

Carboxyl Latex Beads

C1506724

Storage: 2-8°C. Do not freeze.

Introduction:

Aladdin Carboxyl Latex Beads are polystyrene microspheres prepared by emulsion polymerization, with a size range of 80–350 nm. The surface is modified with an appropriate amount of carboxyl groups, allowing convenient covalent conjugation with antibodies or other active substances containing amino groups, resulting in stable microsphere-ligand complexes. They are widely applicable in particle-enhanced immunoturbidimetric assay reagents.

Catalog Number	Particle Size	Concentration	Carboxyl Content Reference Value ($\mu\text{eq/g}$)	PA Reference Value	Application
C1506724-80nm	80nm	10%	310	34	Immunoturbidimetry
C1506724-100nm	100nm	10%	220	39	Immunoturbidimetry
C1506724-120nm	120nm	10%	210	34	Immunoturbidimetry
C1506724-140nm	140nm	10%	190	32	Immunoturbidimetry
C1506724-160nm	160nm	10%	160	34	Immunoturbidimetry
C1506724-180nm	180nm	10%	150	30	Immunoturbidimetry
C1506724-200nm	200nm	10%	130	32	Immunoturbidimetry
C1506724-250nm	250nm	10%	75	48	Immunoturbidimetry
C1506724-300nm	300nm	10%	85	33	Immunoturbidimetry
C1506724-350nm	350nm	10%	60	45	Immunoturbidimetry

Note:

- ① The carboxyl group content is determined by conductometric titration and is expressed in $\mu\text{eq/g}$.
- ② PA stands for Parking Area, representing the surface charge density of the microspheres. A smaller value indicates a smaller surface area occupied per carboxyl group, corresponding to a higher carboxyl group density.
- ③ The actual carboxyl group content and PA values may vary between batches, typically within $\pm 10\%$ of the reference values.

Product Features:

- Uniform particle size with low batch-to-batch variation.
- Single-batch production capacity up to 100 L, meeting most production demands.

- Customized services are available.

Product Parameters:

- Material: Polystyrene copolymer.
- Solid Content: 10% w/v.
- Particle Size Range: 80–350 nm.
- Uniformity: CV ≤ 3%.
- Dispersion Medium: Purified Water, 0.05% ProClin 300.

Instructions for Use:

1 One-Step Labeling Protocol:

1.1 Solution Preparation:

Name	Details
Reaction Buffer	50mM PB, pH 7.0
EDC Solution	10mg/mL in PB, pH 6.0
Blocking Buffer	50mM PB, pH 7.4, 1% BSA
Storage Buffer	50mM Tris-HCl, pH 8.2

1.2 Recommended Labeling Protocol:

- (1) Ultrasonic dispersion is recommended before use.
- (2) Dilute the microspheres 10-fold to 1% (w/v) using Reaction Buffer.
- (3) Add 0.2–0.8 mg of antibody per mL of microspheres. Mix well.
- (4) Add 20 µL of EDC Solution. Mix well.
- (5) React on a mixer for 2 hours.
- (6) Replace the solution twice with 50 mM PB, pH 7.4. Add 1 mL of Blocking Buffer and react for 1 hour.
- (7) Replace the solution twice with Storage Buffer. Resuspend in 1 mL of Storage Buffer and store at 2–8°C.

2 Two-Step Labeling Protocol:

2.1 Solution Preparation:

Name	Details
Reaction Buffer	50mM PB, pH 7.0
EDC Solution	10mg/mL in PB, pH 6.0
Blocking Buffer	50mM PB, pH 7.4, 1% BSA
Storage Buffer	50mM Tris-HCl, pH 8.2

2.2 Recommended Labeling Protocol:

- (1) Ultrasonic dispersion is recommended before use.
- (2) Dilute the microspheres 10-fold to 1% (w/v) using Reaction Buffer.

- (3) Add 20 μ L of EDC Solution. Mix well and react on a mixer for 15 minutes.
- (4) Replace the solution twice with Reaction Buffer.
- (5) After dispersing the microspheres in 1 mL of Reaction Buffer, add 200–800 μ g of antibody. Mix well and react on a mixer for 2 hours.
- (6) Replace the solution twice with 50 mM PB, pH 7.4. Add 1 mL of Blocking Buffer and react for 1 hour.
- (7) Replace the solution twice with Storage Buffer. Resuspend in 1 mL of Storage Buffer and store at 2–8°C.

Precautions:

1. This product series should be stored in a cool, sealed environment. Do not freeze.
2. Before use, disperse the microspheres evenly using ultrasonication or a vortex mixer to ensure uniform dispersion.

