

## ELECTRODES

In selecting the application site for any style of electrode, care should be taken that:

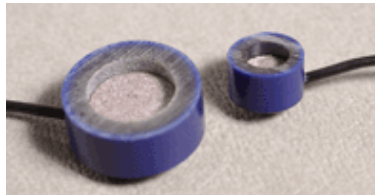
- 1) Electrode site is dry and free of excessive hair.
- 2) Electrode is not placed over scar tissue or on an area of established erythema or with a lesion of any kind.
- 3) Skin is properly prepared. (Prepare the skin at the electrode site. Use the ELPAD to lightly abrade the skin surface. Use a brisk dry rub to prepare the application site. Avoid excessive abrasion of the skin surface.)

### EL250 Series Reusable Ag-AgCl Electrodes

EL250 Series reusable electrodes incorporate a variety of features which improve biopotential recordings.

- Non-polarizable
- Sintered to increase electrode/electrolyte contact area
- Does not require chloriding
- Reusable via resurfacing
- High stability recordings, to DC, when used with chloride salt gel electrolyte
- Electrolyte gel cavity reduces artifact due to electrolyte/electrode motion and minimizes electrolyte dissipation/drying over long term recordings

Surface biopotentials can be accurately and clearly transmitted with silver-silver chloride electrodes. EL250 Series reusable electrodes are permanently connected to 1-meter leads and terminate in standard 1.5 mm female Touchproof sockets for direct connection to the SS1L shielded electrode lead adapter (MP3x System), or the MEC110C (MP160/150 System). Use shielded electrode leads for minimal interference. The unshielded electrode leads work best as ground electrodes. Typically, one biopotential input requires two shielded electrodes for signal inputs and one unshielded electrode for ground.



- EL254** Ag-AgCl Unshielded Electrode, 7.2 mm diameter housing, 4 mm contact area, includes 1 m lead terminated with a 1.5 mm female Touchproof socket for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System).
- EL254S** Ag-AgCl Shielded Electrode, 7.2 mm diameter housing, 4 mm contact area, includes 1 meter lead terminated with two 1.5 mm female Touchproof sockets for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System). The gray lead plug is for the electrode contact; the black lead pin plug is for the lead shield.
- EL258** Ag-AgCl Unshielded Electrode, 12.5 mm diameter housing, 8 mm contact area, includes 1 meter lead terminated with a 1.5 mm female Touchproof socket for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System).
- EL258S** Ag-AgCl Shielded Electrode, 12.5 mm diameter housing, 8 mm contact area, includes 1 meter lead terminated with two 1.5 mm female Touchproof sockets for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System). The gray lead plug is for the electrode contact; the black lead pin plug is for the lead shield.
- EL258H** Features a 2 mm gel injection hole, useful for EEG monitoring; use as both recording and reference electrodes. 12.5 mm diameter housing, 8 mm contact area, 1 m lead terminated with 1.5 mm female Touchproof socket for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System).

EL250 Series Radiotranslucent Ag-AgCl Recording Electrodes (Animals Only)

**MRI Use:** MR Conditional (tested to 9T)

**Condition:** For use with animals only, due to possible heating hazards associated with incomplete filling of gel reservoir with electrode gel.

**EL254RT/258RT Components:**

Electrode: Ag/AgCl      Lead wire: Carbon  
Enclosure: Epoxy      Wire insulation: PVC

**EL254RT** Silver-silver chloride (Ag-AgCl) electrodes provide accurate and clear transmission of surface biopotentials. Reusable electrodes are permanently connected to robust and pliable leadwires. The leadwires terminate in standard 1.5 mm Touchproof connectors for interfacing to 100C series Biopotential modules or extension cables. 7.2 mm diameter housing, 4 mm contact area, includes 1.5 m lead terminated with a 1.5 mm female Touchproof socket for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System).

**EL258RT** As described above for EL254RT but with larger dimensions. 12.5 mm diameter housing, 8 mm contact area, includes 1.5 m lead terminated with 1.5 mm female Touchproof socket for connection to the SS1L (MP3x System), or the MEC110C (MP160/150 System).

✓ All EL250 Series electrodes require adhesive disks (ADD200 series) and recording gel (GEL1 or the preferred recording gel). See the **Electrode Accessories** section for further description.

Instructions for EL250 Series Electrodes

- 1) Store electrodes in clean, dry area.
- 2) After use, clean electrode with cold to tepid water
  - a) DO NOT use hot water.
  - b) Cotton swabs are suggested.
- 3) The electrodes should be completely dry before returning to storage.
- 4) DO NOT allow the electrodes to come in contact with each other during storage (adverse reaction could take place).
  - Electrodes may form a brown coating if they have not been used regularly. This should be removed by gently polishing the surface of the electrode element with non-metallic material. Wiping with mild ammonium hydroxide will also remove this coating. Rinse with water and store the electrode in a clean, dry container.
- 5) Remove an appropriate size electrode washer (ADD204, ADD208, or ADD212) from its waxed paper strip and carefully apply the washer to the electrode so the center hole of the washer is directly over the electrode cavity.
- 6) Fill the cavity with electrode gel (GEL100). No air bubbles should be present in the cavity.
- 7) Remove the white backing from the washer to expose the second adhesive side.
- 8) Place electrode on prepared skin area and smooth the washer into place.
- 9) Apply a few drops of electrode gel to fingertip and rub the exposed side of the adhesive washer (around the electrode) to rid its surface of adhesive quality.

**IMPORTANT:** GEL should immediately be cleaned off the electrodes after each use. Dried gel will act as an insulator decreasing electrical contact with the skin, and the Ag-AgCl electrode disk could degrade quickly with time because of the porous electrode surface.

To clean the electrodes

1. Wet a cotton swab or toothbrush with water and remove the electrode gel.

- If needed, use Hydrogen Peroxide solution (2-3%) to brighten electrode surface (optional) or to sterilize the electrode; do not place the electrode in solution, but rather use a cotton swab or toothbrush.
2. Always dry the electrodes after cleaning.
  3. If a dark residue remains after the above cleaning methods are used, then a cleaner with pumice can be used on the wetted cotton swab or toothbrush.

**Warning!** Use of a Waterpik<sup>®</sup> or similar jet will drastically shorten the life of these electrodes and is not recommended.