

The Hygiene Revolution™

Corporate Hygiene: *Improve employee attendance*

The Byotrol's hygiene products are alcohol-free. It is scientifically proven to be more effective, more gentle and longer lasting than alcohol based products - and it is more cost effective too!



Minimize the spreading of germs in your office

Powerful:

Independently tested to be effective against many pathogens commonly transmitted by hands including *Listeria*, *S. aureus*, *E. coli*, *Salmonella*, *Herpes Simplex Virus* and *H1N1 Swine Flu*.

Longer-Lasting:

Long-lasting and continues to work even after it dries, providing up to **6 hours protection** on hands and 24 hours on hard surfaces.

Gentle:

Byotrol does not strip away the skin's natural oils and does not lead to dermatitis, often associated with alcohol-based sanitisers.

Antimicrobial Hand Sanitiser



LONG LASTING PROTECTION	Byotrol	Alcohol
6 hour protection on skin against germ re-colonisation	✓	X
POWER		
Broad spectrum kill	✓	✓
Speed of kill (15 seconds)	✓	✓
Effectiveness of kill (EN 1500)	✓	✓
GENTLENESS		
Gentle on skin	✓	X
Does not dry or crack skin	✓	X
Does not strip skin of natural oils	✓	X
ADDITIONAL BENEFITS		
Low cost	✓	X
Non-hazardous / non-flammable	✓	X
Environmentally safe	✓	X

Bacterial Fast Kill

EN1276, demonstrated **>log 5 in 30 seconds** with Byotrol hand foam against the following bacteria:

- ✓ Pseudomonas aeruginosa
- ✓ Staphylococcus aureus
- ✓ Enterococcus hirae
- ✓ Streptococcus pyogenes
- ✓ Salmonella typhimurium
- ✓ Corynebacterium jeikeium
- ✓ Staphylococcus epidermidis

EN1276 suspension test against E.coli. Byotrol products achieve +log 7 in 30 seconds

Formulation	E. coli K12 NCTC 10538 30 Seconds
Byotrol hand wash	7.98
Byotrol hand foamer	8.03

EN 14476 Virus fast kill

EN14476 at Mikrolab (Hamburg)	
Influenza A Virus H1N1	99.99% Kill in 15 sec
Herpes Simplex Virus type 1	99.99% Kill in 15 sec

Superior Performance on Hands:

Experiment Details: Hand were sanitised with Byotrol and two market leading brands and left for 1 hour. Hands were then seeded with E. coli K12 and allowed to air dry for 5 minutes.

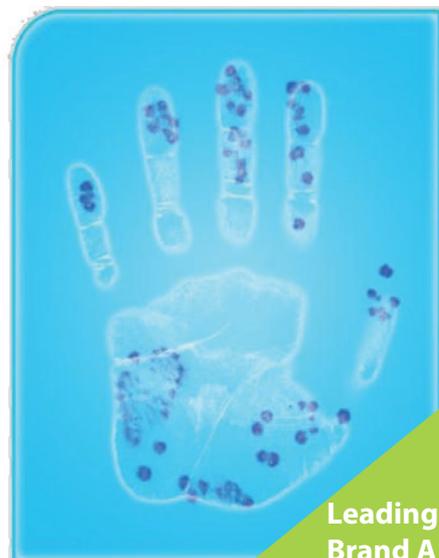
Byotrol Hand Sanitiser (Active - Byotrol G32)

(Active - Triclocarban)

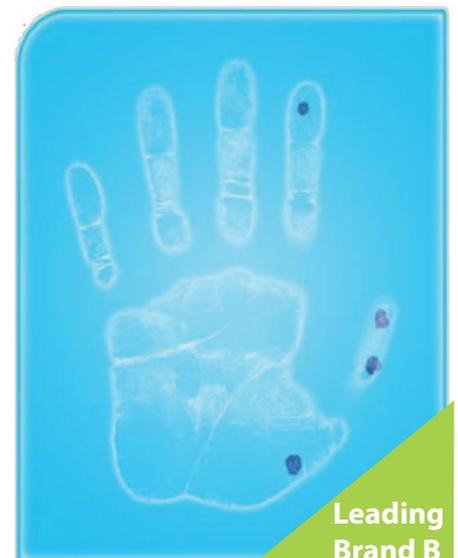
(Active - Alcohol)



After 1 hour



After 1 hour



After 1 hour

Antimicrobial Sanitising Wipes

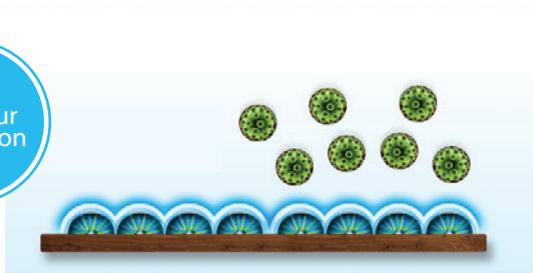
1000-wipe tub



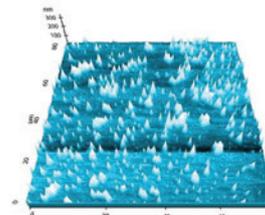
Application Areas:

Convenient to use, quick drying and no rinse. Can be used as a terminal sanitiser for cleaning office furniture, keyboards, monitors, laptops, cell phones, iPads and general office equipment like printers etc. It can also be used to replace water use at restroom basins.

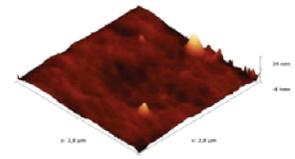
24 hour protection



This AFM micrograph shows the distribution of Byotrol on a surface. Note how it creates an incredibly hostile environment for all microbes.



Byotrol

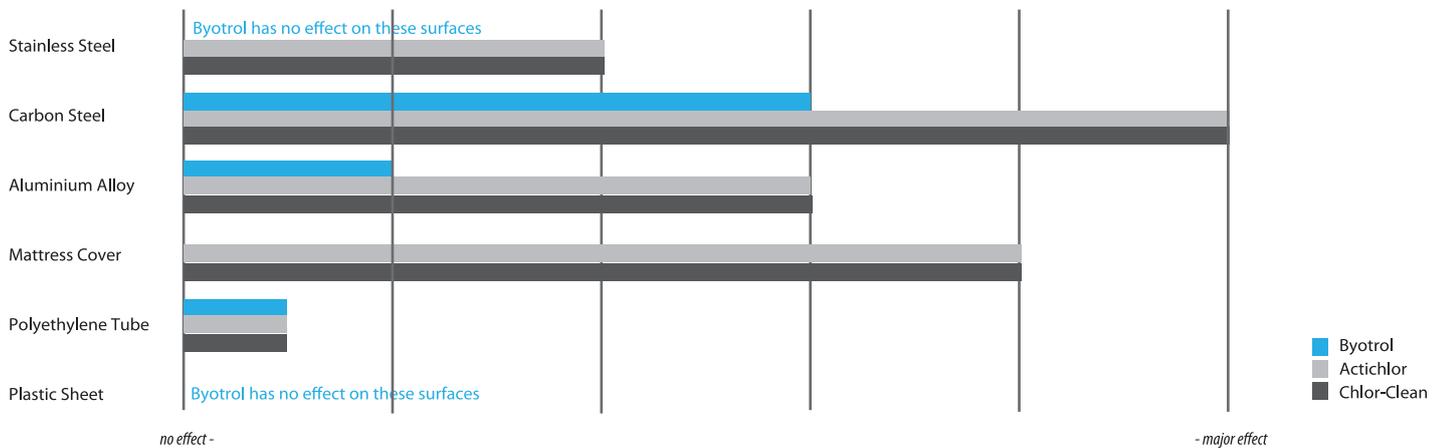


Quaternary Ammonium Compound

Byotrol is gentler than bleach

Byotrol is alcohol and bleach-free and has a much lower hazardous chemical rating than the alternatives. Many chemicals attack the surfaces that they are trying to disinfect; alcohol and bleach-based products oxidize many materials, damaging and prematurely ageing them. Byotrol has been externally tested to be as gentle as water, therefore it will not degrade surfaces nor the skin's residual defences.

Corrosive effect of immersion testing after 28 days



Byotrol kills / destroys

Bacteria

- ✓ Campylobacter jejuni
- ✓ Clostridium difficile (veg)
- ✓ Corynebacterium jeikeium
- ✓ Escherichia coli
- ✓ Escherichia coli O157:H7
- ✓ Enterococcus hirae
- ✓ Klebsiella pneumoniae
- ✓ Listeria monocytogenes
- ✓ Pseudomonas aeruginosa
- ✓ Salmonella typhimurium
- ✓ Staphylococcus aureus
- ✓ Staphylococcus epidermidis
- ✓ Streptococcus pyogenes
- ✓ Yersinia enterocolitica
- ✓ Acinetobacter baumannii

Viruses

- ✓ Herpes simplex Type 1
- ✓ Influenza type A (H1N1 - Swine Flu)
- ✓ Murine Norovirus (surrogate for Norovirus)
- ✓ Feline Calicivirus (surrogate for Norovirus)
- ✓ Rotavirus

Fungi & Yeast

- ✓ Aspergillus brasiliensis
- ✓ Candida albicans
- ✓ Saccharomyces cerevisiae
- ✓ Trichophyton interdigitale
- ✓ Trichophyton mentagrophytes
- ✓ Trichophyton rubrum

Byotrol is manufactured under licence by Byoworks (Pty) Ltd.

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SANS 1853