

TRIZMA®
Electrode Specifications
Optimum pH Range: 0-12
Temperature Range: -5° to 80°C

Product No.	Description
	Bulbs & Stem Diameter: 8 mm Stem Length: 55 mm Overall Length: 145 mm Connector Type:
E 4503	Ferrule-pin
E 6009	BNC Coaxial
E 6134	Radiometer (After 1975)
E 6259	Combination Belling-Lee Coaxial
G 6141	Guard for 55 mm stem length pH electrode. Removable plastic guard that protects the glass bulb from impact during use.
	Bulbs & Stem Diameter: 6 mm Stem Length: 110 mm Overall Length: 205 mm Connector Type:
E 4878	Ferrule-pin
E 5634	BNC Coaxial
E 5759	Radiometer (After 1975)
E 5884	Combination Belling-Lee Coaxial
G 6391	Guard for 110 mm stem length pH electrode. Removable plastic guard that protects the glass bulb from impact during use.
	Bulbs & Stem Diameter: 8 mm Stem Length: 115 mm Overall Length: 205 mm Connector Type:
E 4753	Ferrule-pin
E 6384	BNC Coaxial
E 6509	Radiometer (After 1975)
E 6634	Combination Belling-Lee Coaxial
G 6266	Guard for 115 mm stem length pH electrode. Removable plastic guard that protects the glass bulb from impact during use.
	Bulbs & Stem Diameter: 4 mm Stem Length: 130 mm Overall Length: 225 mm Connector Type:
E 5003	Ferrule-pin
E 5259	BNC Coaxial
E 5384	Radiometer (After 1975)
E 5509	Combination Belling-Lee Coaxial
G 60116	Guard for 130 mm stem length pH electrode. Removable plastic guard that protects the glass bulb from impact during use.

Each electrode is supplied with a 30-inch lead and a choice of four connectors. Other connectors and adapters are usually available on a special-order basis. Call SIGMA for other cable lengths, connectors, or adaptors that you may need.

Sigma warrants that its products conform to the information contained in this and other Sigma publications. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

TRIZMA®

GLASS/CALOMEL COMBINATION ELECTRODES

Specifically designed
for use with

TRIS
tris(hydroxymethyl)aminomethane
SOLUTIONS

Reduces or eliminates pH errors caused by use
of common electrodes with TRIS Solutions

SIGMA GUARANTEE

SIGMA pH Electrodes are guaranteed for one year. If a SIGMA electrode fails within the first year from date of shipment for any reason other than misuse, contact SIGMA for repair or replacement at no charge.

SIGMA® 
CHEMICAL COMPANY
P.O. BOX 14508, ST. LOUIS, MO 63178 USA

TO PLACE AN ORDER TOLL FREE: Telephone: USA/Canada 1-800-325-3010 Outside USA/Canada (Call Collect) 314-771-5750 FAX: USA/Canada 1-800-325-5052
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ELECTRODE INSTRUCTIONS

- (1) Wet entire outside of electrode, except the cap, in tap water. Carefully remove the lower plastic sleeve. (This lower sleeve is used only for storage and shipping.)
- (2) Clean the wick area by wiping several times with a wet paper towel.
- (3) Slide upper rubber sleeve down from the fill-hole and remove KCl to just below the fill-hole. NOTE: The rubber sleeve should be pushed down and not twisted. Leave the hole exposed during use.
- (4) For first time usage or after long storage, soak the lower end of the electrode (including the wick) in tap water for 10 minutes. This will allow the wick junction to commence flowing.
- (5) If air bubbles are present in the bulb area, shake downwards until the bulb is full of solution.
- (6) Thoroughly rinse the electrode tip with distilled water.
- (7) Next insert electrode tip into a buffer of known pH close to the pH of the sample to be measured.
- (8) Adjust control on pH meter until meter reads the value of the buffer used.
- (9) Thoroughly rinse the electrode with distilled water; then insert electrode into solution to be tested. NOTE: The electrode tip should be rinsed with distilled water after each measurement to prevent contamination of the next sample.

CARE AND MAINTENANCE

- (1) FILLING SOLUTION - Use only KCl filling solution (4M KCl saturated). CAUTION: DO NOT let reference solution go below Calomel Internal. This will damage the electrode.
- (2) Clean the wick and bulb area thoroughly before using the electrode. Improper cleaning may produce drift or slow response.
- (3) For storage, the electrode may be filled with KCl solution to just below the filling hole. Then replace the rubber sleeve on the electrode. Fill the soaker bottle with the filling solution (4M KCl) and insert electrode. The electrode should be stored in an upright (vertical) position.

BASIC ELECTRODE FACTS

- (1) These electrodes are manufactured with a general purpose glass formula that features high chemical stability, excellent mechanical strength, low sodium ion error and very low impedance. The low impedance allows low temperature work without requiring a high impedance pH meter. These electrodes are designed for pH meters having a zero potential near pH 7.
- (2) The calomel combination electrode is an excellent electrode for use with TRIS, eliminating most errors frequently associated with pH measurements of Tris solutions. It is also an excellent electrode for clinical laboratory tests or whenever samples contain protein and heavy metals that react with Ag-AgCl reference cells. The electrode has a temperature range of 0° to 80°C.