

ReadiUse™ 0.5 M TCEP Solution *Neutral and Thiol-Free*

Catalog Number: 20013

Unit Size: 5 mL

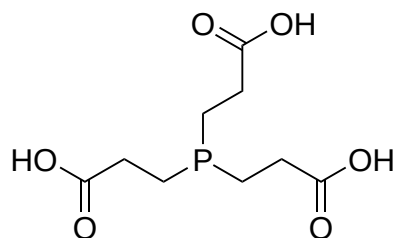
Product Details

Storage Conditions	Refrigerated (2-8 °C)
Expiration Date	24 months upon receiving

Chemical Properties

Appearance	Liquid
Molecular Weight	250.19
Soluble In	Water

Chemical Structure

**Spectral Properties**

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

ReadiUse™ 0.5 M TCEP Solution is a stable, ready-to-use stock solution of TCEP, a powerful phosphine-based reducing agent that offers a thiol-free, odorless alternative to DTT and β-mercaptoethanol. Unlike thiol-based reagents, the ReadiUse™ 0.5 M TCEP Solution is resistant to air oxidation, nonvolatile, and nonreactive toward most protein functional groups, making it highly stable and reliable. At 5–50 mM working concentrations, it rapidly and completely reduces protein and peptide disulfide bonds within minutes at room temperature, performing as effectively as DTT.

The neutral pH formulation provides clear advantages over acidic TCEP·HCl by preserving protein integrity, preventing hydrolysis and carbohydrate modification, and producing sharper SDS-PAGE bands. The solution is effective across a broad pH range (4.0–9.0) and temperature range (5–95 °C), and remains compatible with salts, detergents, and denaturants such as guanidine·HCl (though urea should be avoided). Because it contains no sulfhydryl groups, ReadiUse™ TCEP does not require removal prior to downstream applications such as histidine-tagged protein purification or maleimide conjugation. For best results, avoid contact with metals, and include 5–20 mM EDTA to prevent reoxidation by divalent ions. Reduced samples should be used promptly, as disulfide bonds may reform over time.