

# Accessory Reagents

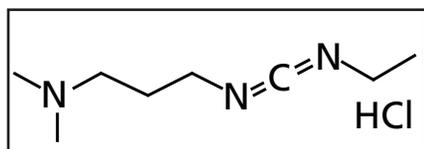
## for use in Microparticle Reagent Development

Polysciences now offers a collection of accessory products for use in microparticle reagent development. The collection includes crosslinking reagents and surfactants, as well as solutions and buffers for microsphere coating and storage. These products complement our extensive catalog of polymer, silica and magnetic microparticles, and also offer a convenient means to replenish individual components of coupling kits.

### COUPLING REAGENTS

Microspheres are routinely coated with ligands such as antibodies, oligonucleotides and peptides for use in diagnostics and bioseparations. While affinity and adsorbed coatings are useful, covalent coupling results in the permanent attachment of the biomolecule to the functionalized (e.g. carboxyl or amine) microsphere. It can provide needed stability when developing a commercial reagent, and for multiplexed assays, where analyte-specific bead populations are mixed.

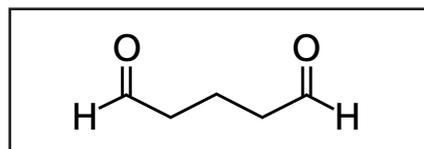
Carboxyl and amine-modified microspheres require the use of a chemical linker for activation and covalent immobilization of ligand. EDAC and glutaraldehyde are two of the most common crosslinkers used in bead coating protocols.



Structure of DEPC-Carbodiimide.

#### DEPC-Carbodiimide (EDAC) - Catalog Code BLI5288

EDAC is a zero-length crosslinker that is routinely used for the covalent binding of amine-containing ligands to carboxylated microspheres. Sample coupling protocols are provided in Bangs Laboratories' Technical Data Sheet (TDS) 238C, Covalent Coupling of Proteins to Carboxylated Polystyrene Microparticles by the "Carbodiimide" Method, and TDS 644, PolyLink Protein Coupling Kit for COOH Microspheres.



Structure of Glutaraldehyde, EM Grade, 25%

#### Glutaraldehyde, EM Grade, 25% - Catalog Code BLI1909

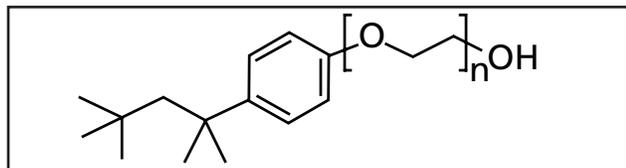
Glutaraldehyde is a homobifunctional linker that is suitable for binding amine-containing ligands to amine-modified beads. We supply EM (electron microscopy) grade glutaraldehyde in ampoules to ensure highest activity. Sample coupling protocols are provided in TDS 238E, Protocol for Adsorbing Proteins on Polystyrene Microspheres, and TDS 238G, Glutaraldehyde Kit for Amino Beads & Blue Dyed Beads.

### SURFACTANTS

Surfactants are commonly utilized with microspheres composed of hydrophobic polymer matrices such as polystyrene to facilitate bead wetting and deter or treat aggregation. Common concentrations are ~0.1% for uncoated polymer beads and ~0.01% in the storage buffer of coated polymer, magnetic and silica beads. The type and concentration of surfactant should be optimized to achieve best performance. To avoid interference with binding reactions, surfactant is washed out prior to bead coating or use of the coated microsphere reagent.

### **Triton® X-100 Nonionic Surfactant** - Catalog Code BLI4605

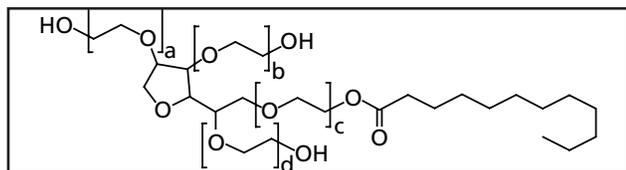
Triton® X-100 is often used in the storage buffers of coated bead suspensions. Very low concentrations may be used in wash or binding buffers if needed (e.g. 0.0005%). (Molecular Weight: 625.00)



Structure of Triton® X-100

### **Tween® 20 Nonionic Surfactant** - Catalog Code BLI6110

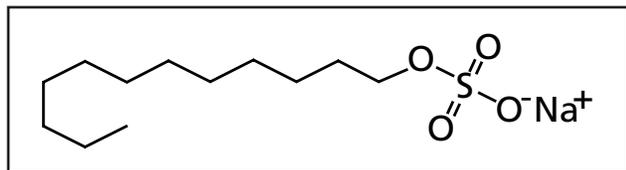
Tween® 20 is often used in the storage buffers of coated bead suspensions. Very low concentrations may be used in wash or binding buffers if needed (e.g. 0.0005%). (Molecular Weight: 1,227.50)



Structure of Tween® 20

### **Sodium Dodecyl Sulfate Anionic Surfactant** - Catalog Code BLI3945

Sodium dodecyl sulfate (SDS) is an anionic surfactant, which will both decrease hydrophobicity and participate in charge stabilization of the suspension. SDS is a more rigorous surfactant that is commonly used in uncoated polymer bead preparations. (Molecular Weight: 238.38)



Structure of Sodium Dodecyl Sulfate

## BUFFERS AND SOLUTIONS

### Coupling Buffers

With pHs ranging from 4.5 to 9.0, our surfactant-free Coupling Buffers are available in 250mL, 500mL, 1000mL, and 2000mL volumes. These coupling buffers can also be used as wash buffers.

### Storage Buffers

As for the Storage Buffers, we offer pH 7.4 and pH 8.5 varieties, both with stabilizers to keep your coated beads happy.

### Bead Solution

The Bangs Bead Solution is a ready-to-use aqueous suspending solution for the dilution and/or storage of uncoated plain, dyed, or functional beads. It contains minimal stabilizers.

For additional information regarding our accessory reagents, visit our website at [www.polysciences.com](http://www.polysciences.com).

## Accessory Reagents

<i>Cat. #</i>	<i>Description</i>
BLI5288	DEPC-Carbodiimide (EDAC)
BLI1909	Glutaraldehyde, EM Grade, 25%
BLI4605	Triton® X-100
BLI6110	Tween® 20
BLI3945	Sodium Dodecyl Sulfate (SDS)
24976	Polysciences Bead Coupling Buffer, pH 4.5
24977	Polysciences Bead Coupling Buffer, pH 6.0
24974	Polysciences Bead Coupling Buffer, pH 7.4
24978	Polysciences Bead Coupling Buffer, pH 9.0
24979	Polysciences Bead Storage Buffer, pH 7.4
24975	Polysciences Bead Storage Buffer, pH 8.5
24973	Polysciences Bead Solution
24350	PolyLink Protein Coupling Kit

- Tween® is a registered trademark of ICI Americas, Inc.
- Triton® is a registered trademark of The Dow Chemical Company.

Order online anytime at [polysciences.com](http://polysciences.com)