

## McFarland Turbidity Standards

**Intended use:** McFarland standards are used to perform visual or spectrophotometric comparisons of bacterial densities in water, saline or liquid growth medium. These latex suspensions have been photometrically standardized to the conventional barium sulfate McFarland standards. Corresponding bacterial count in a comparable suspension is listed below each of the standards.

**Storage:** Store between 4-25°C; **do not freeze.**

**Precautions:** Latex McFarland standards may be mixed by gentle inversion; **do not vortex.**

**METHOD:** Do not remove the cap. Contents contain 0.1% sodium azide as a preservative. Protect from excessive light and store in the original container. Use a similar diameter (16 mm) tube to prepare a bacterial suspension comparable to a McFarland standard. Hold McFarland standard and the suspension in front of a Wickerham Card (provided) and perform visual comparison. Look for identical obliteration or distortion of the black lines while seeing through both tubes side by side. Add inoculum or dilute the suspension to match the standard.

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**Limitations:** Excessive yellow or tan discoloration of the suspension medium (broth) may render the comparison inaccurate. Less than 24 hour old cultures of *Haemophilus influenza* may give falsely low estimates of bacterial density.

References:

1. McFarland, J. 1907. Nephelometer; *JAMA* 14:1176-1178
2. Murray, PR; Baron, EJ; Jorgensen, JH; Landry, ML; Pfaller, MA; *Manual of Clinical Microbiology* 9<sup>th</sup> edition ASM Press, Washington DC 2007
3. Performance Standards for Antimicrobial *Susceptibility Testing*; 2009, Nineteenth Informational Supplement. CLSI document M100-S19 (ISBN 1-56238-690-5).

Standard	0.5	1	2	3	4
Approx. bacterial density x 10 <sup>8</sup> /ml	1.5	3	6	9	12



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