

Triton X-100

CAS Number: 9002-93-1

Storage Temperature: Room Temperature

Product Description :

Appearance: Light colored viscous liquid

Molecular Formula: C₁₄H₂₂O(C₂H₄O)₉₋₁₀

Molecular Weight: 647

Synonym: Octylphenol ethylene oxide condensate

Triton X-100 is a nonionic detergent, 100% active ingredient, which is often used in biochemical applications to solubilize proteins. Triton X-100 has no antimicrobial properties. It is considered a comparatively mild non-denaturing detergent and is reported in numerous references. It does absorb in the ultraviolet region of the spectrum, so it can interfere with protein quantitation by absorption at 280nm. A number of polymeric resins have been used to remove X-100 from solution, including Amberlite hydrophobic XAD resins and Rezorian A161 cartridges.

The "Triton X" series of detergents are produced from octylphenol polymerized with ethylene oxide. The number ("-100") relates only indirectly to the number of ethylene oxide units in the structure. X-100 has an "average of 9.5" ethylene oxide units per molecule.

For lysing cells, typically about 0.1% Triton X-100 solution in water will be sufficient, and even up to 0.5% concentrations will usually not harm most enzymes being isolated. Many enzymes remain active in the presence of X-100; for example, Proteinase K, remains active in 1% (w/w) solutions of X-100.

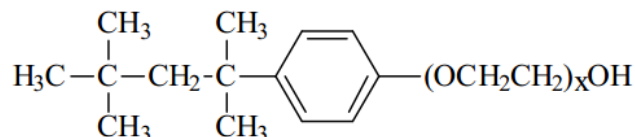
Triton X-100 can be detected in the parts per million range by spectrophotometric measurement of the concentration of a Triton-ammonium-cobalt-thiocyanate complex. Interfering substances in this assay have been discussed.

For a given application, the choice of a suitable surfactant depends on a number of variables, from its solubility, polarity and micelle size to the mechanism of its action with the target solute. The literature contains numerous articles: Choice of detergent for solubilization of (erythrocyte) membranes; Effect of hydrophile-lipophile balance on (cytochrome) membrane solubilization; Mode of interaction of polyoxyethylene glycol detergents with membrane protein ; General background on surfactants and use in protein purification.

Preparation Instructions:

Triton X-100 is soluble in all proportions at 25°C in water, benzene, toluene, xylene, trichloroethylene, ethylene glycol, ethyl ether, ethanol, isopropanol, and ethylene dichloride. At 10% (v/v) in water, it gives a clear to slightly hazy solution, from clear to slightly yellow in appearance.

Solutions are stable to autoclaving. At certain concentrations the solutions may be cloudy but dispersible above the cloud point; they should clear with stirring upon cooling.



x = 9-10

Storage/Stability :

Triton X-100 is considered stable for years if stored sealed at room temperature. For special applications, storage under argon or nitrogen at 2-8°C may be preferred.

Precautions and Disclaimer :

For Laboratory Use Only. Not for drug, household or other uses.