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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

GB/T 11901-1989

**Water Quality – Determination of
Suspended Substance – Gravimetric Method**

水质 悬浮物的测定 重量法

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Water Quality – Determination of Suspended Substance – Gravimetric Method

1 Theme Content and Applicable Scope

This Standard specifies the determination of suspended substance in water.

This Standard is applicable to the determination of suspended substance in surface water, groundwater, but also the domestic sewage and industrial wastewater.

2 Definition

The suspended substance in water indicates the solid substance that water sample passes through the filter membrane with pore size of 0.45 μ m, trapped on the filter membrane, dried to constant weight at 103~105°C.

3 Reagents

Distilled water or water with equal purity.

4 Instruments

4.1 Commonly-used laboratory equipment and the following instruments.

4.2 All-glass microporous membrane filter.

4.3 CN-CA filter membrane with pore size of 0.45 μ m, diameter of 60mm.

4.4 Suction filter bottle, vacuum pump.

4.5 Toothless flat-nose tweezers.

5 Sampling and Sample Storage

5.1 Sampling

Use detergent to clean polyethylene bottle or hard glass bottle. Then successively

rinse with tap water and distilled water. Before sampling, then clean for 3 times by the to-be-sampled water sample. After that, take the representative water sample of 500~1000mL; cap with stopper.

NOTE: the floating or submerging inhomogeneous solid substance don't belong to the suspended substance, which shall be removed.

5.2 Sample storage

The collected water sample shall be analyzed and tested as soon as possible. If placed, it shall be stored in the 4°C refrigerating box; but not exceeding a maximum of 7 days.

NOTE: no protective agent is allowed to be added, so as to prevent the distribution balance of substance between solid and liquid.

6 Procedures

6.1 Preparation of filter membrane

Clip the microporous filter membrane by flat-nose toothless tweezers; place into the weighing bottle with constant weight; move into bake oven to dry for half an hour at 103~105°C; after that take it out and place into the drier to cool off to the room temperature; weigh it; repeatedly dry, cool off, weigh till the weight difference between two weight measurement is ≤ 0.2 mg. Correctly place the microporous filter membrane with constant weight onto the filter membrane tray of the membrane filter (4.1); cover with supporting funnel; then use clip to fix. Use distilled water to wet the filter membrane, and continued to suck and filter.

6.2 Determination

Take 100mL of specimen that is mixed fully and uniformly. Make all the water pass through the filter membrane. Then use 10mL of the distilled water each time to wash for 3 continuous times; continue to suck and filter to remove the trace moisture. After stopping the suction and filtration, carefully take out the filter membrane loaded with suspended substance; place into the weighing bottle with constant weight; move into the bake oven to dry for 1 hour at 103~105°C; cool off to the room temperature, weigh it. Repeatedly dry, cool off, weigh it till the weight difference between two weight measurements is ≤ 0.4 mg.

NOTE: If too much suspended substance is entrained on the filter membrane, it may cause the filtration difficulty besides prolonging the drying time; in this case, take into consideration of the circumstance to take less specimen. If too little suspended substance is entrained on the filter membrane, it may increase the weighing error, influence the measurement accuracy; if necessary, the specimen volume can be increased; generally, 5~100mg of suspended substance amount can be taken as the applicable range of weighing specimen volume.

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