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Polyester-Based Screen-Printed Electrodes (SPEs)

Polyester-based Screen-Printed Electrodes (SPEs) represent a breakthrough in electrochemical sensing technology. These versatile tools are fabricated through advanced screen-printing methods on flexible, high-resistance polyester substrates, combining miniaturization, affordability, and performance.

KEY FEATURES

Electrode Components:

Working Electrode (WE):	Graphite
Reference Electrode (RE):	Silver
Counter Electrode (CE):	Graphite
Insulating Layer:	Dielectric paste

Design Specifications:

Standard Dimensions:	28 × 12 mm
Substrate Thickness:	125 µm
WE Surface Area:	7 mm^2
Sample Volume Range:	20–200 µL

Performance Highlights:

High intra-electrode repeatability (RSD% = 2%).
Consistent inter-electrode reproducibility (RSD% = 4%).
Reliable cyclic voltammetry responses across varying scan rates.

CUSTOMIZATION

Polyester SPEs offer high design flexibility and can be tailored to specific needs. It is possible to:

- **Modify the dimensions** of the electrodes to suit particular applications
- **Use different conductive inks** (e.g., gold, platinum, or modified carbon) to enhance sensitivity
- **Customize the structure of the electrochemical cell**, including additional electrodes or specific configurations

This customization makes them particularly suitable for developing bespoke solutions across various application fields.

APPLICATIONS

Polyester-based SPEs have broad applicability in:

BIOMEDICAL DIAGNOSTICS:
For rapid detection of biomarkers and metabolites

ENVIRONMENTAL MONITORING:
Assessing water quality and pollutant levels

MATERIAL TESTING:
Evaluating chemical properties of new materials

DEFENSE AND SECURITY:
Detecting chemical and warfare agents

ADVANTAGES

- **Miniaturization:** Compact design allows integration into portable sensing devices
- **Cost-Effective:** Affordable production and disposable, minimizing contamination risks
- **Low Reagent Consumption:** Optimized for small sample volumes
- **Versatility:** Adaptable for a wide range of electrochemical applications

Why choose Polyester-Based SPEs?

These electrodes excel in providing robust, repeatable, and accurate measurements, making them an ideal choice for researchers and industries seeking reliable sensing solutions.

For more information, contact us!

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