January 14, 2025

NEWS RELEASE

Commenced mass production and sales of new sputtering target material "WL-TCO™"

Mitsui Mining & Smelting Co., Ltd. (President: NOU Takeshi; hereinafter, “Mitsui Kinzoku”) is pleased to announce that PVD Materials Division has commenced mass production and sales of "WL-TCO™", a sputtering*1 target material that contributes to particle and etching residues reduction for transparent conductive films.

Transparent conductive films, which are essential for electrodes in flat panel displays used in various applications such as televisions, smartphones, and in-vehicle monitors, require high conductivity and excellent transmittance. ITO*2 targets are widely used sputtering target material for transparent conductive films due to required that uniform film formation over large areas.

To deposit ITO transparent electrode wiring, introduce H_2O to chamber to prevent occur residues on pattering (etching), when sputtering to form a thin film. However, the introduction of moisture during production facilitated the occurrence of dust, referred to as particles. This led to an increase in particle-related defects, which in turn became a factor in reducing the yield rate. Consequently, this is a challenge for ITO targets.

Using our new sputtering target material "WL-TCO™" is able to deposit a transparent conductive film with conductivity and transmittance equivalent to ITO without introduce H_2O during sputtering, using "WL-TCO™" leads to the suppression of particle generation, thereby improving the productivity and reducing the cost of flat panel display production. Mitsui Kinzoku has started mass production of "WL-TCO™," in its main factory in Mitsui Electronic Materials Co., Ltd., (Taichung City, Taiwan) and have started sales to major flat panel display manufacturers. Strive to contribute

to our customers' energy savings, improved yield rates, and reduction of environmental impact through the reduction of particle and etching residues by "WL-TCO™".

Mitsui Kinzoku is committed to contributing to our customers' energy savings, yield rate improvement, and reduction of environmental impact through the particle and etching residues reduction effect of the new transparent conductive film material "WL-TCO™."

Mitsui Kinzoku will contribute to the realization of a sustainable society by implementing our its vision for 2030, “Building new businesses －and the future－ with our material intelligence,” based on its purpose, “We promote the well-being of the world through a spirit of exploration and diverse technologies.”

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【For Information】

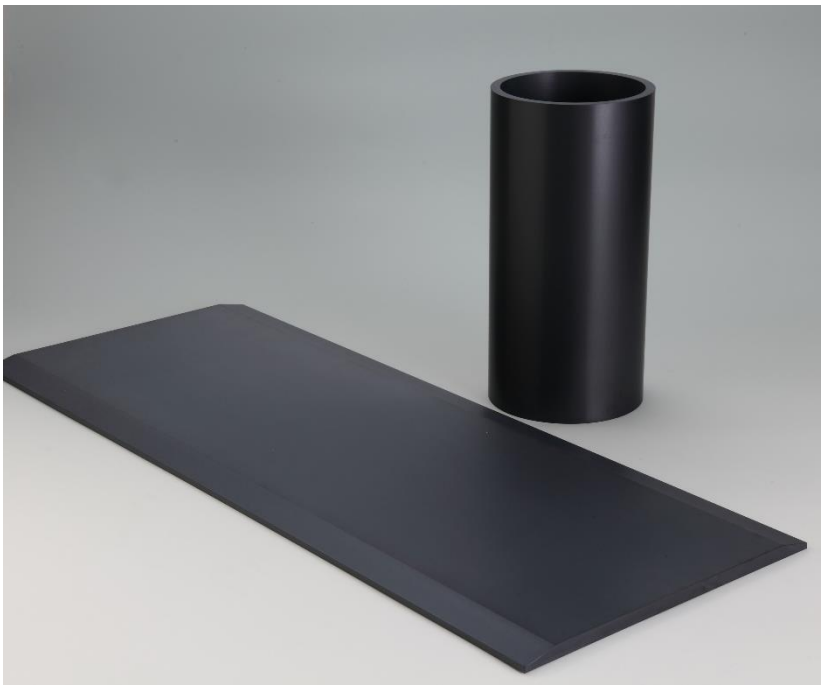
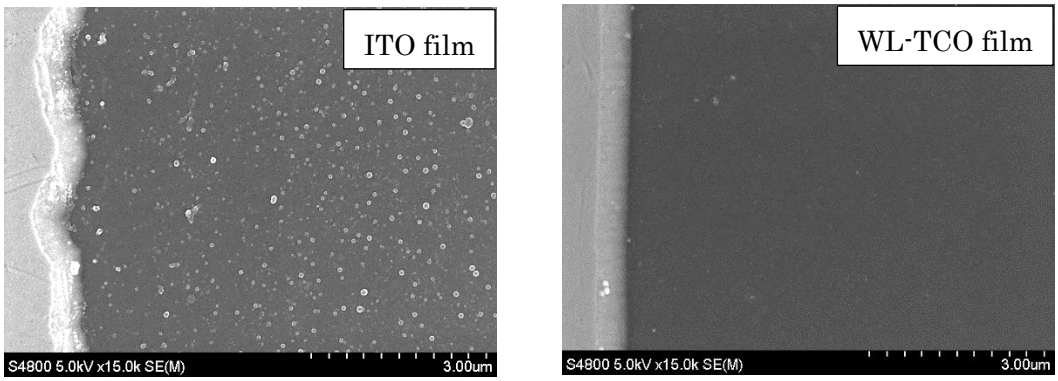


Figure.1 WL-TCO™ target



(a) ITO film etch residue
(Introduce H2O amount is less condition.)

(b) WL-TCO film etch residue
(Introduce H2O amount is less condition.)

Figure.2 Sputtering film etch residue

Explanation of Terms

※1 A method of creating a thin film by bombarding a target material with Ar ions in a vacuum, and depositing the target material (atoms) ejected onto a substrate on

the opposite side

※2　Indium Tin Oxide