Liquid-In-Glass Thermometer Separation – What You Need To Know

All Liquid-In-Glass Thermometers may be subject to separation; a disruption of the liquid column such that small amounts of liquid are not united with the rest of the liquid in the thermometer. Separation can occur for many reasons including improper handling and storage. To help prevent separation when not in use, thermometers should be stored at an angle of at least 15 degrees, preferably in a vertical position.

Even when stored and used properly, a Liquid-in-Glass Thermometer may separate. This does not mean that the thermometer is defective. Instead, there are a few methods that can be used to reunite the liquid in the column.

Thermometer Rack
Catalog No. EW-93860-00

Cooling Method A:

- Place a mixture of dry ice and alcohol in a beaker
- Place the bulb of the thermometer only into the beaker
- Hold until all liquid retreats into the bulb

Cooling Method A

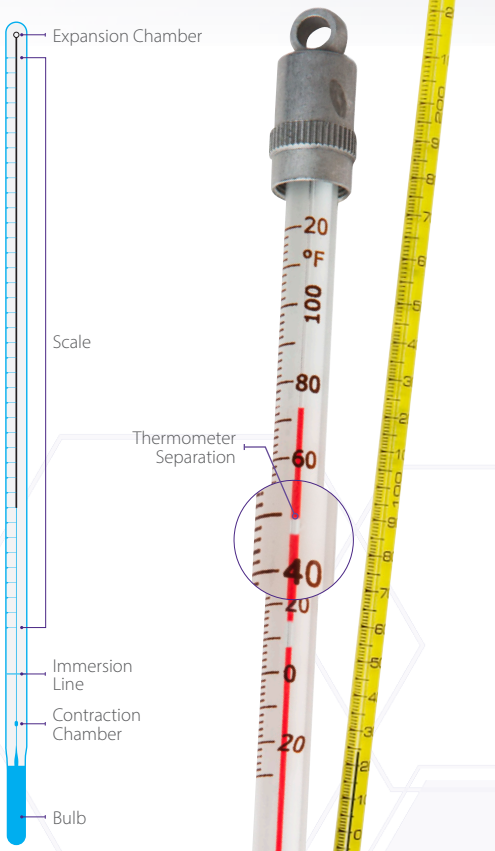
Heating Method B:

- Place water in a beaker
- Heat to a gentle boil
- Place the bulb of the thermometer only into the beaker
- Hold until all liquid collects at the top of the thermometer

Heating Method B

Heating Method C:

- Use extreme caution
- Light Bunsen burner to create a soft yellow flame. If you see a blue flame lower the gas input
- Carefully move bulb of the thermometer into and out of the flame. Do not hold in the flame for any period of time
- The liquid will expand into the expansion chamber. Be sure not to fill the expansion chamber more than ¾ full



Non-PFA Coated

PFA Coated

The key to successful reunification is to determine which method is best for the thermometer you own. Below is a useful reference guide:

Reunification Matrix

Temperature Range	If Thermometer Has/Is				Reuniting Method Recommended	
	Expansion Chamber	Contraction Chamber	PFA Coating*	Longer than 14"	Cooling	Heating
Above -10°C (14°F) and below 110°C (230°F)	X	X	X		A	C
	X		X			C
	X	X			A	C
	X					C
Above -10°C (14°F) and below 150°C (302°F)	X	X	X		A	C
	X		X			C
	X	X			A	C
	X					C
Above -10°C (14°F) and below 260°C (500°F)	X	X	X		A	C
	X		X			C
	X	X			A	C
	X					C
	X			X		C
Below -10°C (15°F)	X	X	X		A	B
	X		X			B
	X	X			A	B
	X					B

*PFA Coated thermometers have a thin layer around the thermometer with a softer feel than non-PFA coated thermometers

Cole Parmer®

www.coleparmer.com
Telephone: 1-800-323-4340
Email: sales@coleparmer.com

CO-01050-RevA