

PRODUCT DATA SHEET

IndiOx[®] (Indium Oxide) Type A and Type B In_2O_3

Introduction

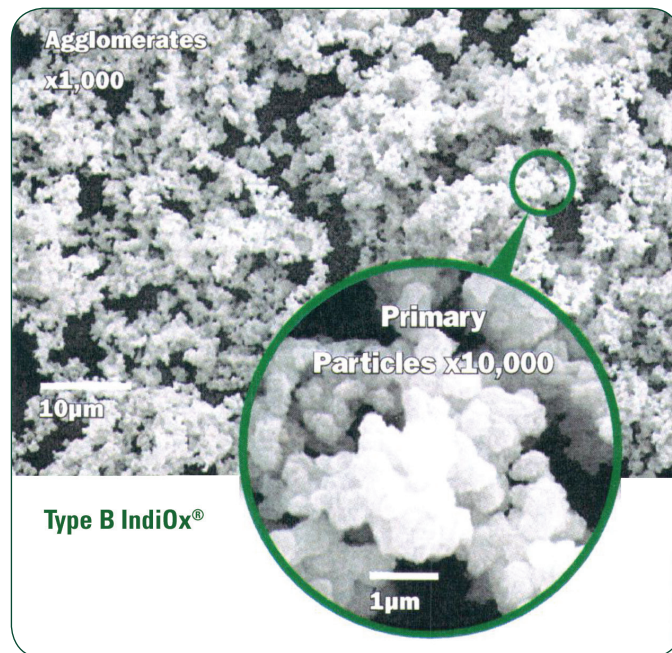
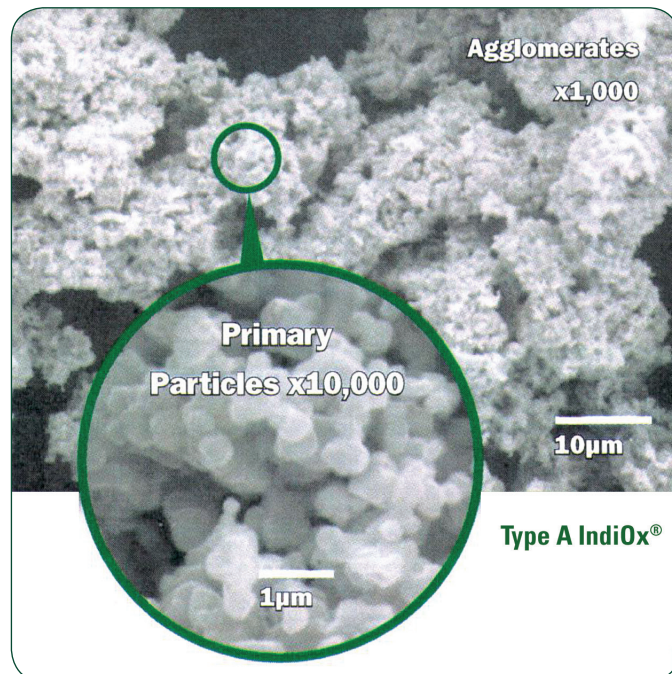
IndiOx[®] (Indium Oxide or Indium Sesquioxide) is a yellow-colored powder with a molecular weight of 277.64. It is a stable ceramic-like material, insoluble in water, and volatilizes at 850°C. **IndiOx[®]** is an n-type semiconductor and as such, is used as a resistive element in integrated circuits and to form heterojunctions with p-InP, n-GaAs, and other semiconductors. Other uses include glass coloring, gassing suppression in alkaline batteries, and as an anti-arcing additive in high current electrical switches and contactors.

When doped with tin dioxide (SnO_2), thin films of indium-tin oxide (ITO) function as a transparent electrical conductor and can reflect a portion of the infrared spectrum. Thin films of ITO are used in LCD, OLED, and plasma flat panel displays, touch screens, electroluminescent lighting, low-E glass, and aircraft windshield and freezer case demisting. The major use of **IndiOx[®]** is in the manufacture of ITO sputtering targets for thin-film coating by compacting a mixture of **IndiOx[®]** and tin dioxide powders.

In the manufacture of sputtering targets, 90 weight percent **IndiOx[®]** is blended with 10 weight percent tin dioxide and compacted to a high density.

IndiOx[®] is available in two powder morphologies:

- Type A - Crystalline
The primary particles range from 0.4–1.0 μm in diameter; agglomerates up to approximately 30 μm .
- Type B - Fine
The primary particles range from 0.1–1.0 μm in diameter; agglomerates up to approximately 6 μm .



From One Engineer To Another[®]



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IndiOx[®] (Indium Oxide) Type A and Type B



Properties: Type A - Crystalline

Chemical Formula	In ₂ O ₃
Molecular Weight	277.64
General Description	Bright yellow powder
Uses	• Manufacturing of ITO sputtering targets and evaporation charges • Coloring ceramics and glasses
Purity Grades Available	4N (99.99%), 5N (99.999%)
Solubility	Insoluble in water and alcohol
Theoretical Indium Percentage	82.7
Minimum Indium Percentage	81.5
Nominal Indium Percentage	82.4 ± 0.9
d90 Particle Size Distribution	14.0–38.0
d50 Particle Size Distribution	6.0–23.0
d10 Particle Size Distribution	1.7–10.3
BET m ² /g (typical)	0.424

Properties: Type B - Fine

Chemical Formula	In ₂ O ₃
Molecular Weight	277.64
General Description	Bright yellow powder
Uses	• Manufacturing of ITO sputtering targets and evaporation charges • Coloring ceramics and glasses
Purity Grades Available	4N (99.99%), 5N (99.999%)
Solubility	Insoluble in water and alcohol
Theoretical Indium Percentage	82.7
Minimum Indium Percentage	81.1
Nominal Indium Percentage	82.3 ± 1.2
d90 Particle Size Distribution	2.1–4.3
d50 Particle Size Distribution	1.1–2.6
d10 Particle Size Distribution	0.7–1.1
BET m ² /g (typical)	10.6

Product Packaging

- Our powder is securely packaged to avoid contamination during shipment, and we use a variety of container sizes to ship.
- Containers can hold from 0.1–50kg of product per container.
- Containers available include wide-mouth plastic jars and pails, as well as plastic and steel drums.
- Custom packaging is available on request.

Storage and Shelf Life

IndiOx[®] should be stored at room temperature and the container kept tightly sealed. IndiOx[®] has a shelf life of 12 months.

Safety Data Sheets

The SDS for this product can be found online at <http://www.indium.com/sds>

Indium Corporation is the leading global supplier of bulk indium, high-purity indium, indium fabrications, alloys, and compounds. IndiOx[®] is produced in high volume utilizing state-of-the-art SPC-controlled chemical processing equipment. This, coupled with rigorous quality standards and advanced analytical instrumentation such as ICPMS, ensures consistent product quality.

Technical Support

Indium Corporation's internationally experienced engineering team provides in-depth technical assistance to our customers.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

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