Overview of Business Domains

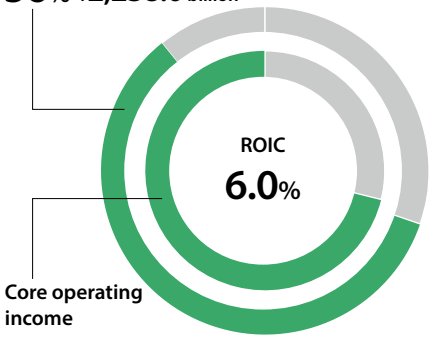
Note: The figures for each segment are based on the results for fiscal 2021.

Industrial Materials Domain

- MMA
- Petrochemicals
- Carbon Products
- Industrial Gases

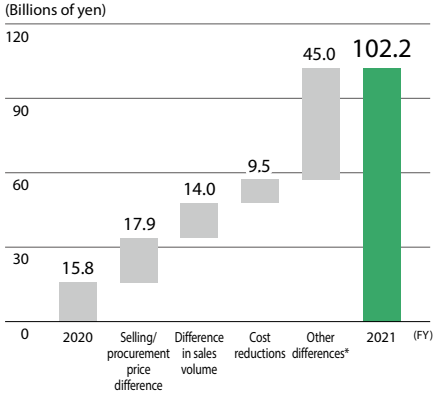
In the Industrial Materials domain, we will support growth markets by delivering products and technologies through a corporate structure that is continuously adapted to meet contemporary needs, while seeking to diversify our raw material procurement including through the use of renewable resources.

Sales revenue
56% **¥2,238.0 billion**

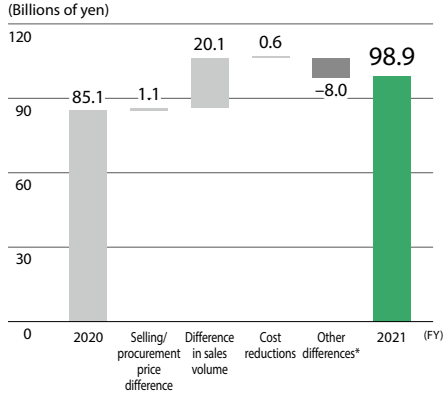


Core operating income
74% **¥201.1 billion**

Chemicals: Factors underlying the YoY change in core operating income



Industrial Gases: Factors underlying the YoY change in core operating income



* Includes differences in inventory valuation and gains/losses on equity-method investments

Chemicals segment

Sales revenue amounted to ¥1,287.9 billion, a year-on-year increase of ¥396.8 billion, and core operating income to ¥102.2 billion, an increase of ¥86.4 billion.

In the MMA subsegment, sales revenue increased on improved market conditions for MMA monomer and other products, against a background of sustained, robust demand.

The Petrochemicals subsegment saw sales revenue expand. This was due partly to higher sales prices resulting mainly from rising raw material prices, but other factors were the reduced impact of scheduled maintenance and repairs at our ethylene production facilities and increased sales volume on recovering demand.

Sales revenue also increased in the Carbon Products subsegment due to higher sales prices for export coke as a result of the recovery in demand.

Core operating income grew in this segment. Among the contributing factors were an increase in the sales volume of petrochemicals, an increase in the inventory valuation due to higher raw material prices, and an improvement in market conditions for MMA monomer, export coke, and other products.

Industrial Gases segment

Sales revenue amounted to ¥950.1 billion, a year-on-year increase of ¥138.3 billion, and core operating income to ¥98.9 billion, an increase of ¥13.8 billion.

Here, the overall recovery of demand in Japan and overseas resulted in increases in both sales revenue and core operating income.

Overview of Business Domains

Industrial Materials Domain

Strengths (S)	Weaknesses (W)
MMA ● Three manufacturing methods and top share of global MMA market **Petrochemicals business** ● Accumulation of advanced technologies across a broad product chain from basic petrochemicals to derivatives **Carbon Products business** ● Exceptional coking coal blending technologies and coke quality management technologies **Industrial Gases business** ● Top share of Japan's industrial gas market and ability to supply to global market	**MMA** ● Fluctuating earnings due to raw material prices and global market conditions **Petrochemicals business** ● Fluctuating earnings due to raw material prices and global market conditions **Carbon Products business** ● Fluctuating earnings due to raw material prices and global market conditions **Industrial Gases business** ● Fluctuating earnings due to electricity costs
Opportunities (O)	**Threats (T)**
MMA ● Business operation network capable of meeting growing global demand **Petrochemicals business** ● Technology license agreements and proprietary catalysts in growing global markets **Carbon Products business** ● Growing demand for coke due to crude steel production expansion in developing countries such as India **Industrial Gases business** ● Growing investment opportunities around the world and rising demand for gas applications in the electronics and medical device industries	**MMA** ● Competition from alternative materials **Petrochemicals business** ● Intensifying competition in domestic market due to unexpectedly high imports of petrochemicals derived from U.S. shale and Chinese coal **Carbon Products business** ● Adoption of low-carbon technology by the steel industry **Industrial Gases business** ● Growing oligopoly of European and American gas majors in global market

Industrial Gases

Expansion of manufacturing capacity for semiconductor material gas in the Asia region

Demand for semiconductor devices is rising continuously due to factors such as lifestyle changes, increased data flows from the spread of 5G and IoT, and increased semiconductor demand from the automotive industry. The diborane gas we produce is essential to the manufacture of a wide range of semiconductor devices, from logic and storage to discrete devices, and demand is growing rapidly.

To meet the expanding diborane gas demand from semiconductor manufacturers, we have been boosting supply capacity since 2018 by successively expanding our manufacturing operations, previously limited to sites in Japan, with new sites in South Korea and China. As continuing demand growth is forecast, especially in the Asia region, we will strengthen the global supply chain through ongoing investment.

Focus

Initiatives as a leading company in the MMA industry to achieve a circular economy

Mitsubishi Chemical Group Corporation—which is unique worldwide in possessing capabilities in all three main MMA manufacturing methods—is the leading global supplier, boasting an approximately 30% share of the world's production capacity. To put in place an optimal supply system with global reach based on highly competitive manufacturing plants, we closed the Beaumont site in the United States in March 2021 and are now looking to construct a new U.S.-based MMA monomer plant using our new ethylene method (Alpha technology). We are also studying approaches to the recycling of acrylic resin, which is an MMA derivative. In June 2021, we launched a trial aimed at realizing chemical recycling in Japan on a commercial basis. Using tail lamps collected from end-of-life vehicles (ELVs) and other used acrylic resin materials, we have been exploring systems for chemical recycling and reuse in a joint project with Honda Motor Co., Ltd., which is also our partner in the recycling system trial. As the manufacturer with the world's leading market share in MMA and acrylic resin, we will take an active lead in initiatives to realizing the circular economy, to consolidate our position as the leading company in the sector.