



# **PolyAn functionalized Microarray Slides**

**User Manual &  
Product Information**  
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# General Information

## PRODUCT OVERVIEW

PolyAn offers a range of functionalized microarray slides for immobilisation of biomolecules, e.g. nucleic acids (DNA), proteins, peptides saccharides,...

The functionalized glass and polymer slides are produced in our clean-room facilities under rigorous quality control. Our slides are tested for low background, homogeneity and good immobilisation characteristics.

The following product families are available for your microarray application:

Substrate	Surface modification	Applications
Glass	2D-silanisation (Amino, Epoxy, activated Amino)	Cost-sensitive applications.
Glass	3D-MSE- functionalization (Amino, Carboxy, Epoxy, Aldehyde, NHS)	Demanding applications with high requirements for signal-to-noise ratio.
Polymer	3D-MSE- functionalization (Amino, Carboxy, Epoxy, Aldehyde, NHS)	Demanding applications with high signal-to-noise ratios. Polymer substrate without risk of splitting. Recommended for handling of hazardous materials. Injection-molded parts possible.

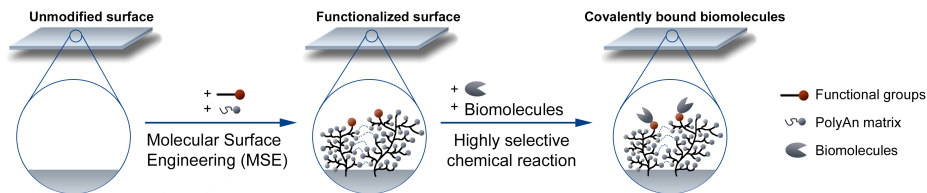
The slides are produced in standard format 25 x 75 x 1 mm. Additionally, we offer customised slides with a surface modification that is tailored to your specific application.



# General Information

## MOLECULAR SURFACE ENGINEERING

PolyAn's high-performance Microarray Slides are functionalized with a 3D surface chemistry comprised of a long-chain polymer containing a defined number of reactive groups. This polymer is covalently linked to the surface of the slide.



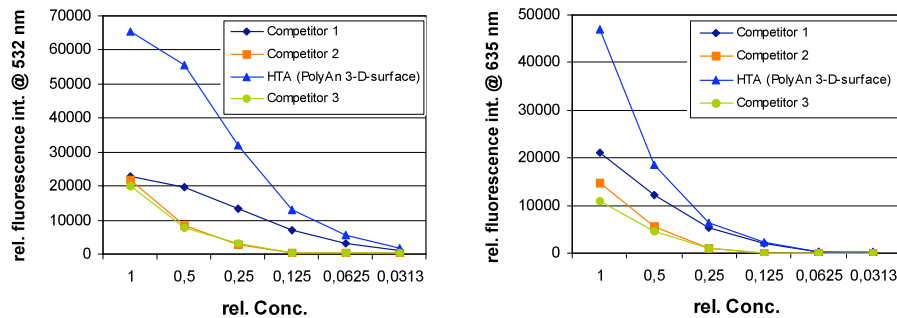
Our MSE-technology gently binds the functional layer onto the surface without damaging the base substrate. The morphology of the functional surface and thus the number of the reactive groups can be fine tuned within a narrow range. This yields a number of advantages:

- |   |  |
|---|--|
| • Low fluorescence background                                 | Covalent binding of functional layer on the substrate, both show very low autofluorescence               |
| • Low unspecific binding                                      | Combination of reactive functional groups with PolyAn antifouling matrix                                 |
| • Surfaces for all biomolecules                               | Tuneable surface hydrophilicity / hydrophobicity   |
| • Uniform spot morphology                                     | Narrow variation of surface properties e.g. contact angle. Homogeneous distribution of functional groups |
| • Optimal density and high accessibility of functional groups | Morphology and thickness of functional layer tailored to the desired application.                        |



# General Information

## PERFORMANCE



Binding capacity of a HTA12 Slide functionalized with a 3D-Amino matrix measured at 532 and 635 nm compared to other microarray substrates. The 70mere oligonucleotides were spotted on HTA12 slides with PolyAn's 3D-Amino Matrix and on commercially available glass slides, respectively (Source: Greiner Bio-One GmbH).

## STORAGE OF FUNCTIONALIZED SLIDES

The slides are packaged boxes under Argon atmosphere with a capacity of 25 or 5 slides per box to avoid contamination with particles. Prior to biological processing the slides have to be protected against contact with air, high humidity, from direct sunlight and temperatures above 25°C.

The MSE-functionalized slides are to be stored dry and at room temperature.

Once the package has been opened, slides should be used within one week if stored below 7°C under inert condition inside a desiccator and protected from light.

## TIPS FOR USING MICROARRAY SLIDES

The slides should be used in a dust-free environment. Particles on the slide surface may cause defects in the probe binding and cause uneven background.

After printing, e.g. loose DNA, unreacted biomolecules and buffer residues must be removed from the slide surface by extensive washing. Remaining free reactive groups on the slide have to be deactivated.

