

## The UBE Group's Evolution

The UBE Group's operations as a chemicals company date back to 1933, when we started producing ammonium sulfate with coal we mined in Ube. We have helped resolve social issues with our chemicals technology for 90 years. By integrating efforts to pursue growth in specialty chemicals with initiatives to tackle environmental issues, we aim to achieve sustained growth toward and beyond our centennial.

# 1900

- 1897**  
● Okinoyama Coal Mine established
- 1914**  
● Ube Shinkawa Iron Works established
- 1923**  
● Ube Cement Production, Ltd., established
- 1933**  
● Ube Nitrogen Industry, Ltd., established

# 1950

- 1942**  
● Ube Industries, Ltd. established through amalgamation of the four companies
- 1951**  
● Central Research Laboratory opened (now Pharmaceutical Research Laboratory)
- 1955**  
● Ube Caprolactam Factory established

# 2000

- 1967**  
● Sakai Factory established
- 1968**  
● Polymer Laboratory opened (now Future Tech Laboratory)
- 1971**  
● Polybutadiene plant established in Chiba (now UBE Elastomer Co. Ltd.)
- 1993** Spain  
**1997** Thailand  
● A global production structure established (Caprolactam, nylon, and fine chemicals businesses started continuously during this period)
- 1998**  
● Operations launched at Thai synthetic rubber plant
- 1999**  
● Machinery business spun off as UBE Machinery Corporation, Ltd.

# 2000

- 2016**  
● Osaka Research & Development Center Opened
- 2022**  
● Ube Industries Ltd. changed its trade name to UBE Corporation  
● Cement-related business spun off to Mitsubishi UBE Cement Corporation

### 1942–

**Established Ube Industries, Ltd. Chemicals business expands and specialty chemicals operations flourish**

#### Expanding the chemicals business

The postwar period saw Japan rapidly rebuild its economy and drive advances in chemical technologies. UBE began manufacturing nylon precursor caprolactam in 1955 and nylon resin in 1959. We developed various nylon applications and grades, deploying films for food packaging and supplying highly reliable automotive components.

In 1971, we started making polybutadiene rubber in Chiba, Japan, primarily for automobile tires.

#### Developing polyimide products

We started by synthesizing biphenyl tetracarboxylic dianhydride (BPDA) in 1971. In 1983, we became the world's second company to commercialize polyimide films. We leveraged its outstanding heat resistance and other properties to expand applications for polyimide film, primarily for circuit boards, such as integrated circuits for liquid crystal displays.

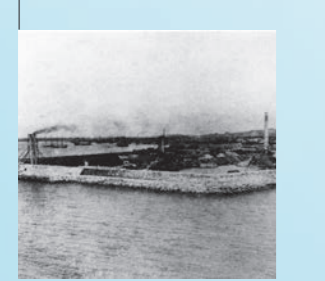
On top of that, we developed gas separation membranes using polyimide, hitherto deemed hard to manufacture. This enabled us to enter the separation membrane business for hydrogen, nitrogen gas, carbon dioxide, and other gases.

### 1897

**Okinoyama Coal Mine established UBE established**

#### UBE's origins

UBE started out as a silent partnership, called the Okinoyama Coal Mine, in which local residents invested to developing local coal fields



1910 Okinoyama Coal Mine

### 1933–

**Ube Nitrogen Industry, Ltd., established Start of chemicals business**

#### Producing ammonium sulfate fertilizer from coal

While industry peers considered Ube's low-grade coking coal unsuitable, from it UBE was able to synthesize ammonia, a key raw material for ammonium sulfate. Ube Nitrogen Industry, Ltd., contributed to the agricultural progress by commercializing that inorganic salt.



1934 First ammonium sulfate shipment

#### Fine chemical product development

Our C1 chemicals technology flourished in the 1970s with the discovery of the palladium-catalyzed nitrite process (see note below) carbon monoxide coupling reaction. We drew on proprietary techniques to develop C1 chemicals employing carbon monoxide as a raw material.

An excellent example of that approach was dimethyl carbonate, a solvent for electrolyte in lithium-ion batteries. We have been expanding our business downstream to such high-performance coatings as polycarbonate diol (PCD) and polyurethane dispersion (PUD).

#### Started full-scale pharmaceutical research

We initiated full-fledged research into pharmaceuticals from the 1980s. Under the collaboration with Mitsubishi Tanabe Pharma Corporation, we launched a jointly developed anti-allergy medication in 2000. A partnership with Daiichi Sankyo Company, Limited, led to a hypertension drug launch in 2003. To date, we have contributed to better health by commercializing four proprietary pharmaceuticals.

Also, we harnessed organic synthesis technology that we amassed as a chemical manufacturer to expand our contract pharmaceuticals manufacturing business for active ingredients and intermediates.

### 2022–

**Renamed UBE Corporation Focusing on specialty chemicals**

**Overhauling our business structure**

We transformed into a corporate group centered on specialty chemicals on transferring our cement-related business to Mitsubishi UBE Cement Corporation. We accordingly renamed ourselves UBE Corporation.

We will pursue sustainable growth by integrating efforts to drive our expansion in such value-added specialty chemicals as polyimide, separation membranes, fine chemicals (C1 chemicals), composites, and pharmaceuticals and deliver solutions to environmental issues.