



# MASON CHEMICAL COMPANY

t e c h n i c a l   i n f o r m a t i o n



## Clostridium difficile

*Clostridium difficile* is a gram-positive, anaerobic, spore-forming bacillus that is responsible for the development of antibiotic associated diarrhea and colitis. *C difficile* was first described in 1935 as a component of the fecal flora in 2-3% of healthy adults and in as many as 70% of healthy infants. It was named *difficile* because it grows slowly and is difficult to culture.

This bacterium is primarily acquired in hospitals and chronic care facilities following antibiotic therapy. Normal gut flora resists colonization and overgrowth with *C difficile*. Antibiotic use, which suppresses the normal flora, allows proliferation of *C difficile*. It is the most frequent cause of outbreaks of diarrhea in hospitalized patients. In the United States alone, it causes approximately three million cases of diarrhea and colitis per year. *C difficile* can contribute significantly to hospital length of stay. One study demonstrated that 20% of patients admitted to a hospital for various reasons were either positive for *C difficile* on admission or acquired the microorganism during hospitalization. Although in most cases it causes a relatively mild illness, occasionally and particularly in elderly patients, it may result in serious illness and even death.

Mild cases of *C. difficile* disease are characterized by frequent, foul smelling, watery stools. Most cases develop 4 to 9 days after the beginning of antibiotic intake. Diarrhea usually stops when antibiotics are discontinued. More severe symptoms, indicative of pseudomembranous colitis, include diarrhea that contains blood and mucous, and abdominal cramps. An abnormal heart rhythm may also occur.

Individuals with *C. difficile* associated disease shed spores in the stool that can be spread from person to person. Spores can survive up to 70 days in the environment outside the body. These spores protect the organism against heat and chemical disinfectants. Colonization occurs by the fecal-oral route. It can be transported on the hands of health care personnel who have direct contact with infected patients or from environmental surfaces (floors, bedpans, toilets, telephones, stethoscopes etc.) contaminated with *C. difficile*.

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