

Indium Tin Oxide (ITO) Coated Glass Slides

Techinstro sell ITO Coated Glass, excellent quality with the finest transparency at lowest price around the world you can compare it. Available in various sizes and bulk quantity.

Description

Techinstro ITO coated glass slides are available in a variety of resistivity (10 – 20 Ohms) in five different sizes; 25x 75 mm rectangular and 25 x 25 mm square as well as custom sizes. These products are suitable for numerous applications including:

- Conductivity Measurements
- Film or Layer Casting on ITO
- Optical Devices/Liquid Crystal Displays (LCDs)
- Organic Light Emitting Diodes (OLEDs)
- Electroluminescent (EL) Devices
- Photochromic Devices
- DNA Immobilization and Detection
- Sensors/Biosensors
- Photovoltaic Devices (Organic and Inorganic)
- Solar cell application
- EMI & RFI shielding
- Electrodes for LCD and LCOS sensors and displays
- Touch panels
- Bio Chips
- Microelectronic assemblies
- Electrical layer in LCD technology
- Counter electrode for micro-displays
- Electrode on heater windows

ITO GLASS (Indium tin oxide) conductive glass belongs to the group of TCO (transparent conducting oxide) conductive glasses. An ITO glass has a property of low sheet resistance and high transmittance. It is mostly used in research and development. ITO coated glasses are widely used to organic/inorganic hetero junction solar cells, Schottky solar cells, CdTe solar cells and other various thin film solar cells as transparent semiconductor oxide electrode materials since their transparency and high conductivity.

Characteristics:

Dimensions: Square (4" x 4"), Rectangular (1" x 2") and Custom (Variable)

Resistivity : 10-20 Ohms

Slide Thickness: 1.1mm

Coating Thickness: 1500 – 2,000 Å

SKU Sizes: 10-Pack or 25 Pack

Packaging

Supplied in bundles with highly-protective layers between individual slides within a light protected and moisture free specially manufactured paper sheet.

Storage/Stability

This product should be stored at Room Temperature and Pressure and its stability is indefinite. It should be placed in a clean environment.

Precautions and Disclaimer:

These products are for R&D and industrial use only, not for drug, household, personal or other uses.

Ordering Information

Product Code	Description	Resistivity	Quantity
ITO-TIX001-25	ITO Coated Glass Slides, Square	10 Ohms	25 Pack
ITO- TIX001-50	ITO Coated Glass Slides, Square	10 Ohms	50Pack
ITO- TIX001-100	ITO Coated Glass Slides, Square	10 Ohms	100 Pack
ITO- TIX001-250	ITO Coated Glass Slides, Square	10 Ohms	250 Pack

ITO-TIX002-25	ITO Coated Glass Slides, Rectangular	10 Ohms	25 Pack
ITO- TIX002-50	ITO Coated Glass Slides, Rectangular	10 Ohms	50 Pack
ITO- TIX002-100	ITO Coated Glass Slides, Rectangular	10 Ohms	100 Pack
ITO- TIX002-250	ITO Coated Glass Slides, Rectangular	10 Ohms	250 Pack

ITO-TIX003-25	ITO Coated Glass Slides, Rectangular	10 Ohms	25 Pack
ITO-TIX003-50	ITO Coated Glass Slides, Rectangular	10 Ohms	50 Pack
ITO-TIX003-100	ITO Coated Glass Slides, Rectangular	10 Ohms	100 Pack
ITO-TIX003-250	ITO Coated Glass Slides, Rectangular	10 Ohms	250 Pack

ITO-TIX004-25	ITO Coated Glass Slides, Square	10 Ohms	25 Pack
ITO-TIX004-50	ITO Coated Glass Slides, Square	10 Ohms	50 Pack
ITO-TIX004-100	ITO Coated Glass Slides, Square	10 Ohms	100 Pack
ITO-TIX004-250	ITO Coated Glass Slides, Square	10 Ohms	250 Pack

ITO-TIX005-25	ITO Coated Glass Slides, Square	10 Ohms	25 Pack
ITO-TIX005-50	ITO Coated Glass Slides, Square	10 Ohms	50 Pack
ITO-TIX005-100	ITO Coated Glass Slides, Square	10 Ohms	100 Pack
ITO-TIX005-250	ITO Coated Glass Slides, Square	10 Ohms	250 Pack

ITO-TIXY001-25	ITO Coated Glass Slides, Square	20 Ohms	25 Pack
ITO-TIXY001-50	ITO Coated Glass Slides, Square	20 Ohms	50 Pack
ITO-TIXY001-100	ITO Coated Glass Slides, Square	20 Ohms	100 Pack
ITO-TIXY001-250	ITO Coated Glass Slides, Square	20 Ohms	250 Pack

ITO-TIXY002-25	ITO Coated Glass Slides, Square	20 Ohms	25 Pack
ITO-TIXY002-50	ITO Coated Glass Slides, Square	20 Ohms	50 Pack
ITO-TIXY002-100	ITO Coated Glass Slides, Square	20 Ohms	100 Pack
ITO-TIXY002-250	ITO Coated Glass Slides, Square	20 Ohms	250 Pack

ITO-TIXY003-25	ITO Coated Glass Slides, Square	20 Ohms	25 Pack
ITO-TIXY003-50	ITO Coated Glass Slides, Square	20 Ohms	50 Pack
ITO-TIXY003-100	ITO Coated Glass Slides, Square	20 Ohms	100 Pack
ITO-TIXY003-250	ITO Coated Glass Slides, Square	20 Ohms	250 Pack

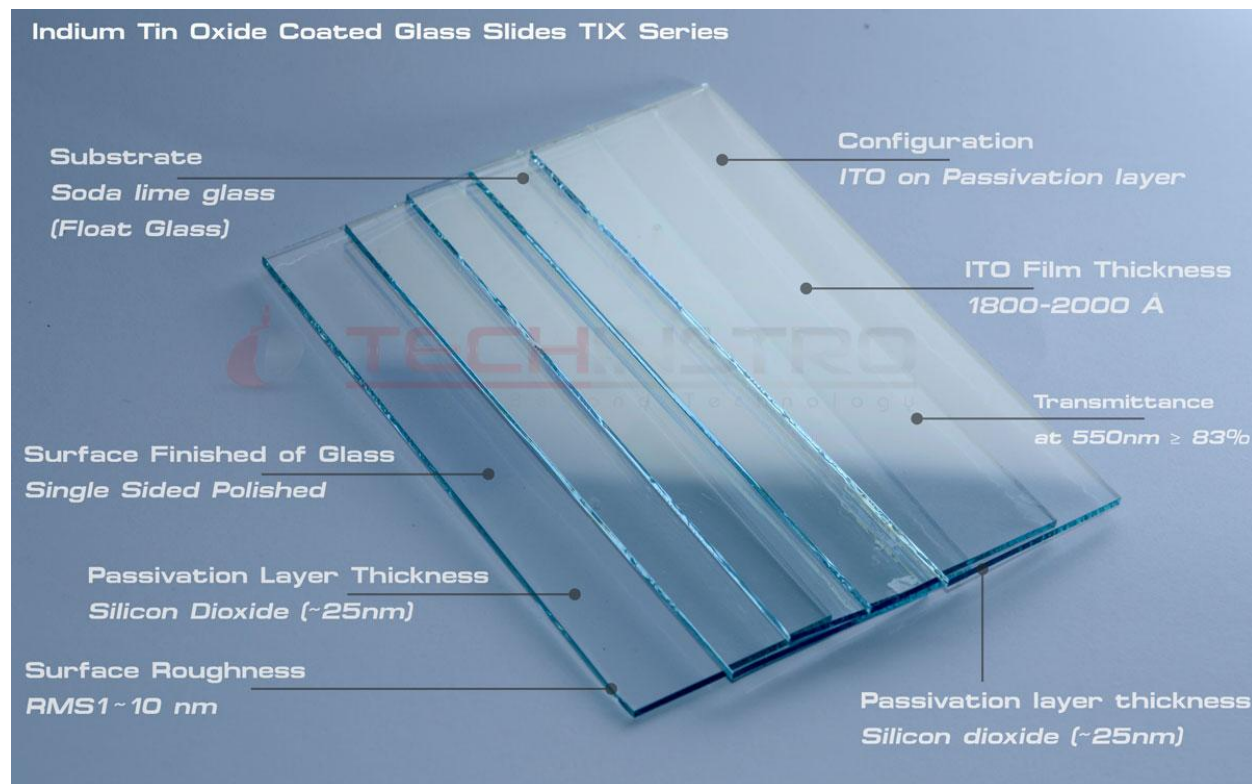
For custom sizes and bulk quantities please contact our customer service department at +91-712-2646456/ +91-9765849656

Cleaning and Handling of product

While cleaning of ITO slides, safety apparel and protection should be wear. The cleaning process should be done in fume hood to avoid contamination and maintain impurity free environment.

At the time of slides handling, researcher should use powder free non latex gloves, which should be handled carefully. While experimenting, if researched use substrate with a bare hands, then chances of contamination of coated surface due to finger oil is very high. Therefore it advised to use nylon or polyester gloves. Each slide is well packed in moisture free paper and placed in a way that, it should not rub each other.

During experimenting organic contaminant and dust particle present in the surrounding may adsorb on the surface of Indium tin oxide coating and hence cleaning the substrate become mandatory. Following is the cleaning method for ITO products.



Techinstro advised to use the following procedure for ITO layer cleaning.

- Sonication of the sample plays an important role in the cleaning process of substrate.
- Initially take acetone and mixed with the substrate, which is to be cleaned and sonicate approximately for 20 minute.
- Then take out of sample out of sonicator and make it dry.
- Take Isopropyl alcohol (IAP) along with ITO plate for re-sonication for 20 minute.
- Now take out the sample and placed in UV-ozone instrument to remove the remaining organic contaminant. It also increases the hydroxyl concentration due to oxidation at surfaces.
- Then placed substrate in vacuum oven to remove organic solvent used during cleaning process.

- After proper cleaning, placed sample in desiccator until it use.

Lead Attachment (Electrode Formation)/ Electrical Connections

To use the ITO coated glass plate as an electrode, it is necessary to attached leads to the conductive part of the ITO plate. There are various methods are available to make better electrical contact with conductive film and probes. The thickness of Indium tin oxide layer is mere hence it is important to attached probe at proper coating layer point. The contact between two is made by alligator clips in a way that the clips cut through coating or embed in it. It develops resistance between contacts and reduce current which is carried by conductive coatings. It also shows the drop in voltage.

In another method the probes are attached with the help of highly conductive silver paste or bus compositions. In this case, the silver bus is applied on the ITO surfaces (i.e. on edges) and dried over there. The surface becomes highly conductive with the ITO transparent layer. Then attach the alligator pins in a way that it should be penetrate silver bus and transparent conductor and make excellent contact in between. In this case, the silver bus material and ITO plate are both conductive; hence there is no high voltage and current drop.

An alternative method of electrode formation, copper conductive tape is used for the connection of probe and Indium Tin oxide coated plate. The conductive copper tape which is having lower thickness is place on a substrate and probe in a manner that it gets firmly attached with each other. This make development of mere resistance and current is passed without drop. The observed voltage drop is low.

In one of the method of attaching probe with conductive coatings with the help of silver bus composition or silver paste, but in this case, a fine wire of highly conductive metal such as copper, platinum, gold, silver etc. has been used. This method is known to be highly used method thorough out.

Electrical Characteristics Measurements

While selecting ITO coated glass plate, the resistivity is very important. The demand of resistivity is varies according to the application of end users. There are numbers of methods available to determined resistance.

As per the basic properties of electricity, resistance is a ration of voltage applied between two electrodes attached at the surface of thin conductive layer of the sample and current passes between them. In case of ITO sample, the resistance is known as surface resistance “Rs”.

The resistivity of ITO glass sample is measured by multimeter or 4 probe tester.

By using multimeter, there are following two ways to determine surface resistance.

- 1). The distance between two probe of multimeter should be 1 cm and placed probe at an angle of 45 degree to the surface so that you can get the exact resistivity of the substrate.
- 2). Cut ITO thin film in a square shape and coat the copper foil on upward and down side of the ITO film. Then place two probes on the copper foil and get reading for the sheet resistance.

The ITO coating is not uniform and isotropic due its morphological variability. At the time of experiment, error or misplacing of electrodes orientation on the surface of ITO substrate s also responsible for the resistance deviation. When alligator pins are attached to the substrate, there are chances of damaging thin film coating are higher. Hence it is advisable to touch surface lightly with the probe. This experiment also includes fringing effect, which is having some contact resistance.