S. dollars, and the deviation from long-term averages. Based on this analysis, it predicts future prices and assesses indicators for each mineral to estimate the anticipated volatility. The market outlook indicators are classified into five stages: Risk (0-20 points), Caution (20-40 points), Neutral (40-60 points,) Interest (60-80 points), and Opportunity (80-100 points). A lower numerical value indicates a higher risk due to potential price volatility.

Business Case

ROK Market Insights

- High dependence on imported zinc concentrates for relevant domestic industries
- ROK's zinc smelting company holds strong presence in the global market

Niche

- To partner with importer doing business with ROK leading zinc smelting company

Cultural Adaptation

- Understand Korean's main usage of zinc concentrates
- Understand the presence of the main ROK smelter, Korea Zinc, in the global market
- Understand Korean consumers' quality and price standard for nonferrous metal

Strategy Snapshot

- To promote long-term sustainable export of Central American countries' zinc concentrates to ROK market, it is requisite to reinforce cooperative framework between ROK and resource possessing CA countries in a form of Economic Framework and/or Core Mineral Security Partnership.
- To enhance the visibility and exportability of Central American countries' zinc concentrates to ROK market, it is recommended to use and participate in the various B2B promotional campaigns hosted in ROK on the preferential basis.
- To foster a successful and sustainable export of Central American countries' zinc concentrates to ROK market, it is recommended to partner with dependable ROK importers who has long-term relationship with ROK mineral processing companies and final user companies.

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