



# Introducing Preservation Systems From Lonza

**Ramspec**  
**13<sup>th</sup> October 2016**  
**Phil Clegg (EMEA)**

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**Lonza**

Protecting Your Business

**‘Lonza protects your business. We are dedicated to ensuring your manufacturing facilities remain free from contamination and your products are delivered to your customers without spoilage. We offer our globally recognised Proxel<sup>®</sup> range of preservatives combined with world class regulatory and technical support that you can trust’**

# About Lonza



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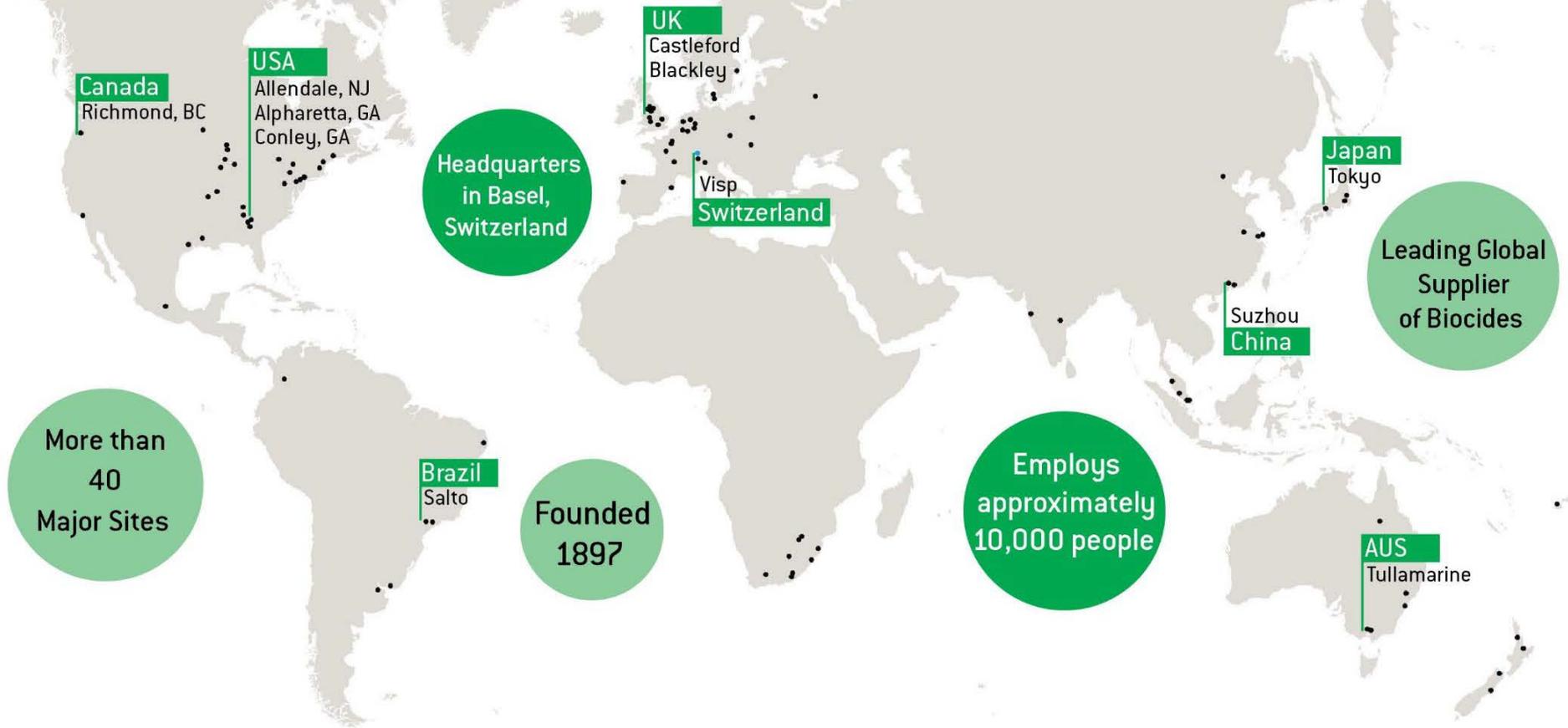
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# Lonza: A Global Company



## Lonza offers market support for biocide use

- Supplying biocides requires complex registration and regulatory compliance – Lonza understands how to do this correctly
- We work with all leading global agencies and are well placed to advise on future regulatory changes
- Our expertise extends into all areas of biocide use



Let Lonza guide you through the regulatory landscape

# Your Preferred Biocide Supply Partner

## Broad biocide portfolio

- In-can biocides
- Dry film biocides
- Disinfectants
- Plant hygiene chemicals

## Global technical support

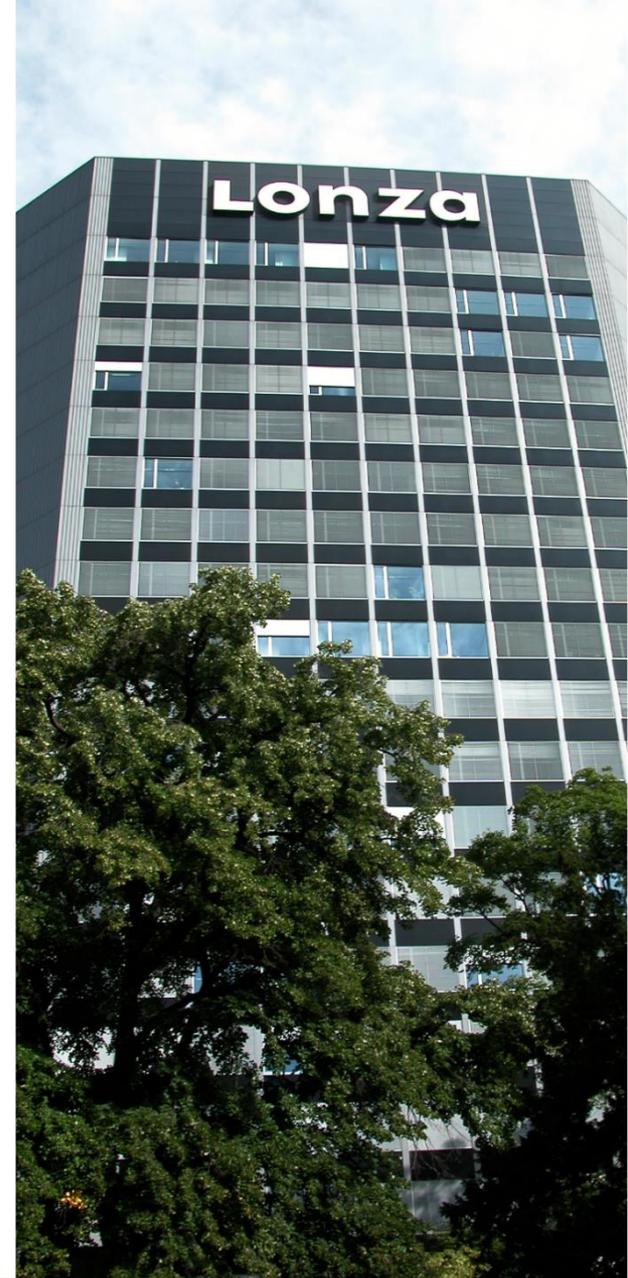
- Microbial challenge testing
- Customer trouble-shooting
- Organism identification
- Analytical testing

## Full plant hygiene service

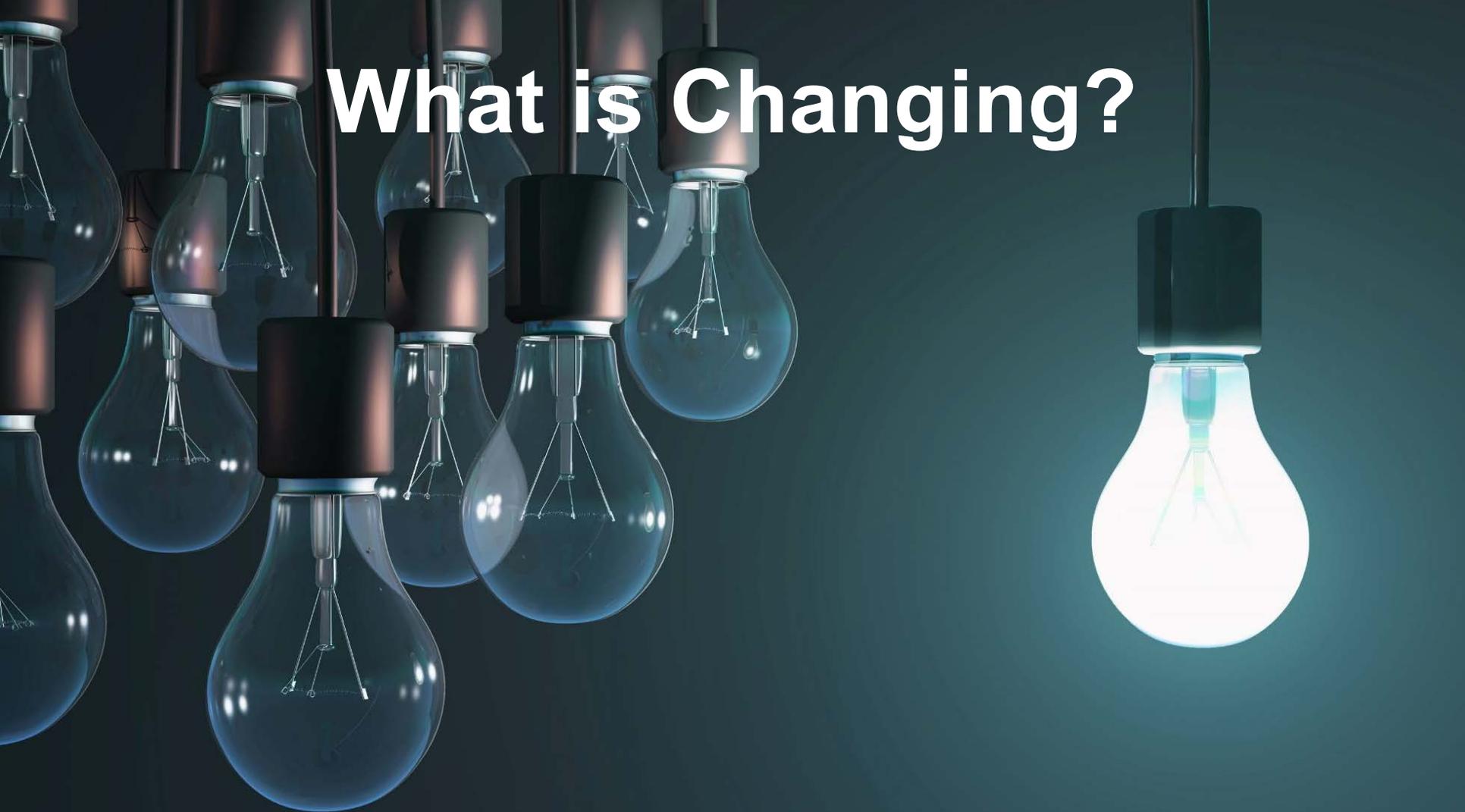
- Site visits
- Operator training
- Tailored reports for optimum biocide performance and manufacturing best practices

## Regulatory expertise

- Leading expert in biocide regulation and support
- Trusted partner to offer accurate advice to our customer



# What is Changing?

A cluster of several unlit incandescent light bulbs hanging from black cords against a dark blue background. On the right side, a single light bulb is illuminated, glowing with a bright white light. The other bulbs are dimly lit, showing their internal filaments.

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# Risk Assessment Committee Announcement

The following points summarise the opinion adopted by the Risk Assessment Committee in March 2016:

- MIT has been classified as a highly potent skin sensitiser and will require labelling as H317 (formerly R43) with a specific concentration limit (SCL) of 0.0015% (15ppm) and above
- MIT will be reclassified as fatal if inhaled (acute Tox.2 H330);
- MIT will be reclassified as toxic if swallowed and if in contact with skin (acute Tox. 3 H301 and H311);
- MIT will require labelling as causing severe burns and eye damage (Skin Corr. 1B H314);
- MIT has been classified as very toxic to aquatic life with long lasting effects (Aquatic Acute 1 H400 and Aquatic Chronic 1 H410)
- Full details can be found on the ECHA website at:  
<https://echa.europa.eu/documents/10162/b32e77aa-b720-4f66-ad16-a413dadf1631>

Timing for change are not currently clear but if fully adopted, the new labelling will be required within two years

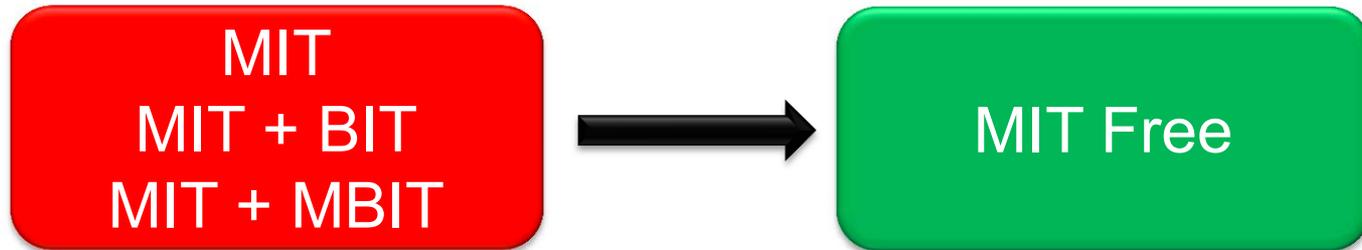
# New proposed >15ppm MIT Labelling Requirement

This labelling could be required for >0.06% of a 2.5%MIT/2.5%BIT formulation

Hazard class	Pictogram	Signal word	Code	Hazard Statement
Sensitisation, Skin	GHS07 	Warning	H317	May cause an allergic skin reaction

- This is the same labelling requirement as >500ppm BIT
- Most biocide users are expected to look for alternative preservation systems to avoid this type of labelling

## Changing Landscape Due to MIT Restriction



- New labelling for MIT is expected to limit use from up to 1000ppm to a maximum of 15ppm within 2 years.
- The potential impact is that MIT based preservation systems will require use of warning symbols at typical dose levels.
- Replacing a preservation system can take up to two years so the time to start looking for an MIT free replacement is now.

**EUROPEAN MANUFACTURERS ARE ALREADY MOVING AWAY FROM MIT BASED PRESERVATION SYSTEMS**

# MIT Free Alternatives



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# Changing Landscape Due to MIT Restriction

- Methylisothiazoline-3-one (MIT) has been one of the 'building block' active ingredients for in-can preservation in Europe
- In March 2016, the RAC announced an opinion that MIT should be considered a potent skin allergen and safe use levels should be significantly restricted

**As your supply partner, we can guide you to an MIT free alternative way to preserve your products and your reputation**



# MIT Free Product Family

**Proxel<sup>®</sup>  
BZ Plus**

**Proxel<sup>®</sup>  
LS**

**Proxel<sup>®</sup>  
AQ**

**Proxel<sup>®</sup>**  
Preservatives

**Lonza continues to innovate and new MIT free formulations will be added to our portfolio in 2016 and 2017**

# Proxel<sup>®</sup> Family Overview

	Proxel <sup>®</sup> BZ Plus	Proxel <sup>®</sup> LS	Proxel <sup>®</sup> AQ
Active content	5% BIT + 5% Zinc Omadine	2% BIT + 8% Sodium Omadine	9.25% BIT
Description	White dispersion	Pale yellow solution	Clear/pale yellow solution
VOC free	Yes	Yes	Yes
Viscosity	3500 – 5000 mPa	1 – 5 mPa	1 – 5 mPa
pH	6 – 8.5	9 – 9.5	11 – 12.5
Suggested dose	0.05 – 0.3 %	0.1 – 0.4 %	0.1 – 0.4 %

# Proxel<sup>®</sup> BZ Plus Preservative (5% BIT + 5% ZnPT)

- Combination of two highly effective active ingredients with different modes of action gives a broad spectrum of activity
- Effective in a wide range of applications: paints, coatings, polymer emulsions and adhesives
- No volatile components
- Temperature and pH stable
- Cost effective
- Compatible for use in food contact applications
- Well established with a proven track record



# Results with Proxel<sup>®</sup> BZ Plus Preservative

- In an industry standard antimicrobial challenge test, evaluated in preserved products with differing microbial susceptibility

**Evaluated at a fixed dosage of 0.09%**

Material	pH	Challenge Type	Pass level
Styrene acrylate paint	8.2	Bacterial	0.09%
Latex matt paint	9.2	Bacterial	0.09%
Carboxylated styrene/butadiene copolymer latex	7.1	Bacterial	0.09%
Vinyl acetate polymer emulsion	4.8	Fungal	0.09%
Styrene acrylate polymer emulsion	8.7	Bacterial	0.09%
Rosin based adhesive	8.3	Bacterial	0.09%
Paraffin wax emulsion	8.9	Bacterial	0.09%
Calcium carbonate slurry	9.4	Bacterial	0.09%

# Proxel<sup>®</sup> LS Preservative (2% BIT + 8% NaPT)

- Combination of two highly effective active ingredients with different modes of action gives a broad spectrum of activity
- Effective in a wide range of applications such as paints, coatings, polymer emulsions and adhesives
- No volatile components
- Temperature and pH stable
- Cost effective
- Low viscosity for easy handling
- Does not contain heavy metals



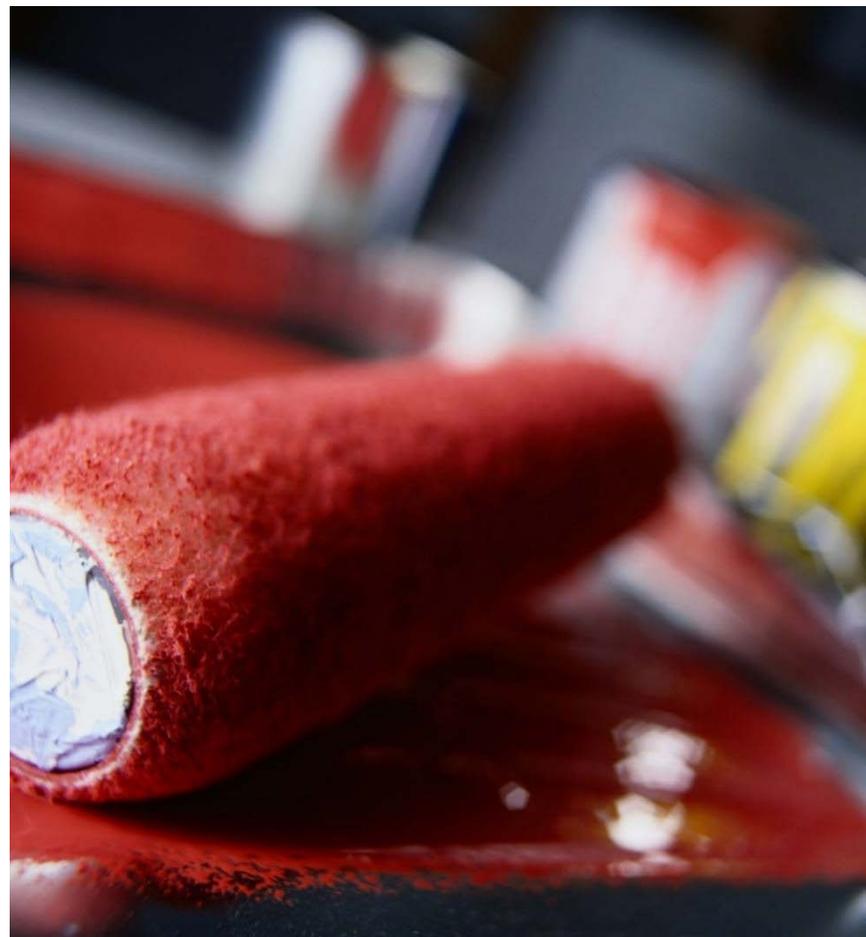
## Results with Proxel<sup>®</sup> LS Preservative

- In an industry standard antimicrobial challenge test, 0.25% (or less) of Proxel<sup>®</sup> Preservative effectively preserved all of the following materials

Material	pH	Challenge Type	Pass Level
Acrylic polymer emulsion	8.0	Bacterial	0.10%
Urethane emulsion	7.4	Bacterial	0.25%
Neutral pH polymer emulsion	6.8	Bacterial	0.10%
Acidic polymer emulsion	4.5	Fungal	0.10%
Urethane emulsion	6.8	Bacterial	0.10%
Neutral pH polymer emulsion	7.2	Bacterial	0.15%
Acidic polymer emulsion	4.3	Bacterial	0.15%

# Proxel<sup>®</sup> AQ Preservative (9.25% BIT)

- Robust, single active formulation with long term market acceptance
- Effective in a wide range of applications such as paints, coatings, polymer emulsions and adhesives
- No volatile components
- Temperature and pH stable
- Very cost effective
- Can be used in clear substrates
- Does not contain heavy metals



# Dry-Film Preservation



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# Challenges Faced by the Coatings Formulator

- Demand for broad spectrum protection of the paint film
- Interior
  - Wide variety of fungi
  - Concern about indoor air quality; airborne fungal spores
  - Frequent human contact with painted surfaces
- Exterior
  - Wide variety of fungi
  - Defacement by algae
  - Increasing diversity of substrates



# Challenges Faced by the Coatings Formulator

- Limited number of available biocide active agents

Fungicidal	Algaecidal	Fungicidal/Algaecidal
Octyl Isothiazolinone (OIT)	Diuron	Zinc Omadine™
Dichloro Octyl Isothiazolinone (DCOIT)	Irgarol	
N-butyl benzisothiazolinone (BBIT)	Terbutryn	
Iodo Propynyl Butylcarbamate (IPBC)		
Chlorothalonil (CTL)		
Carbendazim (BCM)		

# Zinc Omadine ZOE<sup>®</sup> Dispersion Antimicrobial

- Features of Zinc Omadine ZOE<sup>®</sup> Dispersion Antimicrobial (ZOE<sup>®</sup>)
  - Provides long-term dry film protection against both fungi and algae
  - Biocide formulation optimized for use in coatings
  - The ZOE<sup>®</sup> formulation has good compatibility history with other paint ingredients
  - The ZOE<sup>®</sup> formulation contains proprietary Lonza technology to suppress Zinc Omadine<sup>®</sup> trans-chelation
  - Broad range of pH stability
  - Stable at high temperatures<sup>1</sup>
  - Zero VOC
  - Can be used for both interior and exterior paints
  - Zinc Omadine<sup>®</sup> is familiar to consumers as the world's leading anti-dandruff agent

<sup>1</sup> Wilfried Paulus (2008) Directory of Microbicides for the Protection of Materials and Processes,

# Summary

- Lonza's Proxel<sup>®</sup> LS Preservative and Proxel<sup>®</sup> BZ Plus Preservative have been shown to provide robust in-can preservation in many applications and are both free of MIT.
- The active substances in these blends are supported by Lonza through the BPR for many applications.
- Zinc Omadine ZOE<sup>®</sup> Dispersion is a broad spectrum film biocide with long lasting properties.

# Summary

- Support from Lonza
  - Strong global regulatory and toxicology expertise and support
  - Strong microbiological and analytical chemistry support
  - Specially designed innovation centre in Alpharetta, Georgia
  - On-going exploration of leading edge technologies
  - Strong corporate focus on industrial preservation
  - Development of products that are consistent with current requirements but are also aligned with trends and anticipated future market needs

# Thank you!

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