

Opalescence/Turbidity of liquids (NTU)

Opalescence/Turbidity of liquids is not a common colorimetric application, though one application encountered is measuring the opalescence of the bleaching solutions used in dental whitening. Opalescence/Turbidity is always reported with this unit, NTU (nephelometric turbidity units).

NTU-10mm index have been implemented into our software to report the degree of opalescence/Turbidity of liquids. It is calculated from the transmission Haze. You can measure NTU-10mm using a sphere instrument such as Vista, ColorQuest XE, UltraScan PRO, or UltraScan VIS.

Formazin turbidity liquid standards (user-prepared formazin or commercial stock formazin suspension) can be used to check/verify turbidity calibration of our sphere instruments. AMCO Clear standards (Styrene divinylbenzene suspensions) are not suitable to use for our sphere instruments.

In USEPA Method 180.1, AMCO Clear standards is used as standards for limited instruments, like for a nephelometer, which has the detector positioned at 90° to the light source. Our instruments have detectors centered at 0° relative to incident beam with a wavelength range from 400-700, mentioned as Light attenuation unit design (AU) in ASTM D7315. The AMCO standards have sub-micron particles (0.02-0.2 micron) while formazin have a wide range particle size, 0.1-10 micron, (most of them above 1 micron). It is said that sub-micron particles scatter short wavelengths light (white light) at optimally 90°. In all, this AMCO Clear standards are not suitable to use for our sphere instruments.

Following are the sources for formazin turbidity standards.

Hach Company

Loveland, CO 80538 USA

+970-669-3050

www.hach.com

RICCA Chemical Company

Arlington, TX 76094 USA

+817-461-5601

www.riccachemical.com