The UBE Group's Main Environmentally Friendly Products

Polyimide

Polyimide resins, which are highly resistant to heat, chemicals, etc., are utilized in a variety of electrical appliances and other products.

Reason for selection

Chip On Film (COF) for use in TVs: Helps reduce energy consumption.
Flexible solar cell film/Anode binder for lithium-ion batteries/Biphenyltetracarboxylic dianhydride (BPDA) for insulation in EV motors: Contributes to reducing CO_2 emissions.
Water-based polyimide varnish (organic solvent-free): Contributes to reducing volatile organic compound (VOC) emissions.

Separation membranes

Gas separation membranes containing polyimide hollow fibers enable the efficient extracting of specific gases from mixtures.

Reason for selection

CO_2 separation membranes: Removes CO_2 from biogas (methane)
Dehydration membranes: Removes water from bioethanol
Hydrogen membranes: Various uses including in hydrogen purification and the production of Sustainable Aviation Fuel (SAF) and biodiesels, contributing to the transition from fossil fuels and reducing usage amounts.

Ceramics

UBE's silicon nitride is a high-quality powder created through an original Imide-decomposition process. This powder offers the optimal characteristics required of a raw material powder and can control microstructures, giving it high thermomechanical properties.

Reason for selection

Use in bearings: Bearings for renewable wind power generators and EV motors
Use in circuit boards: Contributes to more widespread EV adoption as a circuit board material in EV inverter modules.
Use in fluorescent materials: Contributes to reducing energy consumption when used in LED illumination.

Separators

Separators from Ube Maxell are made using a microporous polyolefin film that features uniformly distributed microporous structures produced through a dry manufacturing process. A main component in the creation of lithium-ion batteries, such films have been extensively developed for diverse applications in wide-ranging fields over many years.

Reason for selection

Used in next-generation vehicles (e.g. HEVs, BEVs) and energy storage systems for power stations to contribute to mitigating fossil fuel resource usage and CO_2 emissions

High-performance coatings

UBE's high-performance coating products, which boast superior durability and eco-friendliness, include polycarbonate diols (PCDs), polyurethane dispersions (PUDs), and oxetane.

Reason for selection

PCDs: Highly durable materials for use in polyurethane products. Help to lengthen the lifespan of urethane products.
PUDs: Water-based urethane coatings offer the benefit of environmentally friendly, low-VOC coatings. PUDs do not contain pyrrolidone or tin, so they offer manufacturers who transition to using them a reduction in the amount of harmful substances in new products.
Oxetane: Lower toxicity than conventional epoxies and acrylic compounds. Can be used for solvent-free curing products, avoiding the need for organic solvents that are a source of VOCs. Also uses less energy for the curing processes.

C1 chemicals

These chemicals are components of the electrolyte solutions used in the lithium-ion batteries installed in BEVs and PHEVs.

Reason for selection

Contributes to reduced fossil fuel usage and CO_2 emissions when employed as a raw material for the electrolyte solutions used in lithium-ion batteries for BEVs and PHEVs.

Elastomers

UBE's Elastomers Business produces and sells butadiene rubber (BR), a typical synthetic rubber. These products include high-cis BR synthesized using a cobalt catalyst.

Reason for selection

Used in vehicle tires to reduce fuel consumption, contributing to lower resource usage.

Nylon composites

We utilize the special characteristics of nylon to provide high-performance resins that meet customer demand. We actively pursue the development of composite products that utilize biomass raw materials, recycled materials, etc. as raw materials.

Reason for selection

The development of resin products for use in EV vehicle parts enables weight reductions and contributes to reduced CO_2 emissions. Furthermore, the widespread use of composites made with raw materials derived from plants, recycled materials, etc. contributes to the realization of a circular economy and to countermeasures against global warming.