



# Technology for the healthcare industry

[www.d2p.net](http://www.d2p.net)

Making Plastic Smarter  
**Symphony**  
environmental



## **d<sub>2</sub>p is a family of technologies specifically designed for products used in healthcare settings.**

Plastics play a vital role in the healthcare industry today, especially in the light of the COVID-19 pandemic. They are essential for syringes, IV bags and personal protective equipment such as aprons, gloves and facemasks. They are also used extensively in incubators and dialysis machines and increasingly for furniture, fixtures and fittings.

The increase in microbes with resistance to antibiotics makes it essential to destroy them before they get into the human body. Antimicrobial plastics offer an extra layer of protection - reducing the number of harmful microbes on surfaces and thereby helping to prevent disease transmission. This protection is not sprayed or wiped on the surface - it is actually embedded within the plastic, so it will not wear off.

- **Antimicrobial**
- **Insecticidal technology**  
For rigid or flexible plastic products or netting
- **Biofilm prevention**





## New Antimicrobial Technology

d<sub>2</sub>p antimicrobial consists of a suite of masterbatches offering cost-effective protection against dangerous microbes on plastic products and other surfaces.

Microbes are everywhere. Each square centimetre of skin alone harbours around 100,000 bacteria, and a single sneeze can spray droplets infested with bacteria and viruses as far as 2 metres.

Surfaces of almost any kind can therefore be a continuing source of infection – unless they contain d<sub>2</sub>p.

Symphony's d<sub>2</sub>p 97000 masterbatch is compatible with a wide variety of surfaces including plastic, latex, rubber, nitrile, silicone, paint and inks.

The active ingredient is not silver-based. It is an organic chemical substance, tested against bacteria (both Gram (-) and Gram (+) types), fungi, yeasts, moulds and mildews and algae.

Independent test results, carried out according to ISO 21702-19 found a virus reduction of 99.9% in one hour.



## Test Methods:

**Against Bacteria** – ISO 22196 (against both Gram – and Gram + types)

**Against Fungi** – ASTM E2180 and ASTM G-21

**Against Viruses** – ISO 21702-19 and a modified ISO 22196

**Against Algae** – ASTM D-5589

## Range of applications:

**Food:** Including packaging, food containers, cutting-boards, tray tables.

**Medical / Hygiene:** Including mattress-covers, protective equipment e.g. overalls, face masks, hair nets, caps, gloves, garbage /shopping/laundry bags.

**Office:** Including computer keyboards, mice and mouse-mats, telephones, and credit cards.





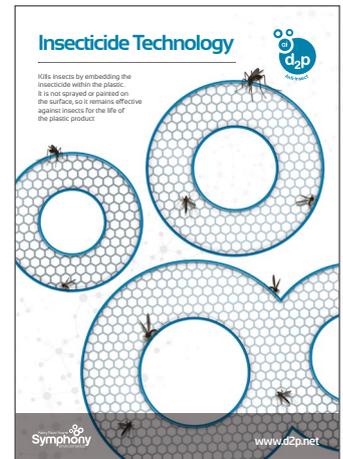
## Insecticidal Technology

### Makes plastic surfaces lethal to insects

Many dangerous diseases are spread by insect vectors, including Malaria, Dengue and Zika virus. d<sub>2</sub>p AI kills insects by embedding the insecticide within the plastic. It is not sprayed or painted on the surface so remains effective against insects for the entire lifetime of the plastic product.

Suitable for a range of applications in rigid or flexible plastic products or netting (woven and non-woven)

- Mosquito nets (LLIN)
- Table-tops and counters
- Wall, window, ceiling and floor surfaces

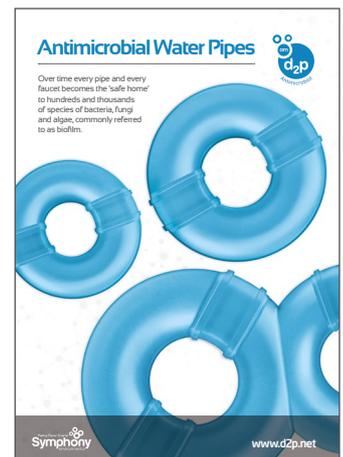


## Antimicrobial Water Pipes and Tanks

Plastic pipes are the backbone of water distribution systems, but over time, every water pipe and every tank becomes contaminated with hundreds of species of bacteria, fungi and algae, commonly known as biofilm.

This growth of undesirable microorganism inside drinking-water distribution pipes and tanks results in a range of undesirable effects.

- Biofilm can host many pathogenic and toxin-producing microorganism
- Contributes to the aesthetic deterioration of water – i.e. change in colour, odour, taste and turbidity
- Can eventually block small-bore pipes.



Hence the need to include new, effective, durable and eco-friendly antimicrobial agents. d<sub>2</sub>p<sup>®</sup> is a proven antimicrobial technology developed to protect plastic drinking-water pipes and tanks from the development and build-up of biofilm.

NOTE: it is the responsibility of the user of d<sub>2</sub>p to ensure that applicable regulations in the Country, State or Province concerned, are complied with before placing the finished-product on the market.

Safe  
Affordable  
Effective

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