

Disinfection

This procedure is one of the methods endorsed by the Board of Trustees of the American Society of Electroneurodiagnostic Technologies (Am. J. EEG Technol. 35: 3-36, 1995). The sodium hypochlorite procedure is the simplest, safest and most economical for "high level disinfection." EEG Info electrodes are unaffected by dozens of disinfections using this method.

1. Purchase 5.25% sodium hypochlorite (NaOCl) as household Clorox or pure bleach. There are many bleach solutions containing detergents and other additives. Obtain only pure bleach containing 5.25% NaOCl and water.

2. This bleach solution can be used as a **high level disinfectant** for EEG Info electrodes using a 1:50 (1000 ppm) bleach dilution of 5.25% sodium hypochlorite for a period of twenty minutes when mixed fresh and used within 24 hours.

3. When electrodes have been **soaked for twenty minutes**, remove from the diluted (1000 ppm) bleach solution, rinse the electrodes off using a deionized or distilled water spray bottle and immerse them in normal saline solution. The electrodes will return to very acceptable Noise and DC Offset Voltage levels in 90 minutes, i.e., suitable for use. Do not soak electrodes in the diluted bleach solution for extended periods of time as the oxygen will cause a blackening of the electrode pellet. This does not affect electrode performance.

Please consult with EEG Info if you wish to use other disinfection procedures.

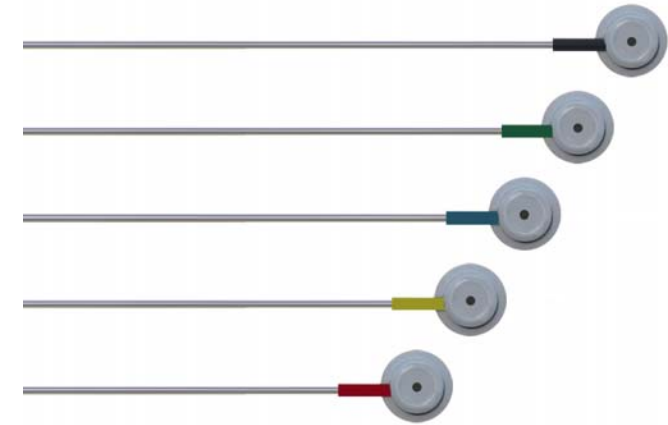
EEG Info Electrodes and Standards

EEG Info sintered silver/silver chloride (Ag/AgCl) electrodes are made from very finely powdered high purity silver and silver chloride. They are mixed in a specific ratio and compacted into the electrode body at very high pressures. The resulting pellet is relatively thick (0.7mm to 1.0mm) and never needs to be rechloridized because it is a homogenous mixture. This is unlike electrodeposited Ag/AgCl which is very thin and needs renewal after several applications.

The only American standard for electrodes is ANSI EC-12 for "Pregelled ECG Disposable Electrodes." The electrical performance requirements, test procedures and test circuitry are set forth in this standard. Specific electrical tests are AC Impedance, DC Offset Voltage, Combined Offset Instability and Internal Noise, Defibrillation Overload Recovery and Bias Current Tolerance.

EEG Info electrodes test very significantly better than the specifications for each of these tests. All EEG Info electrodes are 100% tested for Continuity and DC Offset Voltage.

Sintered Silver/Silver Chloride Electrodes



Care and Use Instructions

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Instructions for Use

Sintered silver/silver chloride electrodes have superior performance characteristics for biopotential measurements. Correct application and cleaning is essential in achieving quality performance and long life.

When using new electrodes, or electrodes left dry for several weeks, provide **initial stabilization** by soaking the electrodes in a 1% saline solution for at least 30 minutes. Reagent-grade sodium chloride is available from EEG Info. Mix one packet of sodium chloride with one gallon of distilled water. **ONLY USE DISTILLED WATER OR PURE SALINE SOLUTION.** If sintered electrodes are dry for 3-7 days they should be reactivated.

The skin should be clean and dry where the electrodes will be attached. The cavity and surface of the electrode should also be clean and dry before applying EEG paste. Use sufficient paste to completely fill and slightly over-fill the cavity. Press down firmly to attach and seal the electrode. Suitable gels and pastes include Ten20 and NuPrep, as well as Eleflex and ECG2. For best results abrade skin gently with NuPrep and then apply EEG paste to the skin before attaching electrode.

Cleaning Electrodes

Immediately after removing electrodes, wipe off excess paste and clean by rinsing or briefly soaking in distilled or deionized water. **Never use tap water or bottled drinking water.** Do not let the old paste dry or harden in the cavity. When paste is removed, leave electrodes clean and dry for their next use. Wrapping electrodes in a cloth or tissue

prevents oxidation of the silver. Please be advised that leaving them in the distilled water will remove the salt from the electrodes and will most likely deactivate them.

Other Cleaning Tips

If electrodes are used only occasionally, a brown coating may form over the sensing element. This can be removed by wiping with a mild ammonium hydroxide solution or by lightly abrading with a very thin strip of 200 mesh emery cloth.

Electrodes will turn black if continuously exposed to bright light. The finely divided silver in the electrode pellet oxidizes to silver oxide (black) much like a photographic negative. The electrode will perform normally even when the appearance is almost jet black. Cleaning by abrasion to remove the oxide layer is appropriate however. Store electrodes, when not in use, in a dark drawer or closed opaque box.

Electrodes can be permanently damaged or poisoned when only small amounts of bromide, sulfide and some other metal ions are present. Do not expose the electrodes to tap water, EEG pastes containing abrasive clays, miscellaneous soap solutions or abrasive cleaners.

Why Use a Sintered Silver/Silver Chloride Electrode?

Sintered silver/silver chloride is recognized worldwide as a stable, low noise reference electrode. It is reversible, which means it can pass an electric current without changing the chemical environment in the immediate vicinity of the electrode. This is not true of metal electrodes. This reversibility requires a soluble chloride containing electrolyte gel or paste such as Ten20 EEG paste.

Because the sintered silver/silver chloride electrodes are thermodynamically reversible, they exhibit low noise and theoretically zero electrode polarization impedance effects. They have much lower DC offset potentials than metal electrodes and provide excellent low frequency response.

EEG Info electrodes with plastic body for skin attachment are less prone to motion artifact than metal electrodes in direct skin contact. This is important where subjects are moving as during Neurofeedback sessions.

All EEG Info electrodes are made in the USA.