

# Differentiating Bacteria

## Information Sheet

### Types of Bacteria

In most environments indigenous bacteria can be broken down into three groups of bacteria:

#### **Aerobic**

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This type of bacteria are the most desired bacteria in the system. These bacteria consume organics quickly but are not the most efficient type of bacteria. Their by-product is CO<sub>2</sub> and water. Therefore, they do not cause odors, which are undesirable in lift stations, collection lines, and waste treatment plants. They do require aerobic conditions or enough oxygen in the water to survive and accomplish the needs of organic consumption and reproduction. In most cases lift stations and collection lines do not have the proper levels of oxygen to survive, therefore the introduction of air to the water is recommended for good aerobic activity. With good aerobic activity this will also slow down the anaerobic activity that does cause the odors.

#### **Facultative**

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These types of bacteria are the workhorse of all bacteria. They do an excellent job of digesting organics and they can be either aerobic or anaerobic depending on the conditions present. Their by-product is mercaptans, sulfides, low levels of ammonias and methane. These bacteria survive extremely well and are suited best for this type of environment. Therefore, their growth is promoted at the waste treatment plant.

#### **Anaerobic**

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This type of bacteria are the least desirable bacteria in the system. Their by-product is Hydrogen sulfides (H<sub>2</sub>S), which creates a problem throughout the system. These types of bacteria are very efficient in consuming organics and that is why they are present in septic tanks or some waste treatment plants because they can consume large amount of organics over a long period of time. Many ways have been tried to control their activity, from chemicals to aeration devices. Chemicals can be successful but very expensive to use. Aeration devices are the least expensive but are not always reliable to keep the oxygen levels high enough to be successful. Anaerobic bacteria survive extremely well where oxygen is not present. In most cases this is about everywhere in the collection system, which is why odors are usually present somewhere in the system.

Ask one of our Representatives about how our Encapsulation Technology helps maintain an efficient environment for bacteria present in your system.

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