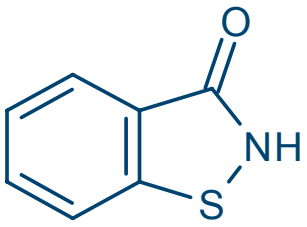
PROXEL™ GXL Antimicrobial

TECHNICAL
INFORMATION BULLETIN



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

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

Applications

PROXEL GXL 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
- Leather processing solutions

Antimicrobial Properties

The levels of **PROXEL GXL** needed to prevent the growth of problem micro-organisms are listed in Table 1.

MICs do not represent effective use levels but do indicate the broad spectrum of activity of **PROXEL GXL**.

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

Table 1: Minimum Inhibitory Concentrations (MIC)

Micro-organism	PROXEL GXL (ppm)
Bacteria	
Bacillus subtilis	40
Burkholderia cepacia	80
Enterobacter cloacae	80
Escherichia coli	40
Proteus vulgaris	125
Pseudomonas aeruginosa	250
Pseudomonas putida	250
Staphylococcus aureus	40
Streptococcus faecalis	40
Streptococcus lactis	15
Fungi	
Alternaria alternata	700
Aspergillus niger	350
Aureobasidium pullulans	350
Chaetomium globosum	400
Cladosporium cladosporoides	400
Penicillium notatum	125
Yeasts	
Candida albicans	200
Rhodotorula rubra	400
Saccharomyces cerevisiae (turbidans)	250

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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-light brown solution
Viscosity at 10/25°C	2000/400 mPa s (Newtonian)
pH at 25°C	13.5
Boiling point	100°C
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
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 should be added to the system as early in the process as possible. The concentration of **PROXEL GXL** 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

All of these tests can be provided by Arch Biocides' technical laboratories as part of our customer support programme. Please contact your nearest technical department to take advantage of these customised services.

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Table 3: Applications

Product	% PROXEL GXL (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
Leather processing solutions: For the short term preservation of freshly flayed skins & hides during processing.	0.05-0.25

Risk Assessment and Management
Highly qualified Arch Safety, Health and Environment (SHE) professionals are available to help define and manage any potential risks to human health or to the environment when using **PROXEL** preservative products. In addition, Arch Biocides is committed to understanding the suitability of **PROXEL GXL** for specific applications. Please contact your local Arch sales office should you have questions in this area.

Health and Safety
Arch Biocides maintains Material Safety Data Sheets on all of its products. These are regularly updated to incorporate new data under our continuous programme to improve our health and safety advice needed to protect your employees and customers.

The **PROXEL GXL** Material Safety Data Sheet is provided with every sample and product shipment and is also 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 has ISO 9002 registration at its Business Centre and manufacturing sites.

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Regulatory Information
PROXEL GXL has many worldwide regulatory approvals. For example, it is cleared by the German BgVV and US EPA registration.

Since approvals are regularly being gained, we are constantly updating our records. A full, up to date list is available on request.

The components of **PROXEL GXL** are listed on the following inventories:

EINECS	(Europe)
TSCA	(USA)
ACOIN/AICS	(Australia)
MITI	(Japan)
DSL	(Canada)
Korean inventory	
Philippine inventory	

Enquiries for further information and samples should be addressed to your local sales office:

Use biocides safely. Always read the label and product information before use.

Some Arch Chemicals, Inc. biocides may not be registered for certain uses in your country.

Arch® Biocides is a business unit of Arch Chemicals Inc.

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.

No statement herein is intended as a representation or warranty regarding **PROXEL** or any other product of Arch Chemicals, Inc.

SAFE HANDLING INFORMATION
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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