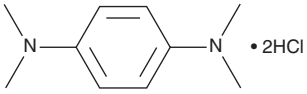
PRODUCT INFORMATION

TMPD (hydrochloride)

Item No. 70455

CAS Registry No.:	637-01-4
Formal Name:	N,N,N',N'-tetramethyl-1,4-benzenediamine, dihydrochloride
Synonyms:	Wurster's Reagent, N,N,N',N'-Tetramethyl-p-Phenylenediamine
MF:	$C_{10}H_{16}N_2 \bullet 2HCl$
FW:	237.2
Purity:	≥95%
UV/Vis.:	λ_{max}: 263, 308 nm
Supplied as:	A crystalline solid
Storage:	Room temperature
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

TMPD (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the TMPD (hydrochloride) in the solvent of choice, which should be purged with an inert gas. TMPD (hydrochloride) is soluble in the organic solvent DMSO at a concentration of approximately 1.7 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of TMPD (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of TMPD (hydrochloride) in PBS (pH 7.2) is approximately 14.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

TMPD is an easily oxidizable compound that serves as a reducing co-substrate for heme peroxidases.[1] TMPD undergoes one-electron oxidation by the heme peroxidase higher oxidation states (compounds I and II) producing a highly colored product that absorbs at 611 nm.[2] Thus, the stoichiometry of oxidation is 2 moles of TMPD oxidized per mole of hydroperoxide reduced by the peroxidase. The extinction coefficient of the oxidized TMPD at 611 nm is 12,200.[2] TMPD is also used for the detection of peroxidases on polyacrylamide gels.[3]

References

1. Van der Ouderaa, F.J., Buytenhek, M., Nugteren, D.H., *et al.* Purification and characterisation of prostaglandin endoperoxide synthetase from sheep vesicular glands. *Biochim. Biophys. Acta* **487(2)**, 315-331 (1977).
2. Kulmacz, R.J. and Lands, W.E.M. Requirements for hydroperoxide by the cyclooxygenase and peroxidase activities of prostaglandin H synthase. *Prostaglandins* **25(4)**, 531-540 (1983).
3. Butler, M.J. and Lachance, M.A. The use of N,N,N',N'-tetramethylphenylenediamine to detect peroxidase activity on polyacrylamide electrophoresis gels. *Anal. Biochem.* **162(2)**, 443-445 (1987).

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