


Specification

Tetracycline hydrochloride

A2228

Physical Description:	Solid
Product Code:	A2228
Product Name:	Tetracycline hydrochloride
Specifications:	<p>Assay (HPLC): min. 95 %</p> <p>$\alpha_{20^{\circ}\text{C/D}}$; 0.5 %, 0.1 M HCl, calc. on dried subst.: -240° - -255°</p> <p>pH (1 %; H₂O): 2.0 - 3.0</p> <p>Loss on drying (3 h; 60°C; vacuum): max. 2 %</p>
Hazard pictograms	
WGK:	1
Storage:	<p>RT</p> <p>protected from light</p>
Signal Word:	Attention
GHS Symbols:	GHS07
H Phrases:	<p>H315</p> <p>H319</p> <p>H335</p>
P Phrases:	P305+P351+P338
Molecular Formula:	C ₂₂ H ₂₄ N ₂ O ₈ · HCl
M:	480.90 g/mol
CAS:	64-75-5
EINECS:	200-593-8

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CS:	29413000
<p>Comment</p> <p>Tetracycline was prepared first synthetically from chlorotetracycline, later it was isolated from <i>Streptomyces viridifaciens</i>. Tetracycline is active against gram positive and gram negative cocci and bacteria. The introduction of the tetracycline-controlled gene expression system brought a new application for the antibiotic molecular biology (2-4). Stability: Tetracycline hydrochloride is stable if stored in a dry place and protected from light. It is water-soluble with approx. 11 mg/ml at 28°C. The stability in solutions is optimal at pH 3 - 5.2 (shelf life approx. 6 - 12 days). It may be stored between -20°C and 37°C. Since Tetracyclin is light-sensitive, solutions and agar plates containing TC should be protected from light. The recommended working concentration is 10 - 50 µg/ml, the stock solution e.g. 1.25 mg/ml. Magnesium ions antagonize with the activity of TC.</p>	
<p>Bibliography</p> <p>(1) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) <i>Molecular Cloning</i>: A Laboratory Manual, 2nd Edition. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York. (2) Gossen, M. & Bujard, H. (1992) <i>Proc. Natl. Acad. Sci. USA</i> 89, 5547-5551 Tight control of gene expression in mammalian cells by tetracycline-responsive promoters. (3) Gossen, M. et al. (1995) <i>Science</i> 268, 1766-1769 Transcriptional activation by Tetracyclines in mammalian cells. (4) Yin, D.X. et al. (1996) <i>Anal. Biochem.</i> 235, 195-201 Tetracycline-controlled gene expression system achieves high-level and quantitative control of gene expression. (5) Freundlieb, S. et al. (1997) <i>Methods Enzymol.</i> 283, 159-173 Tetracyclin-controlled gene expression systems for investigations of the cell cycle.</p>	

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