

Antimicrobial Water Pipes



Over time, every water pipe and every tank becomes contaminated with hundreds of species of bacteria, fungi and algae, commonly known as biofilm.



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The growth of harmful microorganisms inside drinking-water distribution pipes and tanks results in a range of undesirable effects. Hence the need to include new, effective, durable and eco-friendly antibacterial agents. d₂p® is a proven antibacterial technology, specifically developed to protect plastic drinking-water pipes from the development and build-up of biofilm.

How microbes enter into distribution pipes

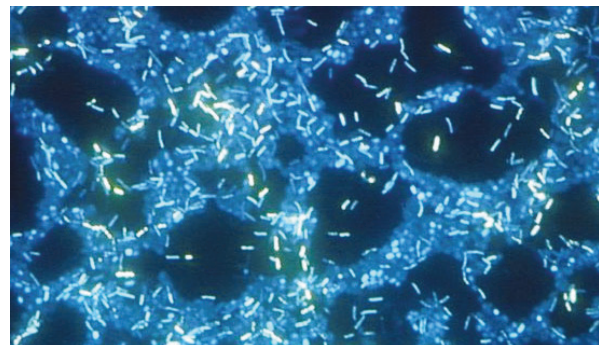
- Water in pipes is not sterile, regardless of the extent to which the water is treated.
- Microbes can enter the distribution pipes by a variety of pathways and populate a microbial biofilm on the inner surface of the pipes and storage tanks.
- Biofilms invariably develop in all drinking water distribution systems, despite the presence of any residual disinfectant introduced at the water-treatment works.

The Facts

- **Every year more than 3.4 million people die as a result of water-borne diseases, making it the leading cause of morbidity and mortality around the world.^[1]**
- **In any, home, hospital, food industry factory, school, office etc. Plastic pipes are today the backbone of water distribution systems.**
- **The expected life of plastic water pipes is more than 50 years.**
- Microbes which exist inside the distribution pipes have the ability to multiply and produce BIOFILM.
- Biofilm poses a threat by hosting many pathogenic and toxin-producing microorganisms which cause:
 - Aesthetic deterioration of water - change in color, odor, taste and turbidity.
 - Blockage of pipes.

Certifications and Compliances of the d₂p® 97000 Masterbatch:

- **NSF/ANSI 61** approved and certified for PE, PP and PVC pipes.^[2]
- **Passed** the ASTM E2180-07 Anti-fungal test with 99.99% kill rate as well as the qualitative ASTM G21-13 with no mould growth.
- **Passed** the ISO 22196:2011 Antibacterial test with 99.999% kill-rate.
- **Polymer passed** the migration test in the U.S. 21 CFR (US FDA) Part 177.1520 Clauses (c)(2.1) and (d).
- **Polymer passed** the migration test as per European Commission Regulation No. 10/2011.
- The active in d₂p® 97000 MBs is registered with the US EPA for the control of fungi and bacteria causing stain, odour and/or degradation of physical properties in polymers used in manufacturing or coating in food contact finished articles.



Polymicrobial biofilm epifluorescence.^[3]

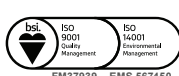


ISO/IEC 17065
Product Certification Body
#0216

Certification Program
Accredited by the
American National
Standards Institute

Disclaimer: The information provided is general information. For specific applications, please consult our Technical Department. It is the customer's responsibility to obtain regulatory approval for the intended purpose in the country or countries concerned.

NOTE: d₂p® 9700 masterbatch is supplied for use subject to the laws of the territory in which the water pipes and tanks are to be used, and Symphony gives no warranty as to the laws of any particular territory.



@ Symphony Environmental

1: According to World Health Organisation (2014)

2: <http://info.nsf.org/Certified/PwsComponents/Listings.asp?Company=C03280826Standard=061> (07 August 2018)

3: https://commons.wikimedia.org/wiki/File:Polymicrobial_biofilm_epifluorescence.jpg (16/8/2018)

