

R&D Activities and Intellectual Property

As a technology-centered company, we realize that strengthening R&D capabilities is one of our most important strategies for achieving sustainable growth. Through original technological capabilities and research based on dialogues with markets, we are developing innovative products that generate demand, providing solutions, and accelerating the resolution of customers' technological issues.

Our Four Core Technologies

Pressure-sensitive adhesive applications

Through the development of pressure-sensitive adhesives and substrate and the combination of related technologies, we are expanding the range of fields in which the basic functions of pressure-sensitive adhesive products are utilized.

Material quality and functionality enhancement

Through the chemical and physical processing of paper, film, and pressure-sensitive adhesives, we are enhancing their characteristics and adding new functionality.

Specialty paper and composite materials production

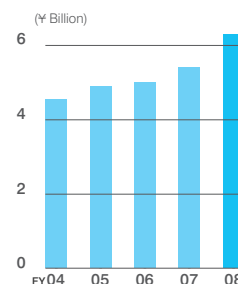
We use original papermaking technologies and coating, impregnation, and laminating technologies to develop specialty papers and high-value-added materials that transcend traditional concepts of paper.

System development

Through systematizing machinery and equipment and building high-level systems that draw on the distinctive characteristics of materials, we are providing advanced solutions.

R&D Expenses

¥ **6.3** billion



R&D Activities

Basic Policy

As a technology-centered company, developing innovative products that generate demand and offering solutions based on these products drives our growth. We have built our preeminent market position by advancing and linking individual technologies for pressure-sensitive adhesives and other areas to add further value to our sheet materials and increase their applications.

In the year ended March 31, 2008, continuing from the previous fiscal year, we developed technologies and new products based on our medium-to-long-term R&D plan. We pursued research that emphasizes customer needs and dialogues with markets, concentrating particularly on developing functional materials and related processing technologies. As result, the Lintec Group invested a total of ¥6.3 billion in R&D, up ¥1.3 billion year on year.

Organizational Structure and Facilities

Lintec's R&D centers on the Technology Administration / R&D Division in Saitama Prefecture, which has approximately 200 research personnel. With a complete array of the very latest research equipment, pilot coaters, and clean-room facilities, the facility collaborates closely with production engineering divisions to develop a range of coating agents and other products. Developing and producing a variety of equipment, our Ina Technology Center in Saitama Prefecture is working particularly hard to develop and strengthen semiconductor-related equipment and production systems. Moreover, the Group also has an R&D base in Boston, in the United States, which conducts research and development in such areas as industrial-use multilayer materials and coating technology.

Technological Foundations

We will combine our four key technologies of pressure-sensitive adhesive applications, material quality and functionality enhancement, specialty paper and composite materials production, and system development to develop and supply highly distinctive products unlike anything else available in the market.

Supported by data that we have accumulated over many years of research, we develop and supply industry-leading pressure-sensitive adhesive-use technology and products. We also develop many types of devices for the application and removal of our products. This ability to provide total solutions is Lintec's major strength. Through such initiatives to develop materials and equipment, we intend to add further value to our sheet products and extend their range of applications.



Research Laboratory
Researching and developing pressure-sensitive adhesive agents, release agents, precision coatings, etc.



Ina Technology Center
Developing and producing semiconductor-related equipment and pressure-sensitive adhesive related equipment

Examples of R&D Activities in the Fiscal Year under Review

(Pressure-sensitive adhesive-related products)

Printing- and information-related products

We developed and marketed label materials for hard disc drives and other electronic devices and components. For these label materials, we minimized malfunction-causing volatile trace components in adhesive agents and incorporated release materials that use silicone-free organic polymer materials. Further, we are developing products that cater to a wide variety of customer needs. For example, we are developing label materials for new-specification barcode recording, which are needed for pharmaceuticals and medical materials.

Commercial- and industrial-related products

Lintec developed and marketed environment-friendly non-PVC adhesive films for application to automobile window frames as a black-coating alternative. In addition to outstanding weather-resistance, these new films are easy to apply, thanks to special processing, and help reduce defective application rates and shorten times. Also in the automobile-related products, we developed film antenna materials for inclusion in laminated safety glass for windshields.

Electronics- and communication-related products

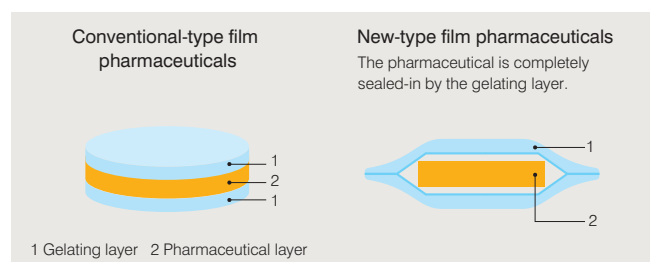
We developed pressure-sensitive adhesive agents that cure by temperature and pressure in semiconductor package-sealing processes. These agents significantly increase the reliability of semiconductor packages by enabling voidless interface adhesion. Moreover, the elimination of pressure-sensitive adhesive curing processes simplifies and shortens semiconductor package production processes.

Optical-related products

We further evolved pressure-sensitive adhesive agents used to bond optically functional films and developed groundbreaking pressure-sensitive adhesive agents that simultaneously realize reworkability and outstanding reliability. We are rolling out those adhesive agents as products compatible with a wide variety of production processes. And, we focused efforts on developing optical-related products for flat panel displays by applying such original technologies as those for antiglare coating agents that simultaneously realize low glossiness and high transparency and clearness.

Healthcare-related products

Lintec marketed products realized through the application of its basic technology for film pharmaceuticals that are easy to swallow because they become a jelly on contact with small amounts of saliva. Also, we are further evolving the functions of these products by jointly developing next-generation expanding oral film formulations through an operational and technological tie-up with ASKA Pharmaceutical Co., Ltd.



(Paper-related products)

We developed and launched monochrome fancy papers, characterized by the striking clarity of the white and the deep color of black, and will continue unstinting efforts to develop original products.

We are continuing developments to upgrade our release-coated film for industrial use to further enhance its reliability. In particular, we have made improvements to our coated films to accommodate the shift to high functionality for electronic components, and are striving to develop products that offer high levels of customer satisfaction.

Further, in the area of release papers, we are aiming to be more considerate to the environment by switching from conventional manufacturing methods, which utilize organic solvents, to non-solvent-based methods.

Intellectual Property

We aim to increase corporate value by supplying original products developed through our continuous R&D efforts. These products constitute our intellectual property and are important management resources.

To protect these resources, we have established the Intellectual Property Department within the Technology Administration / R&D Division. The department's fundamental functions are to support operational activities through patent applications and to build barriers to protect intellectual property.

The department works to increase the freedom of operational activities, minimize the risks accompanying operations, and increase motivation levels among technical staff. In addition to preparing and submitting patent applications, it monitors for infringement of rights and consults with researchers in the early stages of product development and also in the discovery stage at our R&D locations. In other words, the department is engaged in comprehensive and strategic activities to protect our intellectual property.

As well as increasing the number and quality of patent applications and rights acquisitions, we are working to supplement and rebuild our portfolio of patents for growth businesses and foundation businesses, to provide intellectual property support for operations shifting to overseas locations, and to train more employees with a view to advancing and accelerating development processes. Through those efforts, we aim to increase profitability based on our intellectual property.