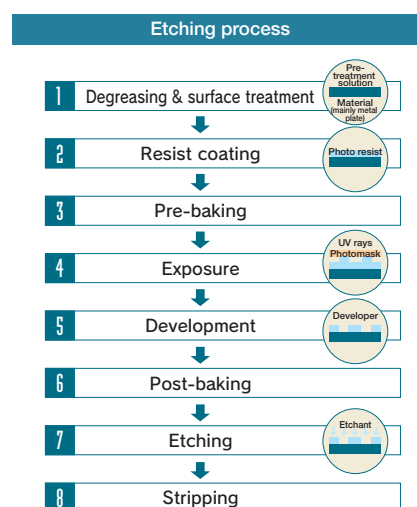


Etched Products



Applications to electronic products, plated ware, etc.

Etching is one of the methods to remove a portion of material by chemically corroding the metal surface. By using metal etching technology, Toppan also manufactures and sells a variety of products other than semiconductor-related products. This technology is extensively applied to products including electronic components, parts and jigs for machinery and gold plated ware.



● Display-related components

【 EMI shielding mesh for PDP 】

This is the etched product to shield electromagnetic waves generated from a plasma display panel (PDP). By directly laminating this mesh over a display panel, the glass substrate can be eliminated, contributing to weight reduction of the PDP. In addition, Toppan's electromagnetic interference (EMI) shielding mesh, on which very high resolution copper foil with $10\ \mu\text{m}$ line width is applied, shows excellent electromagnetic wave shielding properties. * $1\ \mu\text{m} = 1/1000$ millimeters

【 Metal mask for organic EL displays 】

This is the metal mask to be used for the deposit of RGB and electrodes on low molecular organic EL displays. High resolution patterns with $35\ \mu\text{m}$ minimum aperture (in the case of a $30\ \mu\text{m}$ thickness) in $\pm 4\ \mu\text{m}$ tolerance are formed on it. Production of the frames (tools for depositing) that are used to set masks on the depositing machine is also offered.

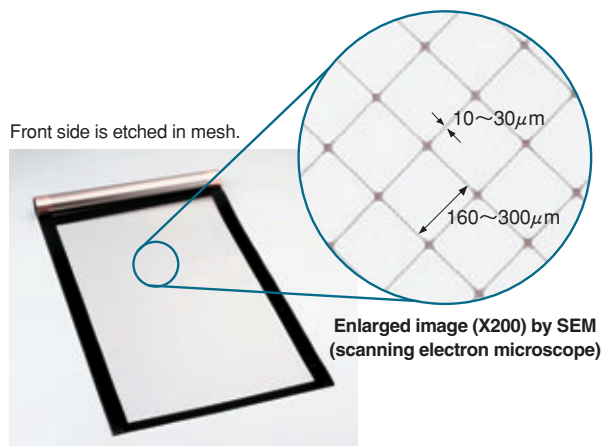
* Material: Invar (36% Ni, 64% Fe) material

● Electronic device-related components

【 Load beam for HDD 】

This is the stainless-made precision thin spring used to support a magnetic head for reading out recorded data and holds the distance of the magnetic head at a certain level. The minimum available thickness is $0.018\ \text{mm}$.

* Material: SUS 304



Load beams for HDD