



## Ube Industries Acquires Patents for Trimethylindium Manufacturing and License for Filling Container Technology

May 26, 2016

TOKYO, May 26, 2016 \_ Ube Industries, Ltd. today announced that it has acquired patents from Rohm and Haas Electronic Materials LLC, a wholly-owned subsidiary of US-based The Dow Chemical Company, for technology to manufacture trimethylindium (TMI), a metal organic (MO). In addition to patents, Ube Industries has acquired a license for TMI filling containers.

Ube Industries presently manufactures and markets MO raw materials for making compound semiconductors used in the manufacturing process for light-emitting diodes (LEDs) and laser diodes (LDs). MOs are one of the core products of Ube Industries in the category of semiconductor process materials. Demand for MOs is increasing centering on Japan and other Asian markets, as a raw material used in metal organic chemical vapor deposition (MOCVD)\*1, a method that is employed in the manufacturing of compound semiconductors that are used in such products as high-luminosity white LEDs.

Ube Industries began R&D into MOs in the 1980s, and launched commercial manufacturing and marketing of MOs in 1992. The company established a second production facility at the Ube Chemical Factory in 2012, realizing the ability to manufacture all MOs used to make compound II-VI and III-V semiconductors\*2 by MOCVD, including trimethylgallium (TGM), trimethylindium (TMI), and trimethylaluminum (TMA). Ube Industries has also established a strong reputation for its sophisticated technical services through analysis of minor impurities.

The acquisition of patents for manufacturing TMI and license for TMI filling containers will further strengthen the presence of UBE Industries in a growing market, and better position the company to meet demand from users. Ube Industries aims to generate net sales in excess of ¥5 billion from semiconductor process materials including MOs, by 2018.

### Footnotes

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#### **\*1 Metal organic chemical vapor deposition**

Metal organic chemical vapor deposition (MOCVD) is a well-established method for growing crystals used to manufacture compound semiconductors, from raw material MOs.

## \*2 Compound II-VI and III-V semiconductors

Compound semiconductors are composed of elements from two or more different groups of the periodic table. Well-known combination of groups include group III (aluminum, gallium, and indium) and group V (nitrogen, phosphorus, and arsenic), and group II (magnesium and zinc) and group VI (oxygen, sulfur, selenium, and tellurium). Compound II-VI and III-V semiconductors are composed of elements from these groups. MOs are used as a raw material to manufacture these compound semiconductors by MOCVD.

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