Suspended Solids

DOC316.53.01139

Photometric Method[1]

Method 8006

5 to 750 mg/L TSS

Scope and application: For water and wastewater.

[1] Adapted from Sewage and Industrial Wastes, 31, 1159 (1959).

Test preparation

Instrument-specific information

Table 1 shows all of the instruments that have the program for this test. The table also shows sample cell and orientation requirements for reagent addition tests, such as powder pillow or bulk reagent tests.

To use the table, select an instrument, then read across to find the applicable information for this test.

Table 1 Instrument-specific information

Instrument	Sample cell orientation	Sample cell
DR 6000 DR 3800 DR 2800 DR 2700 DR 1900	The fill line is to the right.	2495402 
DR 5000 DR 3900	The fill line is toward the user.	
DR 900	The orientation mark is toward the user.	2401906 

Before starting

For turbidimetric methods, install the instrument cap or cover on all instruments before ZERO or READ is pushed.
Do not use the Pour-Thru Cell or sipper module (for applicable instruments) with this test.

Items to collect

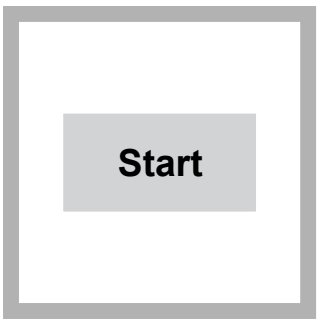
Description	Quantity
Beaker, 600-mL, polypropylene	1
Blender	1
Cylinder, 500-mL polypropylene, graduated	1
Sample cells (For information about sample cells, adapters or light shields, refer to Instrument-specific information on page 1.)	2

Refer to Consumables and replacement items on page 3 for order information.

Sample collection and storage

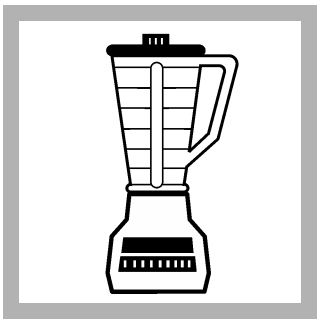
- Collect samples in clean glass or plastic bottles.
- To preserve samples for later analysis, keep the samples at or below 6 °C (43 °F) for up to 7 days.
- Let the sample temperature increase to room temperature before analysis.

Photometric procedure

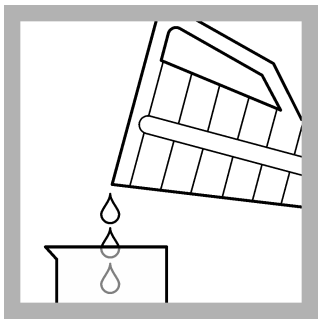


1. Start program **630 Suspended Solids**. For information about sample cells, adapters or light shields, refer to Instrument-specific information on page 1.

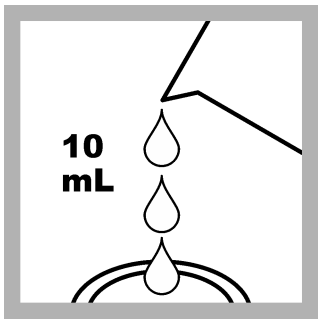
Note: *Although the program name can be different between instruments, the program number does not change.*



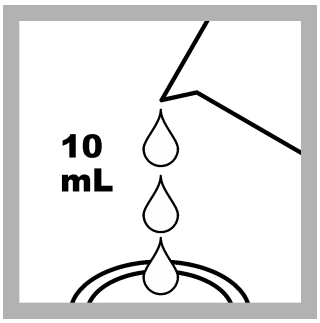
2. Blend 500 mL of sample in a blender at high speed for exactly two minutes.



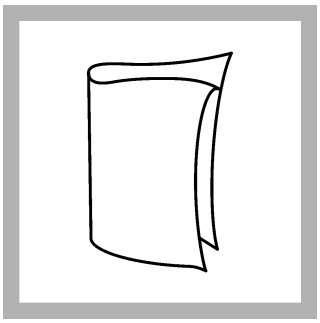
3. Pour the blended sample into a 600-ml beaker.



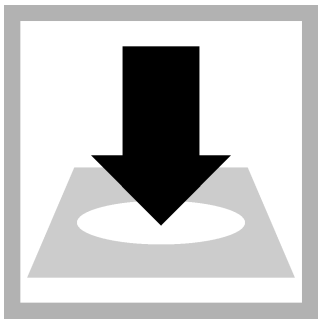
4. Prepare the sample: Stir the sample and immediately pour 10 mL of the blended sample into a sample cell.



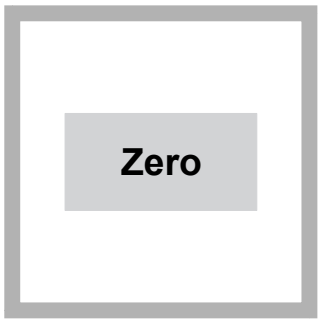
5. Prepare the blank: Fill a second sample cell with 10 mL of tap water or deionized water.



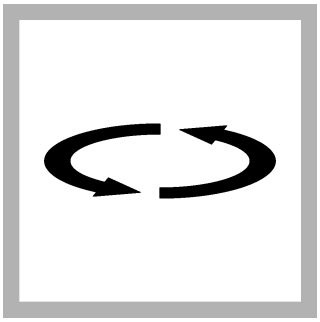
6. Clean the blank sample cell.



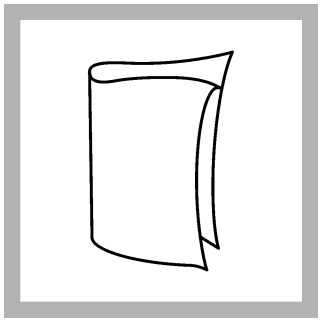
7. Insert the blank into the cell holder.



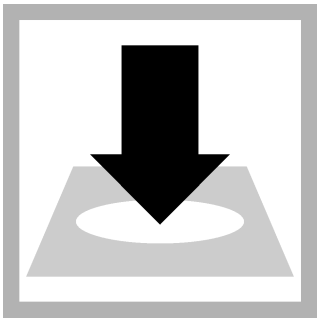
8. Push **ZERO**. The display shows 0 mg/L TSS.



9. Swirl the prepared sample to remove any gas bubbles and uniformly suspend any residue.



10. Clean the prepared sample cell.



11. Insert the prepared sample into the cell holder.

12. Push **READ**. Results show in mg/L TSS.

Interferences

Samples that absorb strongly at the measurement wavelength, such as blue dyes, may give false, high-bias readings. A user-entered calibration is advised for these samples.

Accuracy check

Standard solution method

Calibration for this test is based on the gravimetric technique with parallel sewage samples from a municipal sewage plant. For most samples, this calibration supplies satisfactory results. When higher accuracy is required, run parallel spectrophotometric and gravimetric determinations with portions of the same sample. Make the new calibration on the particular sample using a gravimetric technique as a basis.

Summary of method

This method of determining total suspended solids (TSS) is a simple, direct measurement which does not require the filtration or ignition/weighing steps that gravimetric procedures do. The USEPA specifies the gravimetric method for solids determinations, while this method is often used for checking in-plant processes. The measurement wavelength is 810 nm (DR 1900: 800 nm) for spectrophotometers or 610 nm for colorimeters.

Consumables and replacement items

Required apparatus

Description	Quantity/test	Unit	Item no.
Beaker, 600-mL, polypropylene	1	each	108052
Blender, 2-speed, 120 VAC option	1	each	2616100
Blender, 2-speed, 240 VAC option	1	each	2616102
Cylinder, graduated, 500-mL, polypropylene	1	each	108149

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