

## Frequently Asked Questions - BOD

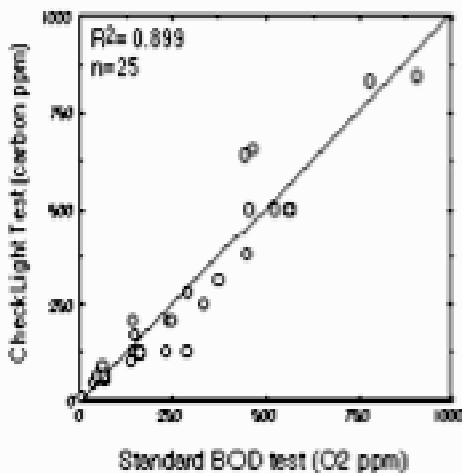
**Q: Are luminous bacteria dangerous? Do I need to be a trained microbiologist in order to be able to conduct CheckLight's assays?**

**A:** Luminous bacteria are not pathogenic and are harmless. No special skill is required to carry out the different tests other than very basic laboratory techniques (pipetting, dilutions etc) and equipment (pipettor, tips, luminometer).

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**Q: How does the test correlate with the standard BOD5 method?**

**A:** The graph below depicts an example of the correlation obtained between the two tests using samples taken from a municipal waste treatment plant.



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**Q: What are the benefits of obtaining rapid information on BOD levels?**

**A:** Acquiring this vital information in real time enables timely corrective measures in waste water processing, lowering running costs, and elimination of risk of heavy fines due to BOD limit excess.

**Q: What are the advantages of using this test over the standard COD test?**

**A:** Chemical Oxygen Demand measures the ability of hot chromic acid solution to oxidize organic matter. This analyzes both biodegradable and non-biodegradable (refractory) organic matter. The COD test can be completed in a few hours, but the results of the test are usually higher than the corresponding BOD test for several reasons. Many organic compounds which are dichromate oxidizable are not biochemically oxidizable - certain

BOD CALVER 2

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inorganic substances, such as sulfides, sulfites, thiosulfates, nitrites and ferrous iron are oxidized by dichromate, creating an inorganic COD, which is misleading when estimating the organic content of the wastewater. Moreover, the COD test is limited in sensitivity and requires the addition of toxic chemicals such as mercury to eliminate interferences such as chloride between estimated BOD and measured BOD. The luminescence-based BOD test truly measures the ability of the bacteria to digest the organic matter present in the sample.

**Q: Why is there a control in each assay?**

**A:** Readings of the negative control are needed in order to obtain the background reading of the cells without the sample. In addition, a set of positive controls is run in order to calibrate the system and provide the proper "translation" of light units to carbon equivalent units.

**Q: Can I "play around" with the volumes of bacteria, buffers and other assay conditions?**

**A:** No. It is extremely important to follow the test protocol instructions to the word. Since the test is very sensitive, any seemingly minor variations result in poor reliability.

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**Q: Can I reuse the provided test vials?**

**A:** Due to the high sensitivity of the assay, care should be taken to keep all vials, plastic tips, and pipettes extremely clean. Do not reuse test vials and do not wash glassware pipettors or pipette tips with detergent, acid, or solvents.

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**Q: What is the shelf life of the reagents?**

**A:** The shelf life of the freeze dried bacteria is one year when stored in a deep-freezer (-14°C +/-5°C). Reagent should not be stored in a self-defrosting freezer, which defrosts by warming up periodically. The assay buffers should be stored in a regular refrigerator (~4°C) and under no circumstances should they be frozen.

BOD CAL VER 1.0

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