

# Series S Sensor Chip PEG

## Instructions for Use

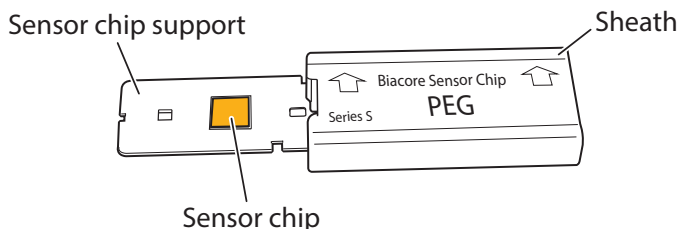
### A Biacore Extend product

This is a Biacore™ Extend product and not a standard Biacore consumables product.

For more information, see [cytiva.com/biacoreextend](https://www.cytiva.com/biacoreextend).

### Product description

Product code:	29239810 (Package of one sensor chip)
Content:	Series S Sensor Chip PEG
Storage:	The use-before date applies to chips stored at -20°C in unopened pouches.



The sensor chip is fixed to a polystyrene sensor chip support. Each cassette, consisting of a sensor chip and sheath assembly, is individually packed under a nitrogen atmosphere in a sealed pouch.

**Note:** For Research use only.

# Application areas

The chip surface can be used for a wide range of applications and offers an alternative to current sensor chips with dextran matrix using carboxyl functional groups for ligand immobilization.

Refer to [cytiva.com/biacore](https://www.cytiva.com/biacore) for updates on applications and scientific publications.

Series S Sensor Chip PEG is most suitable for larger ligands.

# Surface specificity

Series S Sensor Chip PEG is a flat surface modified with polyethylene glycol (PEG) on top of an alkanethiol self-assembled monolayer. Carboxyl functional groups are provided for ligand attachment and amine coupling with standard EDC/NHS chemistry is recommended. Coupling time can be varied.

# Preparations for use

Step	Action
1	Allow the sealed sensor chip pouch to equilibrate at room temperature for 30 to 60 minutes in order to prevent condensation on the chip surface.
2	Prepare the Biacore instrument with running buffer. The buffer must be filtered (0.22 µm), and degassed for systems that do not have an integrated buffer degasser.
3	Open the sensor chip pouch. Make sure that the sensor chip support remains fully inserted into the sheath at all times.
4	Dock the sensor chip in the instrument as described in the <i>Instrument Handbook</i> .
5	Sensor chips that are not docked in the instrument must be stored in closed containers.

# Immobilization

Default protocol for amine coupling:

Activation time	30 s (Variation range 10 to 45 s)
Ligand concentration	5 to 10 µg/mL (Do not exceed 50 µg/mL)
Ligand contact time	60 to 1200 s
Immobilization buffer	10 mM, Acetate pH 5.0
Deactivation time	420 s
Deactivation buffer	1 M etanolamin, pH 8.5

- Use a low ligand concentration (5 to 10 µg/mL) for optimal stoichiometric relationship between immobilized ligand and analyte.
- Use ligand contact time as the primary tool for controlling ligand level.
- Use a short activation time (30 s). In general, immobilization level increases with decreasing activation. A shorter activation time than 30 s can sometimes be beneficial. To be able to activate for as short as 10 s, the flow rate during the activation needs to be adjusted. For Biacore S200, Biacore T100, and Biacore T200, set the immobilization flow rate to 12 µL/min. Biacore 4000 is not compatible with this sensor chip due to limitations in injection length and flow rate settings.
- Use standard EDC/NHS concentrations according to recommendation for Amine Coupling Kit.
- To decrease baseline drift and improve response stability after immobilization, it is recommended to run 10 to 20 startup cycles with buffer. Alternatively, leave the immobilized surface on standby overnight. Perform at least one final start-up cycle with analyte when the previous cycles have been run without analyte.
- Do not use Sensor Chip PEG for pH scouting. Amine coupling using 10 mM Acetate, pH 5.0 as coupling buffer is recommended.
- Protocols for alternative immobilization chemistries have not been investigated. Functional groups on the ligand molecule that can be used for coupling include -NH<sub>2</sub>, -SH, -CHO, -OH, and -COOH. Refer to *Biacore Sensor Surface Handbook* for more information on immobilization strategies and procedures.

## Regeneration

Regeneration of the immobilized ligand is performed by selective dissociation of the bound analyte. Select conditions that achieve complete dissociation of the analyte without affecting the binding characteristics of the ligand. The choice of regeneration procedure might be limited by the stability of the ligand. For more detailed information on regeneration strategies, refer to the *Biacore Sensor Surface Handbook*.

## Analysis temperature

Series S Sensor Chip PEG is mainly designed for use at 25°C analysis temperature. Alternative temperatures have not been tested.

## Storage

Store Series S Sensor Chip PEG in a -20°C freezer in an unopened pouch until use.

## Capacity

Series S Sensor Chip PEG has an immobilization capacity similar to Sensor Chip C1, which is around 10% of that obtained on Sensor Chip CM5.

## Chemical resistance

The surface of Series S Sensor Chip PEG is resistant to 1-minute pulses of several commonly used agents (see table below). Other agents have not been tested.

Agent	Concentration
DMSO	5%
Glycine, pH 1.5 to 3.0	10 mM
MgCl <sub>2</sub>	3 M
SDS	0.5%
NaOH	50 mM

## Serum and plasma samples

To avoid binding from anti-PEG antibodies, add PEG ( $M_r$  1000 to 5000) to the sample dilution buffer to a final PEG concentration of approximately 5 mg/mL.

Exclude EDTA from the sample dilution buffer since it increases non-specific binding.

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