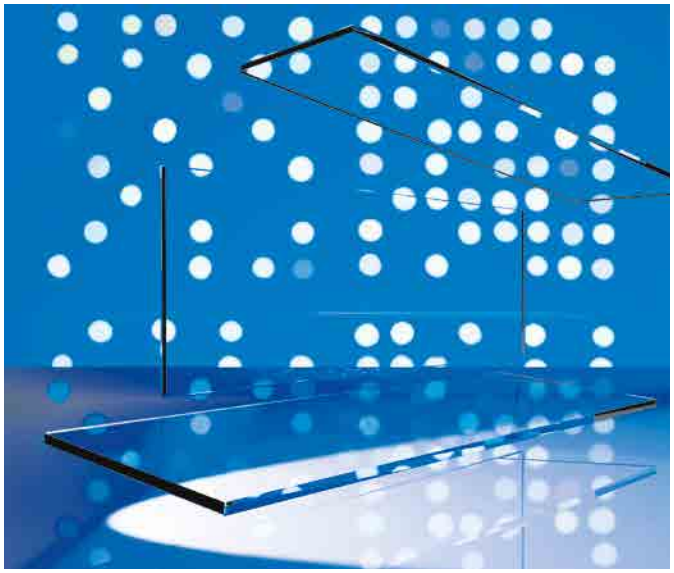
Aminosilane coating

NEXTERION® Slide A+



Introduction

Aminosilane-coated slides remain the most popular choice for printing PCR products, and long oligonucleotides, despite the emergence of innovative three-dimensional microarray surfaces, and other "active" surface chemistries, such as epoxysilane.

Aminosilane surfaces provide available amine groups for initial ionic attachment of the negatively charged phosphate groups in the DNA backbone. The density of the amino-groups on NEXTERION® Slide A+ remains constant over the entire surface of the slide and is adjusted to yield optimal binding.

Type of coating	Immobilization method	Typical probes	Ordering information			
			NEXTERION® product	Barcode option	Item number	Slides per pack
Aminosilane 2-D surface	Ionic interaction followed by cross-linking via an additional UV or baking step	• Long oligo-nucleotides • PCR products • BACs	Slide A+	None	1064875	25
				Laser	1064877	25

Key product features

- Printed slides have a long shelf life
- Compatible with a wide range of spotting buffers
- Coatings with uniform aminosilane density
- Regular spot uniformity and morphology

Typical applications

- ArrayCGH
- Transcriptional profiling
- SNP genotyping
- Splice variant detection
- DNA methylation profiling

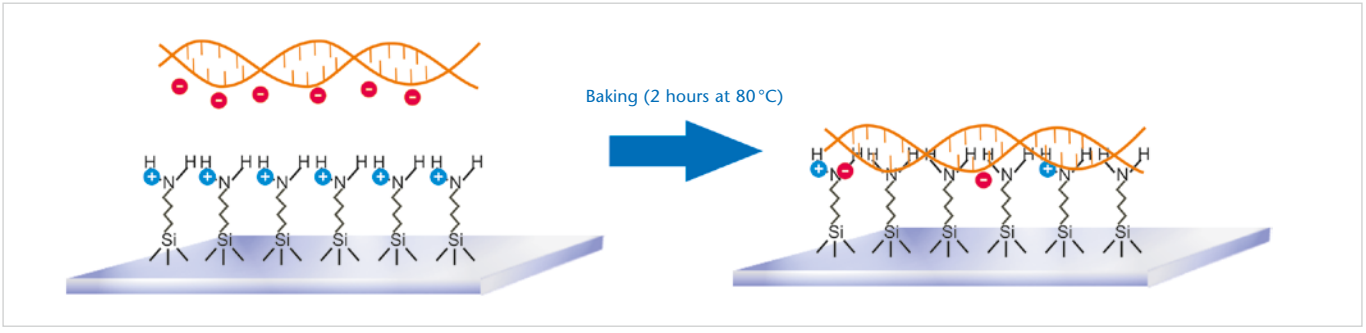
Suitable probe types

- BACs or PACs
- Oligonucleotides ≥ 40 mers
- PCR fragments
- cDNA

SCHOTT
glass made of ideas

Immobilization chemistry

NEXTERION® Slide A+ has a high concentration of primary amino-groups available at the surface. These groups become protonated and therefore positively charged when placed in contact with a near-neutral, aqueous solution. Negatively charged probe molecules, such as DNA, will initially form multiple ionic interactions with the positively charged amino surface coating. Additional amino-modifications of the nucleic acids are not required, but such modifications do not interfere with the immobilization. After spotting, the probes are covalently linked to the slide surface by either heating, or a brief exposure to ultraviolet (UV) light. Other types of negatively charged biomolecules may also be coupled to aminosilane surfaces.



Coatimg chemistry of NEXTERION® Slide A+

Product details

Reproducible results

SCHOTT slides are manufactured from a high quality, low intrinsic fluorescence borosilicate glass. The glass slides are cleaned and coated in a class-100 environmentally controlled clean room to ensure contamination and artifact-free surfaces. The aminosilane coating is applied using a unique and innovative method developed and optimized by SCHOTT, that allows the production of large lot sizes with excellent intra-lot, and inter-lot reproducibility. Each slide lot is tested using both physical and functional quality control checks. The density of the aminosilane groups in the coating remains uniform over the entire surface of the slides, and is optimized to maximise the DNA binding capacity. The surface hydrophobicity is tightly controlled to optimize the performance with both contact and non-contact microarray printers.

NEXTERION® Slide A+ is compatible with the most commonly used aminosilane protocols and a wide range of spotting buffers. This makes it easy to evaluate and switch to the NEXTERION® aminosilane slides from competitor slides.

Packaging and storage
NEXTERION® Slide A+ are packaged in specially developed compatible plastic boxes, and sealed under an inert atmosphere, to ensure the substrates have a long and stable shelf life. The slides are ready-to-use from the box, and are stable for up to 9 months when stored at room temperature in the sealed packaging.

Protocols
NEXTERION® Slide A+ protocols are available on the NEXTERION® website.

Format
NEXTERION® Slide A+ are available in packs of 25 slides with optional code 128 barcodes enabling automated sample tracking. The NEXTERION® A+ coating is also available in multi-well slide and microplate formats. For further information, refer to the section on "Multi-well formats".

Compatible reagents

Protocol step	Recommended NEXTERION® products	Alternatives	Additional information
Spotting	NEXTERION® Spot (1066029)	NEXTERION® Spot A HD (Composition can be provided)	**Recommended Spotting Concentrations:** Oligonucleotides 2–20 µM PCR Products 0.5–1 mg/mL **Recommended Spotting Conditions:** Constant 40–50% relative humidity at 20 to 25 °C
		25–50% DMSO	
		3x SSC 3x SSC containing	
		1.5 M betaine	
Blocking		NEXTERION® Block A Kit (Composition can be provided)	
Hybridization	NEXTERION® Hyb (1066075)	NEXTERION® Oligo Hyb (Composition can be provided) 3–5x SSC + 0.1% SDS	Add competitor DNA if appropriate

Distributed by:
Applied Microarrays (Dist), LLC.
7700 South River Parkway
Tempe, AZ 85284
USA
Phone +1 480-244-9395
Fax +1 480-775-6184
nexterion@appliedmicroarrays.com

www.appliedmicroarrays.com

Microarray Solutions
SCHOTT North America Inc.
5530 Shepherdsville Road
Louisville, KY 40228
USA

www.us.schott.com/nexterion

SCHOTT
glass made of ideas