



Executive Officer
Deputy General Manager
Energy Storage & Automotive Components
Business Headquarters

Satoshi Takahashi

Automotive Components Business of Hitachi Chemical Contributing to Environmental Conservation and Energy Saving

Hitachi Chemical, as a division of Hitachi Ltd., started its business manufacturing electrical insulating varnishes used for electric motors for the Japanese domestic market in 1912. It became an independent company after separation from Hitachi Ltd. in 1962 and remains so today. Electrical insulating varnish, our first original product, was the basis for all of our other products developed later. Our automotive components business started from manufacturing steering wheels by utilizing expertise accumulated from manufacturing electrical insulating varnishes in 1938 long before the separation from Hitachi Ltd., and has a history of nearly 80 years. Today we manufacture automotive related products including plastic molded products and sheets, brake friction materials, powder metallurgy products and starter batteries. Our automotive components business, one of the main businesses at Hitachi Chemical, earns approximately 30% of the total revenue of the Hitachi Chemical Group.

Of the four product categories above, our automotive components business headquarters, under my control, handles products three: plastic molded parts and sheets, brake friction materials and powder metallurgical products. We are promoting “Environment, Safety and Comfort” as our slogan throughout our business, from product manufacturing to supply. Especially in recent years, global environmental issues have become a big challenge for mankind and our activities to protect the environment are rightly focused on these global concerns. We are proud that Hitachi Chemical can contribute to the good of society.

Since the late 20th century, global warming has become a major concern worldwide. Especially, adverse impacts caused by human activities have become an important issue, and emission of greenhouse gas (with carbon dioxide as the main component) from human industrial activity has been considered as the main culprit. We, as members of industry, are must strive to eliminate such negative human impacts on the environment. Many countries have ratified the Kyoto Protocol and each country is working on reducing CO₂ emissions to achieve the reduction targets that were set and adjusted to suit the unique situation of each country. The automobile and automotive components industry sector, in which we work, has a very high impact, and contributes about 18% of total CO₂ emissions, prompting us to take particularly powerful and urgent countermeasures. Measures to reduce CO₂ emissions from automobiles include: ① improving fuel efficiency for energy saving, ② traffic flow



control and eco-drive, and ③ reducing vehicle miles of travel. Improving fuel efficiency, however, contributes the largest among them, and a significant effect can be expected from it. To further improve fuel efficiency, effective approaches include: ① reduction of vehicle body weight, ② automotive engine modification (lean burning, downsizing, dieselizing, ethanol for motor fuel application, idling stop, etc), and ③ automotive electrification (HEV, PHEV, EV) and fuel cell-powered automobiles. In following such industrial trends, we are manufacturing environmentally conscious strategic products, such as: ① plastic doors and gears for weight saving, ② turbo charger components produced from powder metallurgic materials for engine modification, and ③ inverter related plastic parts for automotive electrification.

Another environmental problem we face is air pollution. Caused by released and drifting environmentally hazardous substances in the air, this has been a serious problem with a wide range of impacts such as human health disorders, forest degradation, and other serious ecological impacts. Environmentally hazardous substances include sulfur dioxide, nitrogen oxide, suspended particulate matter, carbon monoxide, hydrocarbons and heavy metals. As one approach to controlling and reducing environmentally hazardous substances, after our successful achievement in leading developing asbestos-free brake friction materials, we are now working on copper-free brake friction materials because copper is considered as a heavy metal and is regulated. In the same way, we commercially produce extruded sheet with a plated surface like finish without using heavy metals or requiring plating solution. We work hard in this product category.

The examples introduced above are just a few; however, both plastics as a replacement for metals and powder metallurgic material as a replacement for casting and/or forging material are important products for weight saving, which closely linked to environmental protection. We are engaged daily with reducing or eliminating environmentally hazardous materials contained in friction materials and other products, and will further concentrate management resources on development of Earth-friendly products to accelerate our contribution to environmental protection.

Each product has its origin in development of the raw materials in which we specialize. We then manufacture each product, with stress on meeting customer demands and environmental protection throughout the process. In a wide range of applications, we seek opportunities to add value to each of the products we deliver to customers. Under this concept, we will continue to speed up the development process by taking full advantage of our collective expertise and focus on realizing the goal: “Contribution to the society through the development and deployment of pioneering technologies and products.”