

# Stay Fresh

## Polygiene Technology in paints and coatings



**Polygiene®**  
STAY FRESH

**Polygiene** Malmö 2010-06-19

# Polygiene – presence and support around the globe



**World headquarters:**

**Sweden**

**R&D and technical support :**

**Sweden and UK**

**Representation and partners :**

**Europe, Asia (Taiwan, Thailand and Japan), Australia and the US  
Korea and China coming**

# What is Polygiene

“Polygiene technology breaks the transmission path of disease by eliminating microbes on contact”.

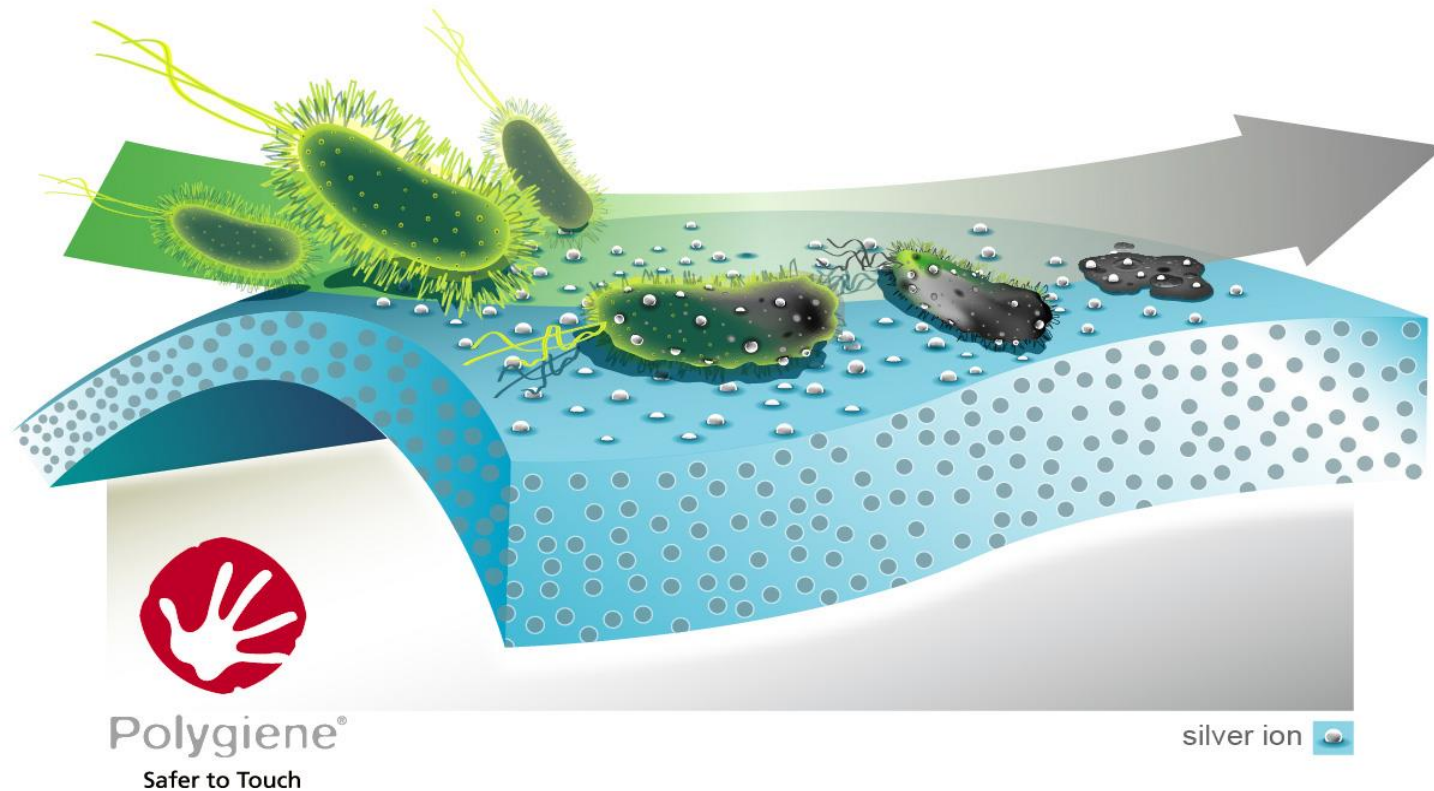
- **An additive which gives antibacterial effect in numerous materials, such as:**
  - All types of plastics
  - Laminates
  - Textile
  - Paints, lacquers and gel coatings
  - Paper
  - Porcelain
  - Anodized aluminium
- **An anti-SARS CoVirus with a proven effect on:**
  - Amino moulding compounds
- **An anti-Avian Flu Virus (H5N1) with a proven effect on:**
  - Laminate
  - Textile

# Silver – the effective ingredient in Polygiene

- Silver is a **broad-spectrum antimicrobial agent** that controls yeast, mold, and bacteria, including methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *enterococci* (VRE), when it is provided at an appropriate concentration.
- Silver **kills microbes on contact** through multiple mechanisms of action, such as inhibiting cellular respiration, denaturing nucleic acids, and altering cellular membrane permeability.

# Polygiene – how it works

Polygiene® technology – Inhibiting the growth of microbes



1. The silver is homogenously distributed throughout the material
2. Silver migrates to the surface
3. Silver ions kills the bacteria on the surface by penetrating the cell membrane

# Benefits with Polygiene

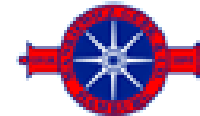
- Broad spectrum antimicrobial
  - Works against bacteria, molds, fungi, virus and algae
- Durable
  - Inorganic, not leaking technology
- Improve indoor air quality
  - Low VOC. No molds → no toxins
- Environmentally friendly
  - Replace leaking conventional biocides
- Heat Stability
  - Stabile up to 600C

# Products with Polygiene



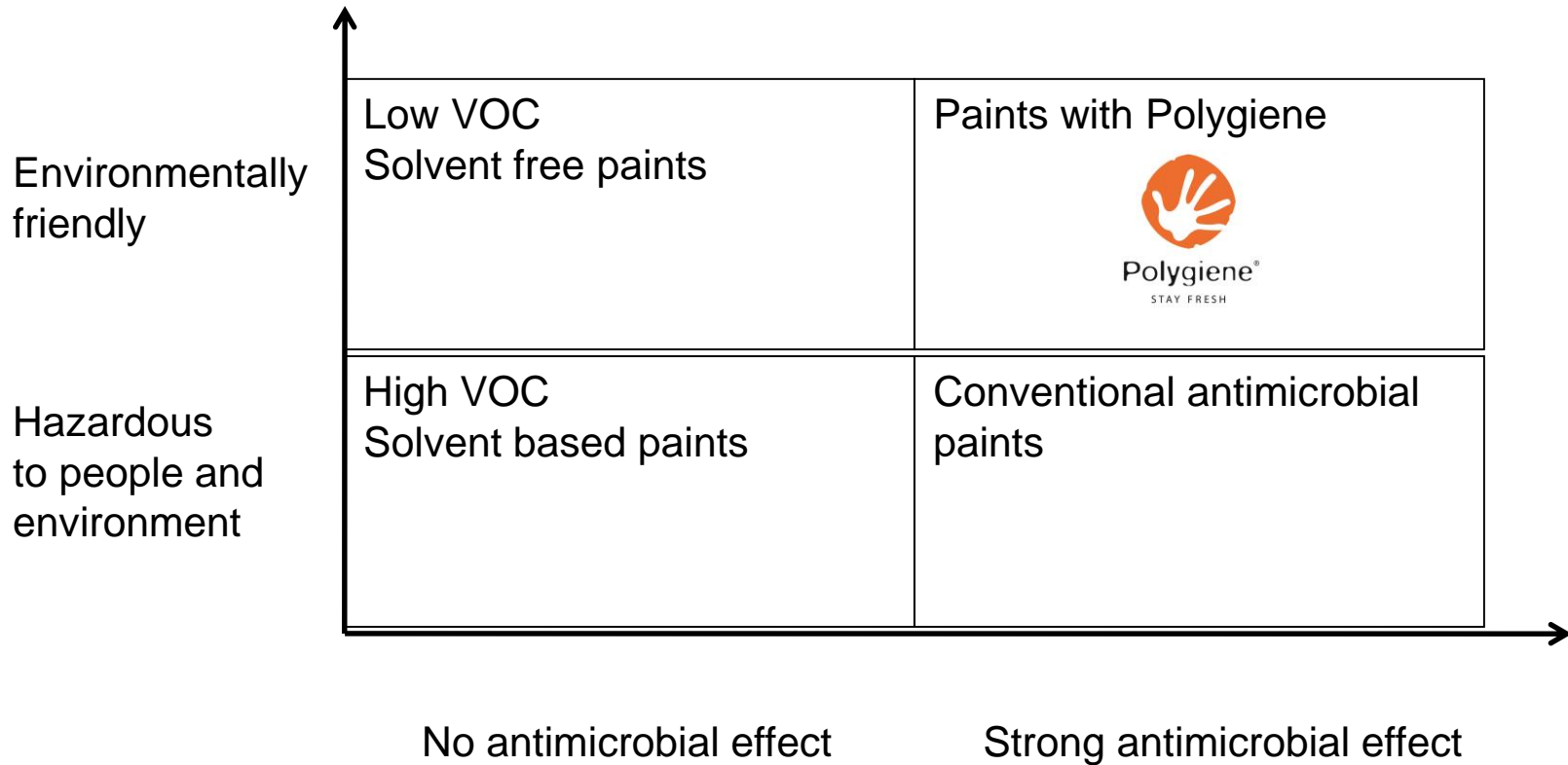
- Water based acrylic paints
- 2-K PUR coatings
- Clear lacquers
  - Metal
  - Plastics
  - Wood
- Epoxy coatings
- PU coatings
- Powder coatings

# Antimicrobial paints and coatings containing Polygiene





# Coating segment





Polygiene®  
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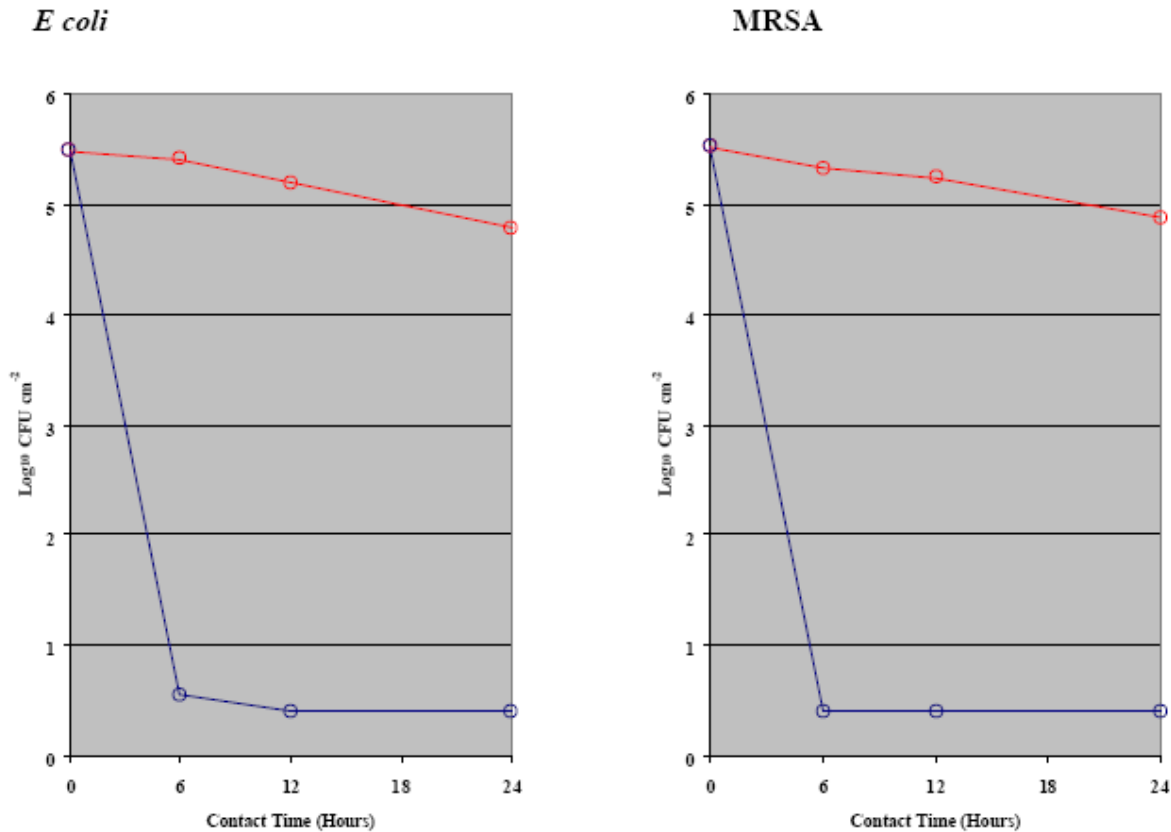


# Antimicrobial testing

Determination of antibacterial activity  
against MRSA and E coli using a  
method based on Japanese Industrial  
Standard JIS Z 2801 (ISO 22 196)

# Microbial testing on paint

Figure 2: Survival of MRSA and *E coli* at 65% Relative Humidity

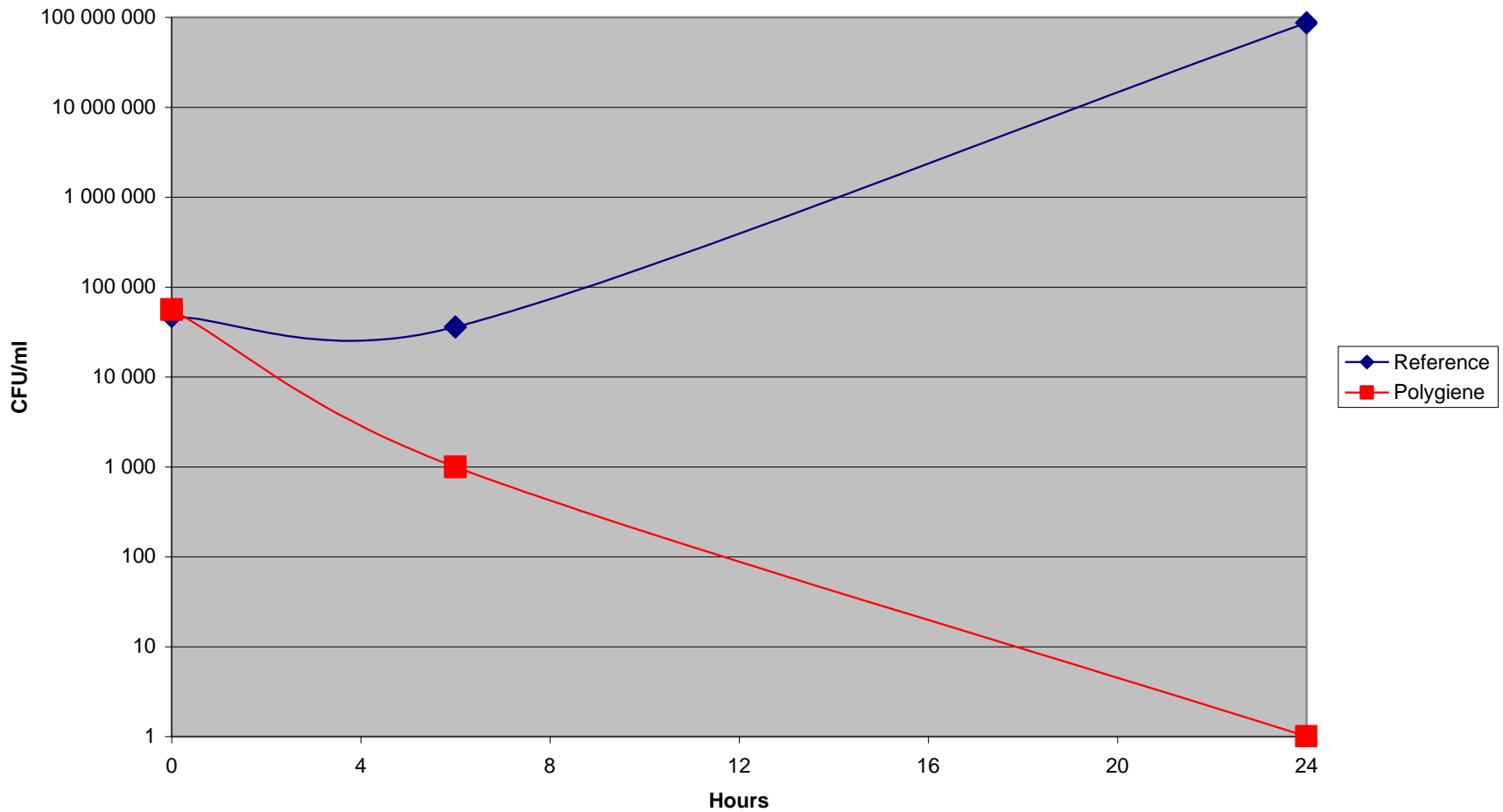


- Control  
- Polygiene



# Coated metal

E-coli coated metal surface



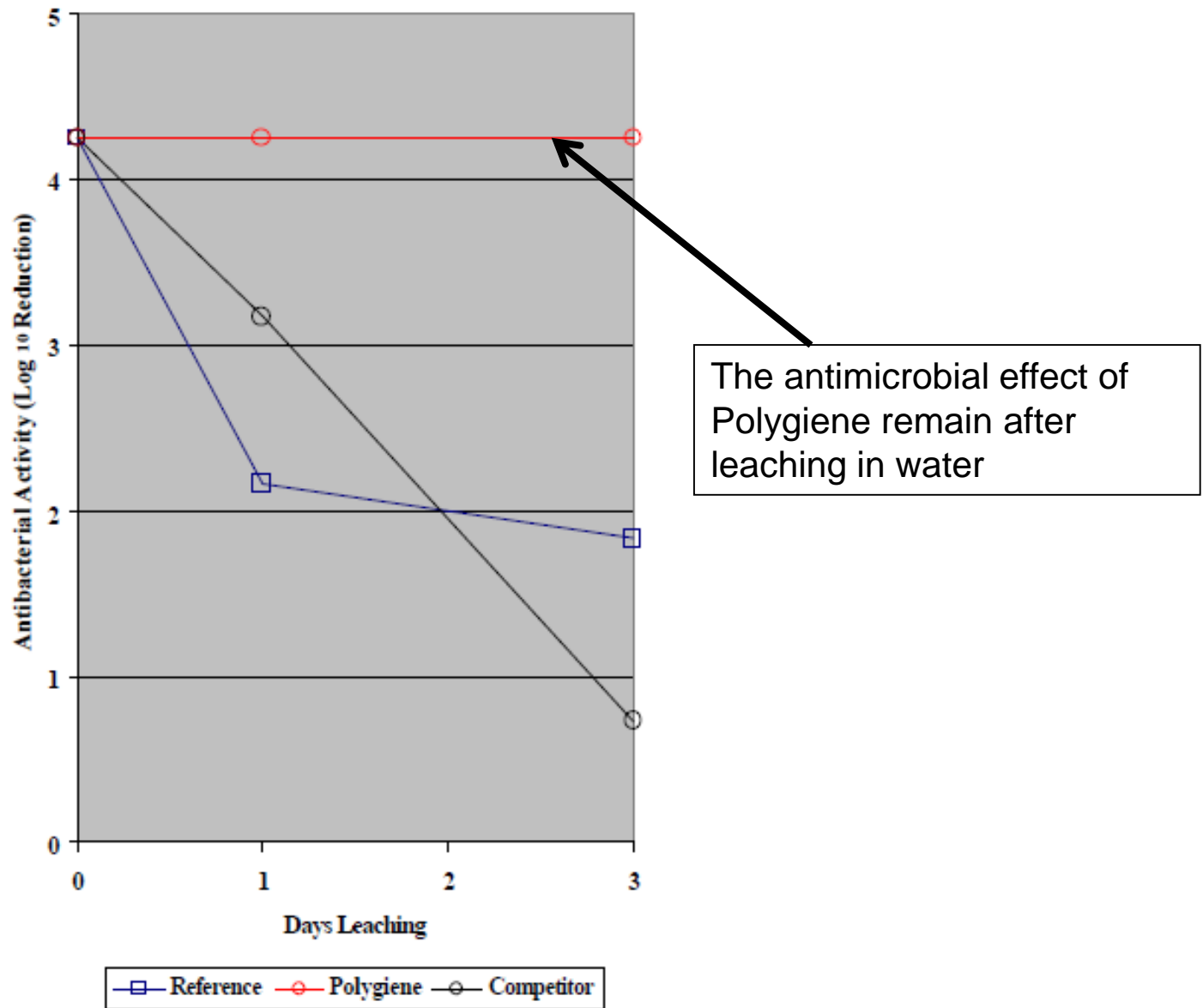
# Ageing of paint applied on substrate

If paint contain in-can preservative or other organic compounds with antimicrobial effect, the samples need to be aged in order to remove the volatile components and show the long term effect of the silver additive. **Leaching painted substrates in room tempered water for 3 days**, removes the effect of in-can preservatives and triclosan.



Figure 2: Effect of Leaching on Antibacterial Activity

*Escherichia coli*



The antimicrobial effect of Polygiene remain after leaching in water





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Please visit us at: [www.polygiene.com](http://www.polygiene.com)

