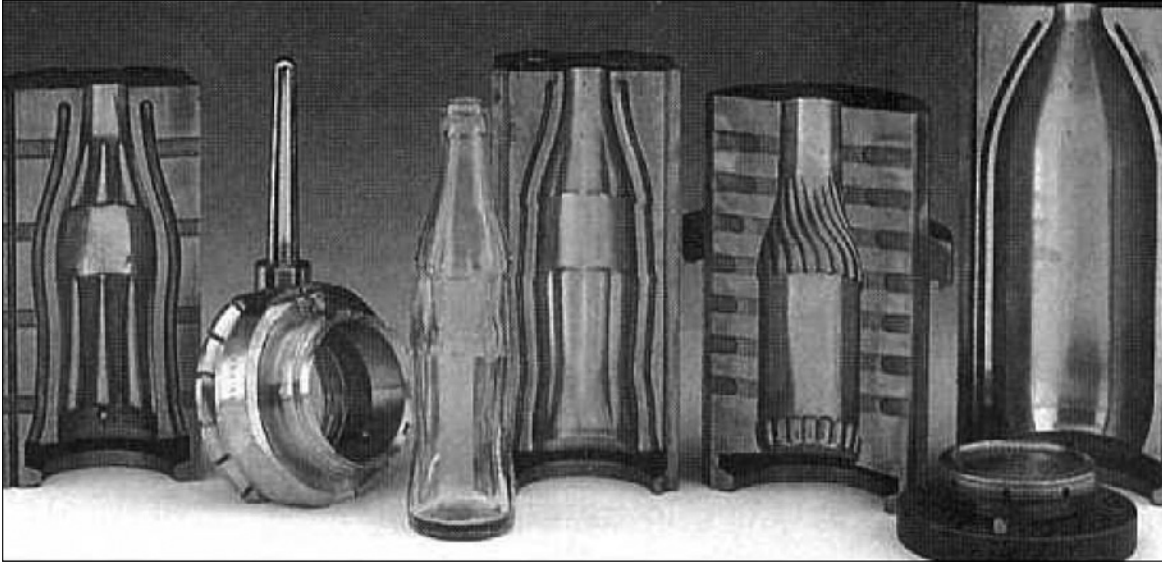


# Application Notes – AN103

## Glass Mold Temperature



The temperature of the mold (or plunger) used to make glass containers is very critical to the quality of the glass container. If the mold is not cooling properly, the container may exit the mold and not retain its shape. Or, if it is too cold, it will not be molded properly. The operators need to measure the molds to be sure the cooling is proceeding at the proper temperature.

Infrared thermometers are the ideal method to measure the temperature of the mold. They are fast and can measure small spots on the mold. You can actually profile the cooling from top to bottom of the mold. In addition, by using the linear outputs from the sensor, you can record (indicate) the temperature to watch the process for a period of time. There are some basic suggestions that need to be followed in order to obtain good temperature indications.

1. Do not measure new molds, New molds are usually very shiny and clean, This means the molds are quite reflective and have a low emissivity. As the molds are used they become dull and non-reflective and therefore, the emissivity becomes higher and quite repeatable. Actually, this is when the mold is doing the best job of cooling – and that is when the temperature should be measured.
2. Use an infrared thermometer with a short wavelength. Use instruments that operate at 1.6 or 2 to 2.6 microns because at this wavelength, the emissivity is the highest and changes in emissivity will have the least effect. In addition, consider using a two-color instrument which is even more accurate than a single wavelength instrument.
3. The instrument should have through-the-lens optics for easy aiming and a peak-picker circuit that picks the hot spots and ignores the cool surface of the closed mold. This provides a much clearer picture of the temperature inside the mold.
4. For short tests, air purges and cooling may not be necessary. However, for long tests, be sure to keep the sensor cool and the lens clean.

The Modline 5G, 56 Series, or Mirage 30 will measure the mold temperature. Contact Ircon Sales or Technical Service department and arrange for a demonstration on your glass container line.

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