

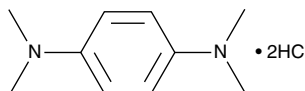
# Product Information



## 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<sub>10</sub>H<sub>16</sub>N<sub>2</sub> • 2HCl  
**FW:** 237.2  
**Purity:** ≥95%  
**Stability:** ≥2 years at room temperature  
**Supplied as:** A crystalline solid  
**UV/Vis.:** λ<sub>max</sub>: 263 nm



### Laboratory Procedures

For long term storage, we suggest that TMPD (hydrochloride) be stored as supplied at room temperature. It should be stable for at least two years.

TMPD (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the TMPD (hydrochloride) in an organic solvent purged with an inert gas. TMPD (hydrochloride) is soluble in DMSO. The solubility of TMPD (hydrochloride) in DMSO is 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 compound 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.

TMPD is an easily oxidizable compound that serves as a reducing co-substrate for heme peroxidases.<sup>1</sup> 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.<sup>2</sup> 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.<sup>2</sup> TMPD is also used for the detection of peroxidases on polyacrylamide gels.<sup>3</sup>

### 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**, 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**, 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**, 443-445 (1987).

### Related Products

Guaiaicol - Item No. 70430 • TMB (hydrochloride) - Item No. 70450

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy located on our website and in our catalog.**

Copyright Cayman Chemical Company, 04/12/2011

### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

custserv@caymanchem.com

#### Web

www.caymanchem.com