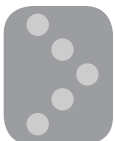




Load. Start. Done.



Turbidity AssayPlus™



Turbidity AssayPlus™

The Turbidity AssayPlus™ System is designed for automating the analysis of turbidity in water and foodstuffs. Man-Tech's Turbidity AssayPlus as part of the TitraSip™ SA system, is a proven technology verified through the US EPA's Environmental Technology Verification (ETV) program.

With Turbidity AssayPlus, the Man-Tech System:

- **Automates Turbidity Calibrations**
- **Automates Turbidity QC**
- **Automates Turbidity Analysis**

For a hands free, maintenance free solution that delivers results!

What is important about turbidity analysis? Following Standard Methods 2310 B, US EPA 180.1, DIN EN 27027 and ISO 7027, the following steps are specified and must be performed in manual or automated turbidity measurements:

- *Sample must be homogenous prior to measurement*
- *Eliminates potential for air bubbles*
- *Measuring cell must be indexed to provide the same measuring angle for calibrants, QC's and samples*
- *System must have calibration and analysis capabilities*
- *System must measure turbidity before any settling may occur*
- *System must effectively clean the sample line and measuring cell between samples*

The Man-Tech Turbidity AssayPlus completes all this and more:

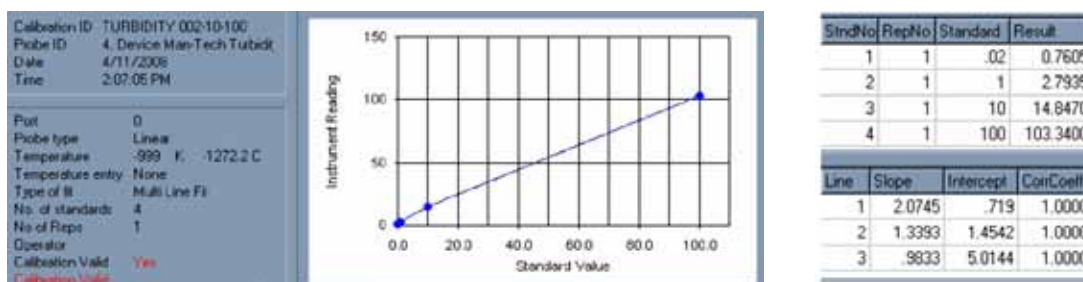
- Sample is gently stirred prior to measurement ensuring homogeneity.
- The sample is pulled (not pushed) into the measuring cell from the bottom and out the top, thereby eliminating the potential for air bubbles. The measuring cell is vertically oriented with an inlet at the bottom and outlet at the top. Man-Tech's turbidity cell is a proprietary design with excellent optical qualities.
- Since the Turbidity AssayPlus is a complete Man-Tech solution (not a third party integration), the Man-Tech software completely controls all aspects of the turbidity measurement including the calibration, calibrations check, QC check and sample measurements.
- Since the same cell is used for all analysis functions this ensures the index of the cell is identical, leading to representative measurements for all samples (calibrants, standards and samples) from identical cell orientations.
- Utilizing Man-Tech's pulling of sample into the cell, the sample is held under pressure eliminating the potential for settling over a set time period.



- Man-Tech's IntelliRinse ensures the measuring cell is below a user set NTU value before measuring the next sample. In addition, the cell is rinsed with sample in excess prior to measurement.
- Only 30mL maximum sample volume is required and this may be pumped back and used for multiple parameter analysis!
- The Turbidity AssayPlus pumps the sample back to the original sample cup since it is not chemically altered and the sample may be used for additional multi-parameter analysis. Since the same function occurs during the rinse routine, potential dilution effects are eliminated (direct flow through cells that go to waste have the potential for dilution effects).

Additional Features and Benefits

- 2-4 parameters may all be measured from a 50mL sample tube. Even more parameters are available when using Man-Tech's 125mL sample cup.
- Turbidity AssayPlus was designed for use with safe polymer standards (as compared to the hazardous formazin standards).
 - Man-Tech has developed a polymer stock solution making it simple and cost effective to make standards that are used daily. This is available as a 100NTU stock solution.
- The automated, software-controlled turbidity calibration allows for up to 16 standards to be used. These are fitted in a linear, point-to-point or quadratic profile. As evidenced by the calibration curve (figure below), the point-to-point calibration profile produces the true nature of the turbidity calibration curve (which is not linear at the low end). Direct meter calibrations (automated or non-automated) do not provide this.



- a. Software controlled calibration allows for specific ranges to be bracketed. For example, for a major bottled water supplier, QC checks their International bottled water quality using a Man-Tech calibration profile from 0.02 to 0.1 NTU with 5 different calibration standards employed to bracket the target value of 0.05NTU.
- b. With software controlled calibration there is a complete audit trail where samples and QC's can be matched with the specific calibrations on any day that were used to extrapolate the results.
- c. With third party integrated instruments offering only data acquisition, it is very difficult to provide the audit trail required and calibration profiles.



Turbidity AssayPlus™

- Multi-parameter solutions include pH, conductivity, alkalinity, fluoride and turbidity from a single 50mL sample tube. Upgrading to the 125mL sample cups allows for additional parameters such as color, chloride and ammonia.
- Automate from 30 to 197 samples in a single run or invest in the TitraSip SA for multi-parameter analysis, including turbidity, from a single, stand alone station.

For turbidity method information, please go to http://www.mantech-inc.com/analytical/App_notes.asp and request application note #60-Turbidity.

Verified by the US EPA's Environmental Technology Verification (ETV) Program

Man-Tech's TitraSip™ SA for multi-parameter analysis including pH, conductivity, alkalinity, turbidity, total residual chlorine and temperature, has been verified by the US EPA's Environmental Technology Verification (ETV) Program (www.epa.gov/etv). The verification was funded by the Department of Homeland Security and completed at the City of Cincinnati over four months. Man-Tech titration/ion analysis systems are the only such systems to have gained this verification.

Man-Tech's Turbidity AssayPlus - reliable, automated turbidity analysis!

Disclaimer: The EPA Environmental Technology Verification Program (ETV) Name and/or Logo does not imply approval or certification of this product, nor does it make any explicit or implied warranties or guarantees as to product performance. Information on the performance characteristics of TitraSip™ SA can be found at www.epa.gov/etv, or call Man-Tech Associates Inc. at (519) 763-4245 to obtain a copy of the ETV verification report.



**MANUFACTURED
IN CANADA**



Load. Start. Done.

www.mantech-inc.com

Contact Us

MAN-TECH
2 Admiral Place
Guelph, Ontario CANADA
N1G 4N4

Phone: 1.519.763.4245
Fax: 1.519.763.9995
Email: info@mantech-inc.com