



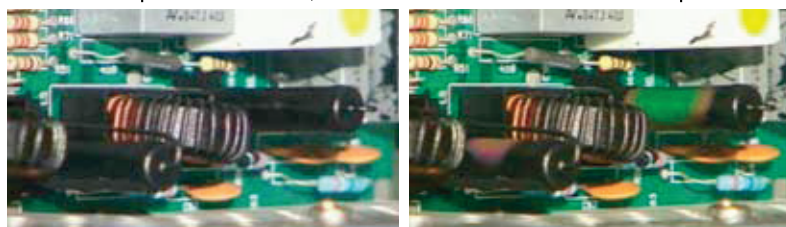
TLC-100™

THERMOCHROMIC LIQUID CRYSTAL KIT

The TLC-100 is a ThermoChromic Liquid Crystal kit designed for heat transfer studies and mapping temperature fields on electronic components or boards. The TLC-100 features thermoChromic liquid crystals (TLCs) which change color at a specified temperature starting at red, changing to green then blue. For electronics cooling applications, this provides the user accurate information about the location of hot spots on a device, their temperature and temperature gradient.

To map the temperature profile of a component or board, black ink is airbrushed on to the specimen.

Then, TLCs with a particular temperature range (depending on the application), are sprayed onto the measurement surface. Once the device is turned on and the components are brought to activation temperature, the liquid crystals will begin turning red, then into different colors, representing the temperature distribution of the component or board.



Before (left) and after (right) images of components on an electronic device sprayed with TLCs (center). The temperature map is shown as red, green and blue.

Black ink and TLCs are non-destructive and wash off with the aid of soap and water.

ThermoChromic liquid crystals are available in a variety of temperature ranges from 12°C to 120°C, each one with a particular bandwidth from 1°C to 20°C.

The TLC-100 Liquid Crystal Kit includes:

- An airbrush for coating the component or board's surface with black backing ink and liquid crystals.
- Air hose with couplings, valve for propellant cans and a 1/4" pipe adapter for use with to an air compressor.
- Two 30 ml bottles of ThermoChromic Liquid Crystals (temperature ranges specified when ordering).
- One 30 ml bottle of sprayable black backing ink for pre-treating the surface to be studied.
- Two glass jars, which attach to the airbrush, for dispensing ink and liquid crystal.
- Two portable and disposable, 255 g (11 oz.) cans of CFC-free air propellant.



The TLC-100 ThermoChromic Liquid Crystal Kit (above) for heat transfer studies and mapping of temperature fields on components.

Part Number Selection:

Part numbers are determined according to the temperature ranges of the liquid crystals that are required. To determine the correct part number for your order, select the temperature range you would like for the first bottle from the table on the right. Combine liquid crystal number to the part number prefix (TLC-100). Repeat this step for the second selection. For example, part number TLC-100-1-17 represents a kit which includes a bottle of liquid crystal that begins activating at 20°C and extends to 40°C. The second bottle of liquid crystal starts activating at 120°C and extends to 125°C.

FEATURES:

- » **Comprehensive Kit**
Everything required for thermal mapping, right out-of-the-box
- » **Wide Temperature Range**
TLCs available starting at 12°C to 120°C
- » **Versatile**
Can be used for measurements at both the component and board-level

TEMPERATURE RANGES AVAILABLE:

Start Temp. (°C)	Temp. Range (°C)	Liquid Crystal PN
20	20	1
30	5	2
40	5	3
42	20	4
40	20	5
50	5	6
60	5	7
60	10	8
70	5	9
70	10	10
80	5	11
80	10	12
90	5	13
100	5	14
100	14	15
110	5	16
120	5	17

For further technical information, please contact Advanced Thermal Solutions, Inc. at **1-781-769-2800** or **www.qats.com**