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Automotive Products

Basic Policies of the 2018 Medium-term Management Plan
Strengthen base to become a global top supplier

Strengths

- Ability to offer proposals by taking advantage of the compounding technologies of materials
- A rich insight into research data regarding material characteristics
- Production system to support the globalization of customers

Weaknesses

- Delay in launching of new products
- Delay in entry into the European market
- Shortage of human resources for entry into European and U.S. markets

Opportunities

- Electrification of automobiles and making them more compact
- Thermal management of automobiles (more fuel-efficient, less hazardous substances)
- Consumer needs toward environmental friendliness and lower fuel consumption

Threats

- Oligopolization of markets due to emerging mega suppliers
- Decrease in the sales volume of cars due to car sharing, etc.

Outcomes and Strategies of the 2018 Medium-term Management Plan

FY2016 Progress	Initiatives for FY2017	Goals for FY2018	Goals for the 10-year Strategy
Strategies for environmentally-friendly products at the global top level Molded plastic products <ul style="list-style-type: none"> • Established new products plan 		<ul style="list-style-type: none"> • The Niche and Cluster Strategies are deployed in order to expand businesses, and a system is in place that will maintain Hitachi Chemical's competitive advantage. • The number of customers has increased due to the cultivation of new customers. • Production has begun at alliance partners. 	<p style="text-align: center;">Become a global top 3 supplier</p>
Friction materials <ul style="list-style-type: none"> • Entered copper-free disk brake pad domain and secured orders in the North American market 			
Powder metal products <ul style="list-style-type: none"> • Expanded global orders of turbo charger components 			
Globally extending sales, development and production sites M&As <ul style="list-style-type: none"> • Searched for material technology synergy 			
<ul style="list-style-type: none"> • Accelerate reliability assessment with a view to full-scale entry into European market • Increase suitability for next-generation automotive applications • Open new design center in Thailand • Expand sales of high-value-added products • Consolidate the German company ISOLITE GmbH 			

M&A/Alliance strategies

The Automotive Products Business will focus on "creating new business with material technologies at its core" and "establishing European development and production sites with a view to expanding into new regions" and acquire technologies and business platforms from outside the Company.

ROIC (FY2016)

7.0%

(FY2018 Target: 10%)

The Automotive Products Business currently faces the important task of improving its operating margin.

Fiscal Year 2016 Progress

Various initiatives were undertaken under the slogan of "strengthen base to become a global top supplier." The Company acquired its first base for its European markets by consolidating the Italian company, FIAMM Energy Technology S.p.A., and also opened a new design center for powder metal products in Thailand. Additionally, in April 2017, the Company entered into an agreement with the German thermal insulation manufacturer, ISOLITE GmbH, to acquire its shares.

In terms of product strategy, turbo engine components, which contribute to the downsizing of engines, experienced a global increase of orders. As for new products, a new molded plastic product that is both lightweight and high-strength, developed using Hitachi Chemical's proprietary technology, was adopted by a Japanese automobile manufacturer, while a disc brake pad compliant with the legislation in the U.S. going into effect in 2021 regulating the copper content in brake pads was adopted by a U.S. automobile manufacturer.

FET and ISOLITE become consolidated subsidiaries of the Hitachi Chemical Group

FET
Company name: FIAMM Energy Technology S.p.A
Principal lines of business: Manufacture and sales of automotive and industrial lead-acid batteries
Purpose: <ul style="list-style-type: none"> To acquire bases for the production of automotive and industrial batteries using lead-acid technology To expand global sales channels with focus on Europe and America
Strengths: <ul style="list-style-type: none"> Possesses global sales network centered on Europe

ISOLITE
Company name: ISOLITE GmbH
Principal lines of business: Manufacture and sales of thermal insulations for automobiles, and other industrial applications
Purpose: <ul style="list-style-type: none"> To increase sales of ISOLITE thermal insulation products in Japan To expand global sales channels with focus on Europe and America
Strengths: <ul style="list-style-type: none"> "Direct insulation products" developed based on ISOLITE's proprietary material technologies



For detailed information on the following, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [News release](#).

Nov. 28, 2016 Notice Regarding the Share Acquisition of FIAMM Energy Technology S.p.A. in Italy

Apr. 27, 2017 Notice Regarding the Share Acquisition of ISOLITE GmbH, a Thermal Insulation Manufacturer in Germany

Direct insulation products

"Direct insulations products" are products that block heat by adhering to high-heat automotive parts such as engines. ISOLITE's "direct insulation products" block heat more effectively than conventional methods using heat shield plates that do not adhere to high-heat components, and insulate small spaces as well.

Major Products

Disc Brake Pads

We are developing our products for realizing ideal brakes that reduce braking noise while maintaining high braking performance, by optimizing material blending of metals and resins and through simulation analysis of friction phenomenon. Pads that do not contain copper are also under development to reduce more environment load.



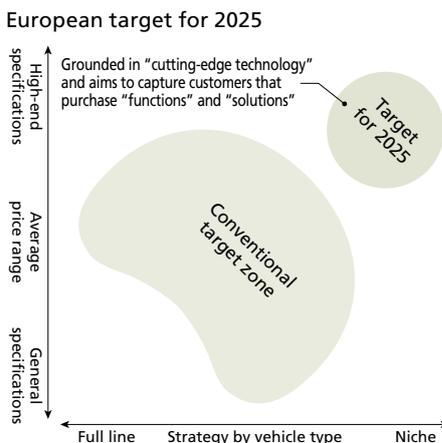
Powder Metal Products

Powder metal products are produced by compression molding of metal powders such as iron and copper by a press and are sintered at temperature below the melting point of the metal. Featuring high precision, high resistance to wear, resistance to high temperature and other characteristics, they are widely used in engines, industrial equipment and other applications.



Key Measures for Fiscal Year 2017
Strategies for environmentally-friendly products at the global top level

An automobile's environmental soundness, including lighter weight, downsizing of the engine, compliance with pollutant emission regulations and thermal emission controls, etc., is expected to become increasingly critical. Hitachi Chemical has a wide range of environmentally-friendly products in the molded plastic products, powder metal products and friction materials fields, and it will continue to focus on increasing sales of these products. Moreover, we are now able to offer various proposals to automobile manufacturers in the field of thermal management, as a result of acquiring and consolidating ISOLITE. We will continue to focus on creating synergy with our proprietary technology.

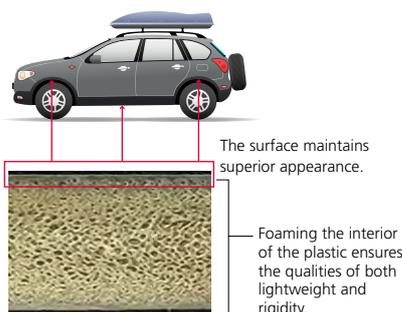


Globally extending sales, development and production sites

We will make efforts to accelerate and enhance the efficiency of vehicle designs that meet ASEAN specifications through the collaboration of the design center in Thailand and Japan headquarters, and expand orders. Furthermore, we are studying the possibility of local production of certain products at the bases acquired through M&As, and collaborating with ISOLITE to gain a foothold for our entry into new businesses related to automobile thermal management, which is certain to become even more important going forward. In Japan, we will reinforce the collaboration between the sales divisions across products and work towards capturing new orders.

Product examples: Exterior plastic molded foam products

Hitachi Chemical has been leveraging its core competencies to develop new products that contribute to making vehicles more lightweight. To date, Hitachi Chemical's rear door module has been commercialized as an exterior plastic molded foam product and has received high acclaim for its freedom of design and for making vehicles lightweight. In fiscal year 2016, we succeeded in the development of exterior plastic molded foam products that are equipped with strength while being lightweight by utilizing our unique foaming technology. Equipped with this new technology in its arsenal, Hitachi Chemical will aim to expand its business globally.



Exterior plastic molded foam products

Molding exterior parts of automobiles with sponge-like foamed plastic makes them more lightweight and contributes to lower fuel consumption.