

- No preparation or dilutions necessary
- Completely safe to handle
- Prepared concentrations as low as 0.060 NTU
- Shelf life: 2 years from date of manufacture
- EPA approved standard for calibration
- Can be used to calibrate any turbidimeter for compliance reporting
- Quick delivery and total support, worldwide
- New low-level certified and FilterTrak standards



THERE'S ONLY ONE WAY TO BE SURE

Precise, pre-mixed Formazin solutions

StablCal® Stabilized Formazin Turbidity
Standards are true Formazin dilutions
developed for use in any turbidimeter. With
proprietary manufacturing technology, Hach
prepares StablCal Standards in precise
concentrations as low as 0.060 NTU for
conventional turbidimeters. Shelf life is
guaranteed for two years from the date of
manufacture. Whether you are monitoring
wastewater effluent, high-quality treated
drinking water or an industrial process stream,
you can be completely confident in the results
you obtain with Hach StablCal Stabilized
Formazin Standards.

StablCal is safe to handle

All StablCal standards are safe to handle in the lab. No regulation requirements restrict the shipment or disposal of StablCal.

Based on Formazin primary standards

Hach was the first to apply Formazin as a turbidity standard in the drinking water industry, more than 40 years ago. Since then, Formazin has been the only primary standard that is accepted virtually throughout the world for regulatory reporting. All other turbidity standards, both alternate and secondary, must be traced to it.

Formazin suspensions exhibit a wide range of suspended particle size and shape. Typically, Formazin particles are irregular in shape and range from 0.1 to 10.0 microns in size, closely matching the range of particulates found in real world samples. The highly predictable light-scattering properties of Formazin are the

basis of algorithm design for nephelometric instruments. Turbidimeter performance is consistently predictable when using StablCal Stabilized Formazin Standards.



StablCal Stabilized Turbidity Standards eliminate the time and labor of preparing dilutions. They can also reduce lab operating costs, since the proper preparation of Formazin requires Class A glassware and ultra-pure water.

Standards that are virtually impossible to duplicate in an ordinary laboratory

While Formazin primary standards can be prepared directly in the lab, the process is labor intensive and time consuming. Routine turbidimeter calibration requires the preparation of a series of dilute concentrations – a painstaking task that demands superb laboratory technique.

Low-level suspensions of Formazin prepared using the traditional method are even more demanding. Because they are stable for only a short time, fresh suspensions must be prepared for each use. Low-level suspensions are also extremely difficult to prepare with reliable

accuracy, since subtle errors in procedure can cause significant errors in the actual turbidity of the standard.

StablCal Stabilized Formazin Standards are equivalent in performance to Formazin primary standards, but StablCal requires no special preparation. StablCal assures accuracy by reducing the margin for error, while it greatly reduces labor and saves precious time in the laboratory. Calibrating your instrument with StablCal can be done quickly and accurately, with –

- No preparation of Formazin stock
- No dilutions
- Minimal handling
- No special glassware or difficult lab techniques

Enhanced stability saves time and labor

StablCal Stabilized Formazin Standards contain the same light scattering polymer as traditional Formazin primary turbidity standards. They are prepared from the same 4000 NTU stock Formazin standard as traditional dilute Formazin standards. But unlike low-turbidity Formazin standards, StablCal Stabilized Formazin Standards will not deteriorate over time.

This enhanced stability is what makes it possible to manufacture ready-to-use standards in concentrations as low as 60 mNTU (0.060 NTU). And because we manufacture StablCal in large quantities, we are able to provide a low-level standard that is far more accurate than a comparable Formazin standard prepared in an ordinary laboratory.

Manufactured to meet the world's toughest quality standards – ours

From raw materials to the finished product, our quality control is based on our belief that an ultrahigh quality standard requires an ultrahigh quality manufacturing process. To assure the stability of StablCal Stabilized Formazin Standards, our manufacturing process far exceeds both the requirements of Standard Methods and the capabilities of an ordinary laboratory.

Regulatory Approval

StablCal is an approved calibration standard for USEPA reporting and meets the requirements of the ISO 7027 directive.

The advantage of ultra-low level standards – Introducing FilterTrak Laser Nephelometers

Hach's ability to manufacture StablCal Standards in ultralow concentrations (as low as 60 mNTU) enabled us to create the next generation of instruments for measuring turbidity – FilterTrak Laser Nephelometers. This exciting new technology uses a light source that produces a highly collimated, monochromatic laser beam. Much more sensitive than conventional turbidimeters, the FilterTrak Laser Nephelometer is designed specifically for



measurements below 1.0 NTU. Now StablCal Standards offer analysts the same reliable means of calibration and verification for laser nephelometers as they do for conventional turbidimeters.

To learn more about the new FilterTrak Laser Nephelometers, call 800-227-4224 and ask for free literature #2393, or visit us at www.hach.com.



StablCal Standards are available in concentrations as low as 60 mNTU (0.060 NTU). Hach measures the turbidity of every low-level sample of StablCal that we make. The value, measured in mNTU, is printed on each container.



Each vial of StablCal is meticulously inspected by hand for the smallest imperfection, before and after filling. All vials are filled in an ultra-clean, dust-free environment.

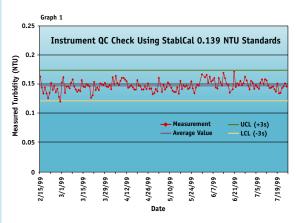


StablCal Stabilized Formazin
Turbidity Standards are available in
100 mL, 500 mL, 1L or 1 gallon
bottles, or in convenient sealed
vials. Sets are available that include
the specific range of NTU values
needed to calibrate any Hach
turbidimeter. They can also be used
to calibrate a turbidimeter made by
any other manufacturer.

Independent study results confirm the stability of StablCal

The results of a six-month study conducted by a large drinking water plant confirm that low-level StablCal standards provide superb accuracy and stability (see Graph 1, below).

The plant, a member of the Partnership for Safe Drinking Water, required a stable verification standard close to the turbidity of the samples measured. A single dedicated sample cell was filled

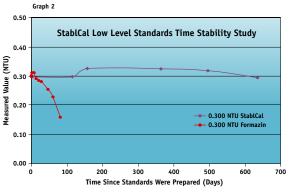


once per week with 0.139 NTU StablCal, and the standard was measured every day on a variety of laboratory turbidimeters prior to performing sample measurements.

Data shown on Graph 1 include the average measured value as well as the performance limits set by this water plant – the Upper Concentration Limit and Lower Concentration Limit, set at \pm 3 standard deviations from the mean (99% Confidence Interval).

During the five-month study, the average measured value of the StablCal standard was 0.145 NTU with a standard deviation of 0.012 NTU. The data points show no trend, upward or downward, over the entire period.

Especially at low NTU levels, the difference between the stability of StablCal and Formazin is dramatic (see Graph 2). Reliable stability over long periods eliminates the need to mix a fresh standard prior to every test.



StablCal Stabilized Turbidity Standards Specifications*

StablCal in bulk solution (100ml, 500ml, 1000ml and 1 gallon bottles)

Range: <0.1 NTU and 1 NTU to 7500 NTU

Accuracy: ± 5%

Shelf Life: 24 months from date of manufacture**

StablCal Certified Low-Level Verification Standards†

Range: 0.06, 0.1, 0.3, 0.5 NTU

Accuracy: ± 5% RSD

Shelf Life: 24 months from date of manufacture**

FilterTrak 660 Certified Standards†

Range: 100, 300, 500 and 800 mNTU

Accuracy: ± 5% RSD

Shelf Life: 24 months from date of manufacture**

StablCal Sealed Vial Calibration Standards†

ange: Kits available for all Hach Turbidimeters

Accuracy: ± 5%

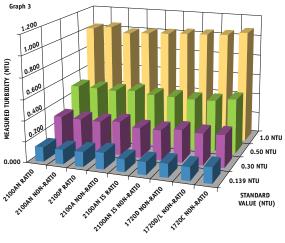
Shelf Life: 24 months from date of manufacture **

*Subject to change without notice.

Note: StablCal standards are guaranteed stable for 24 months from the date of manufacture. This ensures that the customer will obtain a minimum of 12 months of useful life from the products. Typically useful life will be closer to 24 months.

Superior reproducibility – for any turbidimeter

These test results prove that the advantages of using StablCal are obtainable with any turbidimeter. In Graph 3, the measured NTU values of four StablCal samples display outstanding consistency using nine different types of turbidimeters including infra-red and tungsten light sources and using ratio and non-ratio detector configurations.



^{**}Note: StablCal bottled standards should be used within 30 days of opening.

[†]Note: StablCal Certified Standards are individually assayed after each production lot. They are then re-assayed a week later to ensure uniformity and the actual value is recorded on the bottle together with the % RSD for the lot.

How to Order

Fast supply whenever you need it, anywhere in the world. Hach ships 95% of all orders in the USA within 48 hours. Overseas, Hach offices and authorized distributors are on call in over 100 countries to make sure that you receive the supplies you need, when you need them.

NTU Value	100 ml bottle Catalog #	500 ml bottle Catalog #	1000 ml bottle Catalog #	Sealed vials Catalog #
<0.1	26597-42	26597-49	26597-53	N/A
1	26598-42	26598-49	26598-53	N/A
10	26599-42	26599-49	N/A	N/A
18	26600-42	26600-49	N/A	N/A
20	26601-42	26601-49	26601-53	N/A
40	N/A	N/A	27463-53	N/A
100	26602-42	26602-49	N/A	N/A
180	26603-42	26603-49	N/A	N/A
200	26604-42	26604-49	N/A	N/A
800	26605-42	26605-49	N/A	N/A
1000	26606-42	26606-49	N/A	N/A
1800	26607-42	26607-49	N/A	N/A
4000	2461-42	2461-49	N/A	N/A
7500	Available in s	sealed vial only - part	number:	25842-02

StablCal Calibration Kits

Turbidimeter	100 ml bottles Catalog #	500 ml bottles Catalog #	1000 ml bottle Catalog #	Sealed vials Catalog #	
2100 P	26594-10	26594-00	N/A	26594-05	
2100 N / N IS	26621-10	26621-00	N/A	26621-05	
2100 AN / AN IS	26595-10	26595-00	N/A	26595-05	
2100 A	26591-10	26591-00	N/A	26591-05	
Ratio 2000 &					
Ratio/XR	26592-10	26592-00	N/A	26592-05	
18900 Ratio	26593-10	26593-00	N/A	26593-05	

Certified Low-level Verification Standards*

NTU Value	100 ml bottle Catalog #	500 m Catalo	l bottle g #	1000 ml bottle Catalog #	Sealed vials Catalog #
0.060	28053-42	N/A		28053-53	N/A
0.100	27233-42	N/A		27233-53	N/A
0.300	26979-42	N/A		26979-53	N/A
0.500	26980-42	N/A		26980-53	N/A
NTU Values	3 X 100 ml b Catalog #	ottles	3 X 1000 m Catalog #	ıl bottles	
0.1, 0.3 & 0.5 NTU	27146-00		27163-00		

^{*}Note: Actual values may vary from lot to lot and are individually assayed to nearest 0.001 NTU with standard deviation of less than 5 percent.

NTU Values	1 liter bottles Catalog #	1 gallon (3.78L) bottles Catalog #
Individual Values		
0.1 NTU	27233-53	27233-56
40 NTU	27463-53	27463-56
Calibration kits		
20 NTU	26596-00	Kit contains 4 bottles of 20 NTU StablCal (1 year supply) and instructions
Ultra Low Range (ULI Verification kit	R)	
0.1, 0.3 & 0.5 NTU	27163-00	N/A
Certified StablCa	l for FilterTrak 660	O Laser Nephelometer
100 mNTU	27881-53	N/A
300 mNTU	27882-53	N/A
500 mNTU	27883-53	N/A
800 mNTU	27884-53	N/A



For current price information, technical support and ordering assistance, contact the Hach office or distributor serving your area.

Hach Company is ISO 9001 Certified

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