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## Product Information

### Doxycycline hyclate

Product Number **D9891**  
Storage Temperature 2-8 °C

#### Product Description

Molecular Formula:  $(C_{22}H_{24}N_2O_8 \cdot HCl)_2 \cdot C_2H_6O \cdot H_2O$   
Molecular Weight: 1025.89  
 $pK_a$ : 3.5, 7.7, 9.5 (20 °C)<sup>1</sup>  
Melting Point: Approximately 201 °C  
 $\lambda_{max}$ : 351 nm, 267 nm  
Extinction Coefficient:  $E^{mM} = 13.2$  (351 nm), 17.4 (267 nm) (10 mM HCl in methanol).  
Specific Rotation: -110 (10 mg/ml, 10 mM HCl in methanol).<sup>2</sup>  
Synonym: Doxycycline hydrochloride hemiethanolate hemihydrate.

Doxycycline is a relative of tetracycline reported to be more effective against sensitive organisms.<sup>3</sup> Cross-resistance is common although some tetracycline-resistant *S. aureus* respond to doxycycline. It is most often used as a broad spectrum antibiotic and bacteriostatic agent against bacteria. Doxycycline has also been reported to have antiprotozoal properties. It is used in the treatment of chlamydia, rickettsia, mycoplasma, and some spirochete infections, in addition to the standard treatment of Gram positive/negative infections.

Doxycycline is often used in culture at a concentration of 0.1 - 12 µg/ml.

#### Precautions and Disclaimer

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

#### Preparation Instructions

This product is soluble in water (50 mg/ml), yielding a clear, yellow-green solution. Mild warming may be required to fully dissolve the material. This product is also reported to be soluble in methanol, sparingly soluble in ethanol, and insoluble in chloroform or ether.

#### Storage/Stability

Solutions in sodium chloride or glucose should be used within 48 hours of preparation and protected from direct sunlight.<sup>3</sup> Solutions should be stored at 2-8 °C.

#### References

1. Clarke's Isolation and Identification of Drugs, 2nd Ed., p. 575.
2. The Merck Index, 10th ed., Entry# 3436
3. Martindale The Extra Pharmacopoeia, 30th ed, 160 (1993).

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