Pin-Hole Free Conductive Ink Printing for Printed Electronics

NORCOP has developed a wide range of transparent Atmospheric Plasma-Induced Nano-Coatings (APINCs) dedicated to the Printed Electronics market which are able to push forward your printing performances.

Our nano-coatings allow us to obtain Surface Energies varying from 20 to 70 mN/m on different polymer substrates that can be fine-tuned to your specific ink's Surface Tension. Perfect ink spreading is coupled with enhanced adhesion to give reliable and reproducible results[1].

SPECIFICATIONS

- Compatible Substrates: PET and potentially PEN, PI, PC
- Substrate Thickness Range : 50 - 200µm
- SE[2] Range : 20 – 70mN/m
- Compatible Formats : Rolls up to 2000mm width or sheets (dimensions upon request)
- Printing Method Compatibility : Gravure, Flexo, Screen
  (Digital inkjet printing under development)
- Ink Compatibility : Organic solvent based, water-borne and solventless inorganic/organic inks
- AP-PECVD[3] Processing Speed : 20 – 70m/min
- Extended shelf-life (6-24 months, depending on coating chemistry)

TAILORED SURFACES

- Excellent Wetting
- Polar Function Selection
- Roughness Control

ENVIRONMENTALLY RESPONSIBLE TECHNOLOGY

- Non-polluting Processes
- Sustainable Materials
- No Solvents, No Waste, No Heat
- Very Low Carbon Footprint

LEGEND

[1] N, O, Si - based chemical functions

[2] Surface Energy

[3] Atmospheric Pressure – Plasma Enhanced Chemical Vapor Deposition

Surface customization for specific ink-PET combinations

At NORCOP we have the technology and the know-how to customize the Surface Energy of your preferred PET to make it compatible with the Surface Tension of the conductive and dielectric inks of your choice. (Fig 1)

Figure 1 : *Graph showing the 'Perfect Fit' between ink Surface Tension and polyester Surface Energy achieved by NORCOP's surface customization using our proprietary AP-PECVD technology.*

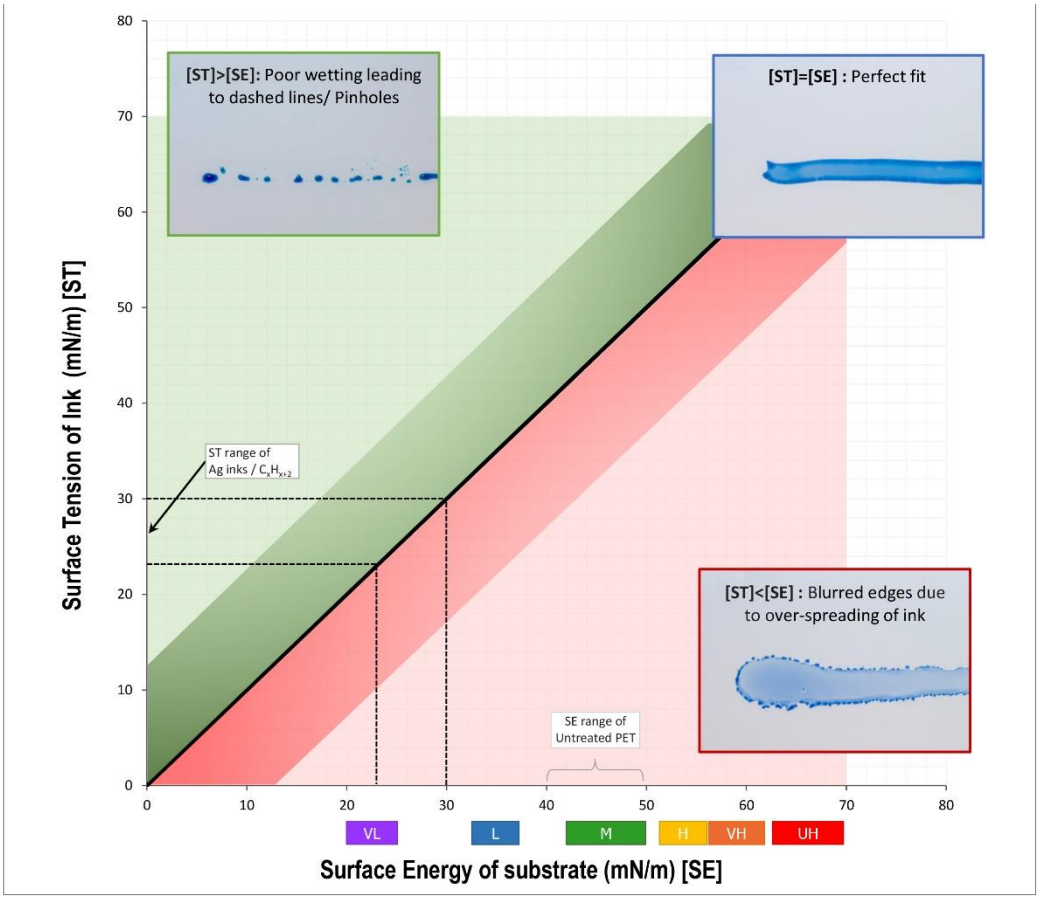

Table 1: *Comparative table showing solvent surface tensions of commonly used conductive and dielectric inks, together with NORCOP's obtainable Surface Energy Ranges*

Solvent Family	Ink Solvent Base	Ink ST (mN/m)
Saturated Hydrocarbons*	Tetradecane	27-31
Glycols**	Tripropylene Glycol Monomethyl Ether (TPM)	28
	Triethylene Glycol Monomethyl Ether (TGME)	30-34
	Diethylene Glycol Monomethyl Ether (DGME)	33-34
	Ethylene Glycol (EG)	46
Water	Water	72

Nano-Coating Series		Surface Energy Range (mN/m)
VL	Very Low	20-25
L	Low	33-38
M	Medium	42-50
H	High	51-56
VH	Very High	56-62
UH	Ultra High	64-70

Sources: *MERCK, ** **PV**NANOCELL

For more information on any of our products or services please visit us on the Web at: www.norcop.eu

15 Bis rue de la Sucharde
21800 Chevigny Saint Sauveur
France
Phone : +33 3 80 40 35 50
Email : info@norcop.eu

NORCOP
SURFACES & INTERFACES TECHNOLOGY