

YSI 3017M DPD Chlorine Analyzer Frequently Asked Questions (FAQs)

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Q: How does the YSI 3017M measure free or total chlorine? What method of detection does it use?

A: The 3017M uses the DPD (N, N-diethyl-p-phenylenediamine) colorimetric method for the determination of chlorine.

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Q: Does the 3017M measure free or total chlorine?

A: The 3017M measures free or total chlorine depending on the reagent set in use.

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Q: What is the difference between the reagents for free or total chlorine?

A: Free chlorine determination requires a buffer solution and a DPD indicator solution. Total chlorine determination requires the buffer solution and the addition of potassium iodide (KI) to the indicator solution.

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Q: Why is potassium iodide (KI) added to the DPD indicator for the determination of total chlorine?

A: Chlorine, in the presence of ammonia, will form chloramines. Chloramines are very slow to react with the DPD. However, chloramines react with iodide to form iodine. Iodine reacts with DPD to form the oxidation product.



YSI 3017M DPD CHLORINE ANALYZER
More information available at [YSI.com/3017M](https://www.ysi.com/3017M)



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Q: Should I measure free or total chlorine?

A: If there is any amount of ammonia at the 3017M sample site it is recommended to measure total chlorine. This will give a more accurate representation of the amount of chlorine in the sample. In the presence of ammonia, chlorine will form compounds called chloramines. These chloramines will not activate the free chlorine reagent and all combined chlorine will go unmeasured. Total chlorine measuring is recommended for drinking water applications that use chloramination in the disinfection process and it is also recommended in most wastewater applications.

If there is no ammonia present at the 3017M sample site it is recommended to measure free chlorine. Without the presence of ammonia there will not be any formation of chloramine compounds and there will be no need to measure total chlorine. For more information on the difference between free and total chlorine reagents, refer to questions three and four of the 3017M FAQ document.

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Q: What is the shelf-life of the 3017M reagents?

A:

Solution	Shelf Life
Before hydration (unopened, stored in a cool, dark environment):	
Indicator	5 years
Buffer	5 years
DPD Powder	1 year
After hydration/mixing:	
Room temperature 77 °F (25 °C):	30 to 40 days
Temperatures around 86 °F (30 °C):	~14 days
Temperatures of 41 °F (5 °C) or lower:	90 days

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Q: How long can the 3017M run unattended?

A: The 3017M will operate for at least 30 days, and in most cases, as long as 40 days between reagent changes.

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Q: What is the monthly maintenance requirement for the 3017M?

A: The 3017M requires a monthly reagent exchange that takes approximately 10 to 15 minutes to perform. The monthly consumable cost for the reagents is about \$60.

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Q: What is the lifetime of analyzer tubing?

A: Sample and reagent tubes should be changed every six months.

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Q: How do I clean the 3017M and how often?

A: The 3017M is cleaned by preparing a 50/50 mixture of household bleach and deionized water, and then injecting this cleaning solution through the cleaning port of the flowcell. Leave the cleaning solution in the flowcell for 10 minutes and then flush with deionized water to remove the contaminants.

The cleaning cycle for the 3017M is dependent upon the application. For clean samples, such as finished water from a drinking water plant, cleaning may not be necessary for up to 6 months or longer. For other applications, such as, wastewater final effluent, a 30-day cleaning cycle may be sufficient.

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Q: Does the 3017M require calibration? What is the calibration procedure?

A: No, the 3017M is factory calibrated and does not need to be recalibrated unless required by your regulatory agency.

If calibration is required, the 3017M is calibrated by a reference measurement taken from a handheld DPD colorimeter or lab measurement. When a calibration is performed it is important to make sure that a representative grab sample is taken for the reference measurement. After the reference measurement is complete, the calibration value is entered in the calibration settings of the 3017M. See section 5.9 in the manual for step-by-step instructions.

Another way to calibrate the 3017M is by analyzing a known primary standard. This calibration option is likely to result in an inaccurate calibration as it is highly subjective to error because it can be difficult to accurately dilute chlorine to create a stable standard.

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Q: How do I validate the 3017M's measurements?

A: To validate the 3017M, it is recommended to use a handheld DPD colorimeter or a laboratory measurement. In either case, it is crucial that a representative grab sample is taken for the most accurate results.

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Q: Is the 3017M EPA compliant?

A: Yes, the 3017M is compliant with US EPA regulations 40 CFR 141.74 (drinking water) and 40 CFR 136.3 (wastewater). The 3017M measurement method conforms with standard method 4500-CL-G, US EPA method 334.0, and ISO method 7393-2.

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Q: Does the 3017M require a precisely controlled, pressurized sample?

A: No, the 3017M does not need specific sample pressure to operate. This analyzer only requires a continuous and representative sample.

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Q: Is the 3017M NSF-61 certified?

A: No, and it doesn't have to be! Why you ask? Because the YSI 3017M chlorine DPD analyzer, like all online chlorine DPD analyzers, is a side stream analyzer. Meaning, the analyzer does not perform the measurement directly in the process. Instead, sample is piped out of the process and sent to the analyzer. The analyzer adds reagent to the sample, measures the water 'side stream', and then the sample is wasted to a drain. Therefore, the 3017M chlorine DPD analyzer, like all chlorine DPD analyzers, never comes into direct contact with finished, potable water and therefore does not need to be NSF-61 certified.

Is the Hach CI17 or C17SC NSF-61 rated?

No. As mentioned, no online chlorine DPD analyzer is NSF61 rated because they are all side stream analyzers.

NSF/ANSI Standard 61 (NSF-61) is a drinking water standard that establishes stringent requirements for the control of equipment that comes in contact with either potable water or products that support the production of potable water.

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Q: Does the analyzer need to be in an environmentally controlled environment?

A: It's ambient operational temperature is 5 to 55 °C (41 to 131 °F). The 3017M is designed to be installed indoors in most climates. The 3017M's enclosure rating is IP66 with the door latched.

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Q: What is the daily discharge rate of the 3017M?

A: This depends on the sample flow rate. At the minimum flow rate (50 mL/minute) the 3017M's daily discharge is 19 gallons/day. At the maximum flow rate (1000 mL/minute) the daily discharge rate is 380 gallons/day.

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Q: Can the 3017M be networked into the IQ SensorNet system?

A: Yes, by using an IQ SensorNet IC2 module, you can connect the 3017M to the IQ SensorNet network via the 3017M's 4-20mA output.

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