



# CYANTEK CORPORATION

## PRE-MIXED ETCHANTS

### DESCRIPTION:

Cyantek has formulated pre-mixed solutions to etch various metals and metal alloys. Formulations are designed to etch Aluminum, Indium Tin Oxide, Iron Oxide, Trichromium Silicide, Silicon, and Silicon Dioxide.

### FEATURES:

- SPC controlled manufacturing.
- Stabilized pre-mixed formulations.
- Low mobile ion grade etchants formulated for precise definition and control of metal and metal alloy interconnections.
- All etchants are filtered to 0.1 micron to insure maximum particulate control.
- Surfactants may be added to the solution upon request to allow reduced surface tension and promote a more complete etch.

### PRODUCTS:

#### ALUMINUM ETCHANTS

AL-11  
AL-12  
AL-13

#### INDIUM TIN OXIDE ETCHANTS

LCE-10  
LCE-11  
LCE-12

#### IRON OXIDE ETCHANTS

FE12-CC11  
FE12-CC13  
FE12-CC15  
FE12-CC19

#### BUFFERED OXIDE ETCHANTS

BOE 6:1 Lodyne 895 angstroms/minute @ 21 degrees Centigrade  
BOE 7:1 Lodyne 770 angstroms/minute @ 21 degrees Centigrade  
BOE 10:1 Lodyne 545 angstroms/minute @ 21 degrees Centigrade  
BOE 15:1 Lodyne 370 angstroms/minute @ 21 degrees Centigrade

#### ALUMINUM ETCHANTS:

- AL-11 etches Aluminum at 9,500 Angstroms per minute. It is a medium speed etchant for use with pure Aluminum on Silicon.
- AL-12 etches Aluminum at 10,000 Angstroms per minute. It is a medium speed etchant for use with pure Aluminum and various alloys excluding Copper.
- AL-13 etches Aluminum at 12,000 Angstroms per minute. It is used with Aluminum-Copper alloys.

Note: Bath temperature for etch rate tests was maintained at 55 degrees Centigrade. Etch rates are illustrated in Figure 1. Recommended bath temperature is 40-60 degrees Centigrade.

#### INDIUM TIN OXIDE ETCHANTS:

These etchants are designed to etch Indium Tin Oxide films at various etch rates in liquid crystal display manufacturing.

#### LCE-10 LIQUID CRYSTAL DISPLAY ETCHANT

This LCD etchant contains Hydrochloric Acid and Nitric Acid.

#### LCE-11 LIQUID CRYSTAL DISPLAY ETCHANT

This LCD etchant has the same etch rate as LCE-10 but contains 70% less Hydrochloric Acid.

#### LCE-12 LIQUID CRYSTAL DISPLAY ETCHANT

This LCD etchant etches four times faster than LCE-10 and LCE-11.

#### IRON OXIDE ETCHANTS:

#### Fe12-CC11 IRON OXIDE PHOTOMASK ETCHANT

Iron Oxide etchant used primarily with thinner or softer Iron Oxide materials. Approximate etch rate is 40 Angstroms per second at 21 degrees Centigrade.

#### Fe12-CC13 IRON OXIDE PHOTOMASK ETCHANT

Iron Oxide etchant used primarily with thicker or harder Iron Oxide materials. Approximate etch rate is 40 Angstroms per second at 21 degrees Centigrade.

상온 = 1°C → 2당 1.31 Å ←  
30°C → 2.62 "  
40°C → 9.17 "  
50°C → 26.27 "