



Feature

Developing Fluorochemicals for a Digital World using Co-Creation with Customers

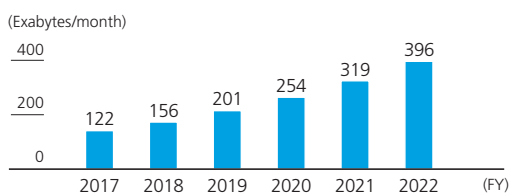
Why is it important?

Growing Expectations for Materials Innovation to Power the Evolution of ICT

The rapid spread of ICT networks is changing the world. The launch of the fifth generation of mobile communication networks (5G) will require more communications infrastructure and equipment used in data centers along with technology for sending vast amounts of data quickly and compactly. In terms of semiconductors, for example, efforts are underway for miniaturization and higher integration, while for LAN cables, efforts are focused on improving performance and security.

Fluorine materials have been proven to increase the performance of ICT equipment. For this reason, there are growing expectations surrounding these materials.

Global ICT Traffic and Future Forecast



Source: Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017–2022

DAIKIN'S APPROACH

Increasing Collaboration with Customers with an Eye Toward Value Creation for Society

Daikin is both a manufacturer of air conditioners and fluorine materials. Since becoming the first in Japan to commence research on fluorocarbon gas in 1933, we have established an integrated R&D system spanning from molecular design to processing. Today, we manufacture more than 1,800 types of fluorine materials, including polymers, rubbers, and gases, which support many industries. Fluorine is highly resilient against heat and chemicals, while offering excellent electrical conductivity and insulating properties. Daikin is now working alongside customers on value creation that will contribute to the evolution of ICT by harnessing these key characteristics.

Characteristics and Example Applications of Fluorine Materials

<p>Clean</p> <p>As a highly accurate etching agent in the semiconductor manufacturing process</p>	<p>Heat and flame resistant</p> <p>Insulating</p> <p>As an insulating, flame resistant covering material for LAN cables</p>
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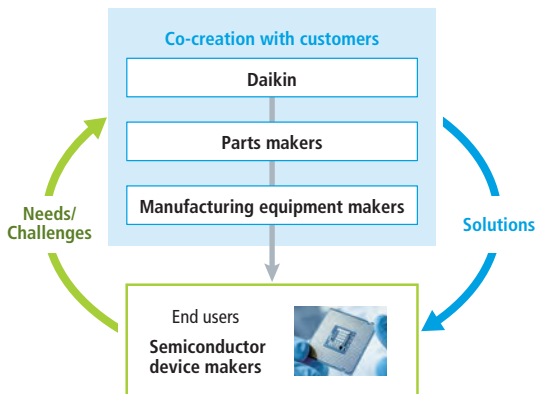
DAIKIN'S PERFORMANCE

Helping Improve Quality and Provide Solutions for Customers and End Users

In the semiconductor field, parts makers are the direct customers of Daikin as a materials maker. In turn, our customers are suppliers to manufacturing equipment makers and semiconductor device makers as the end user. In recent years, Daikin is focusing on proposal activities as a development partner, in addition to satisfying the costs and workability requirements of customers. We visit end users together with customers to better grasp technical challenges and then work together to find solutions.

For example, the density of semiconductors has increased more than 10 times over the past decade. Daikin's etching agents have also contributed to the miniaturization of semiconductors which was responsible for some technological innovation. To develop etching agents that enable circuit miniaturization because of their high performance and ease of handling, for many years we have continued our efforts to find optimum new materials and propose original compounds.

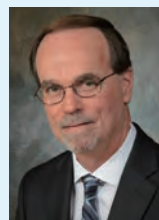
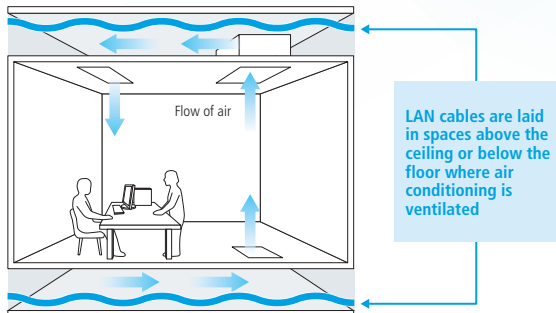
Co-creation with Customers in the Semiconductor Field



In the field of LAN cables for buildings, we supply highly flame resistant fluorine covering material to the North America market. Office buildings in North America require the use of LAN cables that do not cause the spread of fire. This is because structurally speaking internal wiring is susceptible to spreading a fire inside a building because the area where it is laid has a high degree of air permeability. Daikin not only proposes materials to cable maker customers, but also participates in the creation of standards for the cable industry. We are also contributing to technical development for the entire industry, by examining the risk of fire and weaker communication speeds associated with increased ICT traffic and electrical current.

In this manner, Daikin continues to propose new solutions through technological development that benefits customers and society.

Example of LAN Cable Usage in North America



Voice

We Will Continue with Useful Product Development for Customers

Dan Kennefick
Daikin America, Inc.

We have long-standing experience in the cable market, and thanks to our strong connections with customers, we can, along with our partners, identify needs in a multifaceted manner. Looking ahead, we will continue to create products that benefit customers and society from a customer-first perspective, through product development jointly with customers after identifying the latest trends in a constantly changing world.

NEXT CHALLENGE

Expanding Solutions using Fluorochemical Technologies that Contribute to the Development of Society

Fluorochemical technologies are at the heart of solutions for various cutting edge fields, not only ICT, but also automobiles and new energy. Daikin is committed to being the first to identify customer needs around the world using collaboration among sales, marketing and development. Our goal is research and development that satisfies these needs.

Going forward, we will utilize our open innovation lab with locations around the world to speed industry-academia partnerships and co-creation with other companies. In turn, we will continue to work on innovative themes for the future, such as developing new products through combinations with other materials.