**Ref. SERSMIX**

**Surface Enhanced Raman Spectroscopy Screen-Printed Electrodes** *(Silver, Gold BT and Copper electrodes)*

Surface-enhanced Raman Spectroscopy (SERS) is a surface-sensitive technique that enhances Raman scattering by molecules adsorbed on rough metal surfaces. The enhancement factor is so powerful that the technique may detect single molecules. Electrochemical SERS using Screen-Printed Electrodes in order to generate SERS in solution, have shown outstanding properties for SERS. Screen-Printed Electrodes (SPEs) of various materials such as Silver, Gold, Copper… make the technique more sensitive and cost effective in comparison with other SERS substrates.

*Ceramic substrate: L33 x W10 x H0.5 mm*

*Electric contacts: Silver*

The electrochemical cell consists of:

Ref. 010
- **Working electrode:** Silver
- **Counter electrode:** Carbon
- **Reference electrode:** Silver

Ref. 220BT
- **Working electrode:** Gold BT
- **Counter electrode:** Gold BT
- **Reference electrode:** Silver

Ref. CU10
- **Working electrode:** Copper
- **Counter electrode:** Carbon
- **Reference electrode:** Silver

Ref. SERSMIX is commercialised in 50 units packs mixing 20 units of refs. 010 and 220BT, and 10 units of CU10. They should be stored at room temperature, protected from light in a dry place.

Also, specific connectors that act as an interface between the screen-printed electrode and any potentiostat (refs. DSC, CAC) and other accessories are available at [DropSens](https://www.dropssens.com).
250 ppb 4-mercaptopyridine in 0.1M KCl over screen-printed silver electrode (ref. 010). Experimental conditions:
Cyclic Voltammogram $E_{0}= 0.3V$, $E_{\text{vtx1}}= -0.4V$, $E_{\text{vtx2}}= 0.3V$, Step potential= 2 mV, Scan rate= 50 mV/s;
Raman’s experiment parameters: Integration time 2 s, Laser power= 0.6 V.

50 ppb Malachite Green over thick-film copper electrode (ref. CU10). Experimental conditions:
Cyclic Voltammogram $E_{0}= 0.3V$, $E_{\text{vtx1}}= -0.9V$, $E_{\text{vtx2}}= 0.3V$, Step potential= 2 mV, Scan rate= 25 mV/s;
Raman’s experiment parameters: Integration time 8 s, Laser power= 0.35 V.