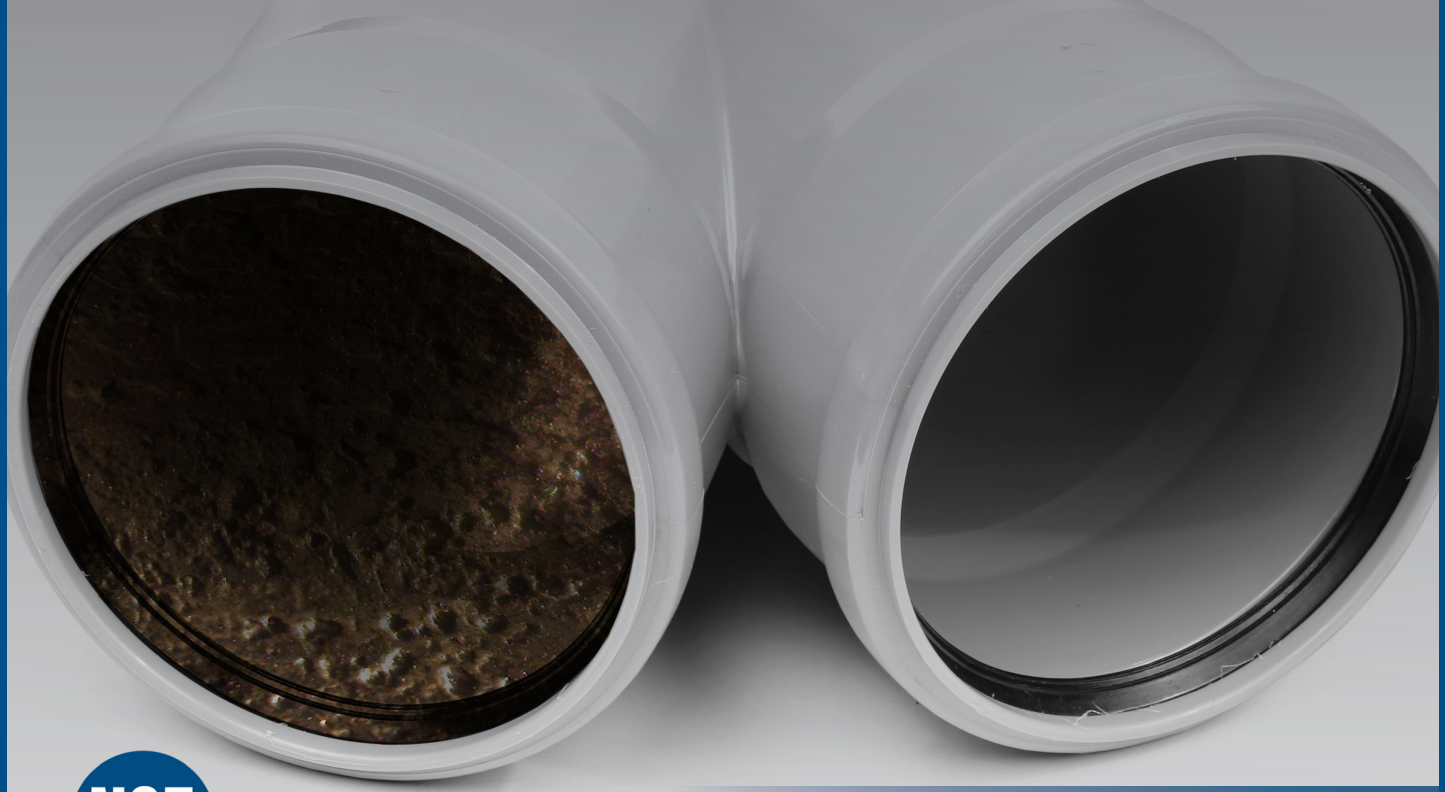
Making Plastic Smarter
Symphony environmental

Antimicrobial Water Pipes

Over time every pipe and every faucet becomes the 'safe home' to hundreds and thousands of species of bacteria, fungi and algae, commonly referred to as biofilm.

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



NSF®

www.d2p.net

d_2p technology

How microbes enter into distribution pipes

- Water in the pipes is not Sterile, regardless of the degree to which the water is treated
- Microbes can enter the distribution pipes via a variety of pathways and become entrained in the biofilm for later release
- biofilms invariably develop in all Drinking Water Distribution Systems (DWDSs), despite the presence of residual disinfectant

The Facts

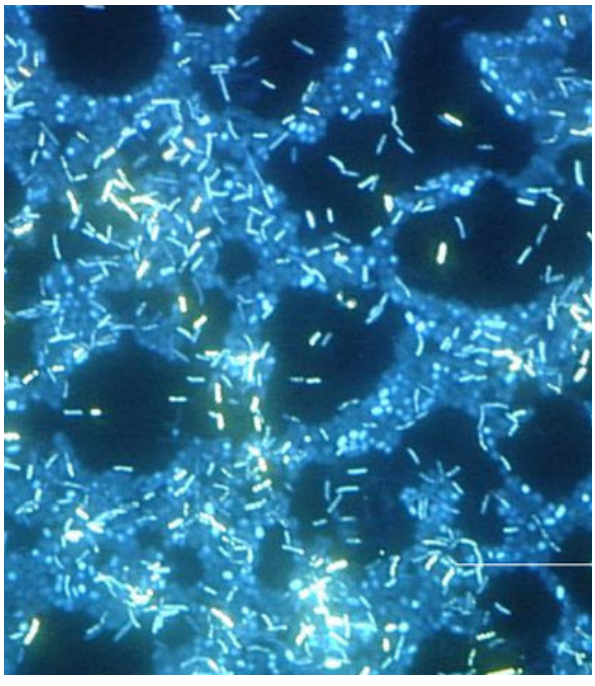
- **Every year more than 3.4 million people die as a result of water-related diseases, making it the leading cause of morbidity and mortality around the world** [1]
- **In any building, home, health care setup, food industry etc. pipes are the backbone of water distribution system**
- **Expected life of water supply pipe is more than 50 years**
- Microbes which survive in the distribution pipes possess the ability to grow and produce BIOFILM
- Biofilm poses a threat to human and animal health by hosting many pathogenic and toxins producing microorganisms by:
  - Aesthetic deterioration of water - change in color, odor, taste and turbidity of water
  - Blockage of pipes
  - Inefficacy of Disinfection Treatment

Certifications and Compliances of d_2p 97000 Masterbatch:

- **NSF/ANSI 61** approved and certified for PE, PP and PVC pipes[2]
- **Passed** the migration test as per the U.S. 21 CFR food and drug administration
- **Passed** the migration test as per European Commission Regulation
- **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
- The active in d_2p 97000 MBs is registered with the EPA for the control of fungi and bacteria causing stain, odour and or degradation of physical properties in polymers used to manufacturing or coating in food contact finished articles.

ANSI ACCREDITED
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.



Polymicrobic biofilm epifluorescence[3]

1: According to WHO (2014)
2: http://info.nsf.org/Certified/PwsComponents/Listings.asp?Company=C0328082&Standard=061 (07 August 2018)
3: https://commons.wikimedia.org/wiki/File:Polymicrobic_biofilm_epifluorescence.jpg (16/8/2018)

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