

# Present

## The Kuraray Group's Strengths, Backed by Its History

### Our Unique Technical Strengths Create Products with the World's Top Market Share\*

\* In-house survey

At Kuraray, we use our unique technical strengths to create products that the world had never seen before. We were the first company in the world to commercialize KURALON™ (PVA fiber), the first synthetic fiber produced using technology made in Japan. Other businesses we have created include PVA resin, which is a raw material of KURALON™; PVA film, which is essential for liquid crystal displays (LCDs); EVAL™ (ethylene vinyl-alcohol copolymer [EVOH] resin), which features excellent gas barrier properties; and, a lineup of various commercialized chemical products that use the world's first synthetic isoprene monomers as materials. We have also launched a wide range of products that have become an integrated part of people's lives, such as CLARINO™ (man-made leather), which recreates the structure of natural leather, and MAGIC TAPE™ (hook-and-loop fastener). Sales of products with the highest global market share\* that we have created using our unique technologies accounted for more than half of the Kuraray Group's total sales in fiscal 2020.

### Invisible Assets



#### Accumulation of unique technologies and know-how

We have accumulated knowledge, unique technologies, and commercialization know-how over our 90 years.



#### Information on particular markets acquired through development efforts

We leverage information obtained through product and market development in new product development.



#### Strong and trusting relationships with our customers

We meet world-class performance and quality standards required by our customers and have earned their trust.



#### High-quality human resources well-versed in their areas of expertise

We contribute to solving social issues with our advanced expertise and unique technologies.

### Core Competencies

“For people and the planet—to achieve what no one else can”

Unique technical strengths

Application development capabilities

# Kuraray Group Products with Top Market Share Worldwide\*

\* In-house survey



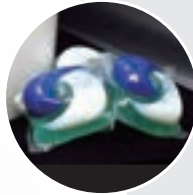
## PVA resin (Excluding China)

PVA resin was industrialized as a raw material for the synthetic fiber KURALON™. It has many characteristics: water-soluble, highly adhesive, emulsifiable, resistant to oil and chemicals, and easy to form into a film. It is used in a wide range of applications such as paper processing agents, adhesives, and a stabilizer for the polymerization of vinyl chloride resin.



## Optical-use PVA film

Optical-use PVA film is used as a polarizing film, vital to liquid crystal displays (LCDs) such as flat-panel TVs, PC monitors, tablets, and mobile devices.



## Water-soluble PVA film

Water-soluble PVA film is used for unit dose applications in detergents, personal care, agrochemicals, and water treatment. Because the film dissolves completely in water and is environmentally friendly, it does not contaminate the recycling stream or contribute to micro-plastic pollution.



## EVAL™ (EVOH resin)

EVAL™ provides excellent barrier properties against the permeation of gases, superior to those of any other plastic. It is used widely in food packaging materials to block out oxygen and preserve the flavor and quality of food. It is also used in automotive plastic fuel tanks, as it provides a highly effective barrier against fuel vapor permeation. It is being used increasingly in a wide variety of applications, such as vacuum insulation panels for large refrigerators, to improve energy efficiency.



## KURALON™ / KURALON K-II™ (PVA fiber)

KURALON™ is a synthetic fiber based on polyvinyl alcohol (PVA) with several unique properties, including high tenacity, low elongation, and hydrophilicity. It is widely used in various industrial fields for applications that include as a substitute for asbestos in cement reinforcement and as a separator for alkaline manganese batteries. KURALON K-II™ is another PVA fiber made by new production technologies. Water-soluble fibers with different dissolving temperatures and high-tenacity fibers can be obtained.



## Isoprene chemicals

We apply our unique synthesizing technologies to produce a cleaner MMB that is highly safe and easy to handle, as well as diols, aroma chemical and cosmetic ingredients, pharmaceutical and agrochemical intermediates, and more.

Note: One-of-a-kind products derived from synthetic isoprene (MMB, MPD, etc.)



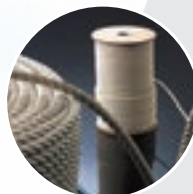
## GENESTAR™ (High heat-resistant polyamide resin)

GENESTAR™ is a new high heat-resistant polyamide resin created with our proprietary technologies. It has excellent low water absorption, heat resistance, chemical resistance, and sliding properties. It is used in electronic parts of mobile phones, personal computers, and the like, and it is applied in backlights for LED liquid-crystal TV panels and the automotive field.



## Activated carbon

Activated carbon is created through a reaction with gas and chemical agents at high temperatures using a carbon substrate, such as bituminous coal and coconut shells. It has micropores (diameter: 10 - 200 Å. 10 Å = 1 nm). The micropores form a meshwork structure inside the activated carbon. The walls of these micropores give the material a large surface area (500 - 2,500 m<sup>2</sup>/g) for adsorbing a wide range of substances by the capillarity of the micropores.

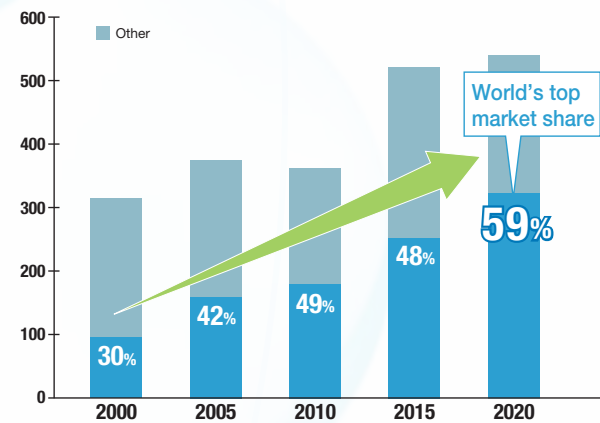


## VECTRAN™ (High-strength polyarylate fiber)

VECTRAN™ fiber has about seven times the tensile strength of steel by weight and provides excellent abrasion resistance, flex fatigue, and chemical resistance, among other physical properties. It is used in various applications and sectors, including aerospace, composites, electronic components, ropes, and sporting goods.

## A Wide Variety of No. 1 Products

Net Sales (Billions of yen)



Sales of our products with the world's top market share reached 59% of the Kuraray Group's net sales in fiscal 2020.

\* In-house survey