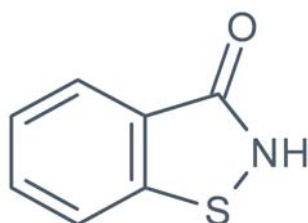


PROXEL™ GXL Preservative

TECHNICAL
INFORMATION BULLETIN



PROXEL GXL Preservative is a broad spectrum biocide for the preservation of industrial water-based products against spoilage from bacteria, yeasts and fungi.

It is a 20% aqueous dipropylene glycol solution of 1,2-benzisothiazolin-3-one.

Applications

The product is effective in a wide range of industrial aqueous-based products. Application areas include:

- Synthetic polymer emulsions
- Emulsion paints
- Water-based adhesives
- Household products
- Printing inks
- Paper coating compositions
- Metal working fluids
- Agricultural pesticide dispersions
- Aqueous mineral and pigment slurries
- Tape joint compounds

Antimicrobial Properties

The levels of product needed to prevent the growth of problem micro-organisms are listed in Table 1; Minimum Inhibitory Concentrations (MICs) do not represent effective use levels but do indicate the broad spectrum of activity.

PROXEL GXL Preservative has a non-specific mode of action which means that bacterial resistance is very unlikely to occur. Detailed information on the mode of action is available on request.

Table 1: Minimum Inhibitory Concentrations (MIC) Micro-organism (MIC)* (ppm)

Bacteria

<i>Alcaligenes faecalis</i>	5
<i>Bacillus subtilis</i>	5
<i>Burkholderia cepacia</i>	40
<i>Enterobacter cloacae</i>	20
<i>Enterococcus faecium</i>	15
<i>Escherichia coli</i>	30
<i>Gluconacetobacter liquifaciens</i>	30
<i>Lactococcus lactis</i>	15
<i>Proteus vulgaris</i>	5
<i>Pseudomonas aeruginosa</i>	40
<i>Pseudomonas putida</i>	55
<i>Pseudomonas stutzeri</i>	10
<i>Staphylococcus aureus</i>	20
<i>Streptovorticillium waksmanii</i>	10

Fungi

<i>Alternaria alternata</i>	225
<i>Aspergillus niger</i>	300
<i>Aureobasidium pullulans</i>	40
<i>Chaetomium globosum</i>	225
<i>Cladosporium cladosporioides</i>	30
<i>Geotrichum canidum</i>	225
<i>Penicillium pinophilum</i>	55

Yeasts

<i>Candida albicans</i>	55
<i>Rhodotorula mucilaginosa</i>	75
<i>Saccharomyces cerevisiae</i>	115

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Table 2: Typical Physical Properties

Composition	A solution of 1,2-benzisothiazolin-3-one in dipropylene glycol and water.
Active agent	20% w/w
Physical form	Yellow to light brown solution
Viscosity at 25°C	100 - 400 mPa s
pH of 10% solution at 25°C	12.0 – 13.2
Boiling point	100°C approx.
Storage stability	Stable under normal conditions of storage down to -10°C. If frozen, allow to thaw and stir well before use. Active agent is heat-stable and non-volatile.
Flash point	Boils without flashing.
Density at 25°C	1.14 g/ml
Compatibility	Compatible and effective over pH range 4-12. Stable in the presence of amines. Incompatible with some oxidising and reducing agents e.g. persalts, sulphites.

Amount to Use

PROXEL GXL Preservative should be added to the system as early in the process as possible. The concentration required to adequately preserve your product depends on several factors. These include the susceptibility of the system to microbiological degradation, the extent to which micro-organisms can gain access, the species involved, pH, temperature, and length of time for which protection is required.

A range of concentrations and applications is recommended in Table 3; however, it is recommended that a testing programme be undertaken to determine the most cost-effective dose for your application. Testing should take into account chemical compatibility/stability, plant hygiene conditions, susceptibility of the product to contamination, and the typical organisms involved.

Technical Service

Arch Biocides' technical laboratories can assist with the above tests as part of our customer support programme. Please contact your nearest Arch sales office to take advantage of these customised services.

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Table 3: Applications

Product	Concentration % (w/w)
Synthetic polymer emulsions:	0.05 - 0.15
Emulsion paints:	0.05 - 0.15
Water-based adhesives:	0.05 - 0.25
Household products: Including Laundry detergents, Fabric softeners, Dish-washing liquids, Floor and wall cleaning solutions, Surface cleaning products, Window cleaners, Floor polishes and waxes, Shoe polishes	0.05 - 0.15
Tape joint compounds:	0.05 - 0.25
Printing inks:	0.05 - 0.15
Paper coating compositions:	0.05 - 0.15
Metal working fluids:	0.05 - 0.18
Agricultural pesticide products:	0.05 - 0.25
Aqueous mineral and pigment slurries:	0.05 - 0.15

Risk Assessment and Management

Arch professionals have a wide expertise in the fields of Safety, Health and the Environment. Arch Biocides is committed to and uses this expertise in understanding the suitability of **PROXEL GXL** Preservative for specific applications. Please contact your local Arch office should you have questions in this area.

Health and Safety

The **PROXEL GXL** Preservative Safety Data Sheet may be supplied upon request. It should be read and understood by all supervisory personnel and employees before using this product. If there is any doubt please contact your local Arch sales office for advice.

Total Quality

Arch Biocides holds a number of ISO 9001 Quality Management registrations covering our product range. The scope of each registration is specific to the location or entity named on the Registration Certificate and our products are supplied to ISO 9001 Standards.

Regulatory Information

The components of **PROXEL GXL** Preservative are in compliance with the following inventories:

EINECS	(Europe)
TSCA	(USA)
AICS	(Australia)
ENCS	(Japan)
DSL	(Canada)
KECL	(Korea)
PICCS	(Philippines)
IECSC	(China)

In many countries all the chemical components of a product must be listed on the relevant “inventory” of chemical substances before it can be supplied. However, listing on an inventory does not necessarily permit all uses of a product and it does not imply compliance with local or regional regulations on Biocidal products.

In many countries, use as a preservative against spoilage (i.e. in-can preservation) is subject to additional legislation which often requires a specific product registration. Enquiries for further information and samples should be addressed to your local sales office.

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Some Arch® biocides may not be registered or registered for only certain uses in your country.

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Any data relating to test organisms included in this publication relates to standard laboratory test species and is provided for information only. No claim of controlling organisms in public health applications is made by the inclusion of such data nor should it be implied.

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SAFE HANDLING INFORMATION

Use biocides safely. Always read the label and product information before use. Refer to the Material Safety Data Sheet (MSDS) available from Arch Chemicals, Inc. for information on the safe use, handling and disposal of this product.

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