



BIOBAN™ ULTRA BIT 20 LE Antimicrobial

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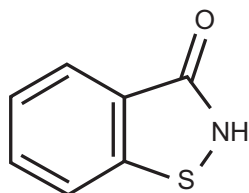
LE Technology

LE is patent pending technology from Dow Biocides which offers environmentally preferred carriers that can be applied to actives throughout the portfolio while maintaining key performance attributes. LE Technology represents a commitment from Dow Biocides to its customers, distributors and formulators to confront the challenges that face different industries and meet current as well as future environmental needs.

General

BIOBAN™ ULTRA BIT 20 LE Antimicrobial is a high purity, low VOC (volatile organic content), low color, low viscosity, broad spectrum biocide useful for the protection of industrial water-based products against bacteria, yeasts, and fungi. BIOBAN ULTRA BIT 20 LE Antimicrobial is a long-lasting, non-formaldehyde based biocide that can be used under a broad range of pH and temperature conditions. Most common applications include the preservation of polymer latexes and emulsion systems, water-based paints, coatings, adhesives, oil-in-water emulsions, textile spin-finish solutions, fountain solutions, and for bacterial control in the paper-making process. BIOBAN ULTRA BIT 20 LE Antimicrobial is a low VOC, near neutral pH solution of BIOBAN ULTRA BIT Paste, a high purity and low color grade of 1, 2-benzisothiazolin-3-one.

Structure



Physical Properties

The following are typical physical properties of BIOBAN ULTRA BIT 20 LE Antimicrobial; **they are not to be considered product specifications.**

Appearance:	Clear, tan liquid
Volatile organic content	Non-VOC by EU criteria < 5 % (EPA 24 test)
Color (Gartner scale)	< 5
Viscosity (25°C/77°F):	< 150 cps
pH (neat):	8 - 9.5
Solubility in water (20°C/68°F):	Miscible
Solubility in oil:	Miscible
Freezing point:	<-20°C/-4°F
Density (20°C/68°F):	1.14 - 1.19 g/mL
pH Compatibility:	2-12

Special Features and Benefits

- Non-VOC allows formulation of non-VOC paints
- Low color
- Low viscosity
- Close to neutral pH minimizes the risk of pH shock of the treated formulation
- Prepared from BIOBAN ULTRA BIT Paste, a high purity grade of BIT

- Excellent thermal stability
- Broad spectrum biocide against bacteria, yeasts, and molds
- Wide in-use pH range (2-12)
- Often used at higher temperatures and under very alkaline conditions where other preservatives are ineffective
- Free from formaldehyde and 5-chloro-2-methyl-4-isothiazolin-3-one
- Outstanding chemical stability and good compatibility with most formulations
- Compatible with most anionic, cationic and non-ionic dispersants

Antimicrobial Activity

BIOBAN™ ULTRA BIT 20 LE Antimicrobial has a broad spectrum of activity which includes these common spoilage microorganisms:

Microorganism	MIC (ppm product)
Bacteria	
<i>Citrobacter freundii</i> ATCC # 8090	125
<i>Klebsiella pneumoniae</i> ATCC # 27736	250
<i>Klebsiella pneumoniae</i> ATCC # 8308	600
<i>Pseudomonas aeruginosa</i> ATCC # 10145	625
<i>Pseudomonas aeruginosa</i> ATCC # 15442	625
<i>Pseudomonas aeruginosa</i> ATCC # 9027	625
<i>Pseudomonas oleovorans</i> ATCC # 8062	150
<i>Salmonella choleraesuis</i> ATCC # 10708	150
<i>Escherichia coli</i> ATCC # 11775	250
<i>Escherichia coli</i> ATCC # 8739	100
<i>Escherichia coli</i> ATCC # 11229	150
<i>Enterobacter aerogenes</i> ATCC # 13048	325
<i>Staphylococcus aureus</i> ATCC # 6538	250
Fungi and yeasts	
<i>Aspergillus niger</i> ATCC # 9642	150
<i>Aspergillus niger</i> ATCC # 6275	550
<i>Aspergillus terreus</i> ATCC #10690	75
<i>Aspergillus flavus</i> ATCC # 9296	550
<i>Aspergillus versicolor</i> ATCC # 26637	150
<i>Aureobasidium pullulans</i> ATCC # 15233	500
<i>Candida albicans</i> (yeast) ATCC # 10231	1100
<i>Chaetomium globisum</i> ATCC # 6205	100
<i>Penicillium funiculosum</i> ATCC # 11797	75
<i>Penicillium</i> sp. ATCC # 12667	100
<i>Saccharomyces cerevisiae</i> (yeast) ATCC # 4105	400
<i>Geotrichum candidum</i> ATCC # 26195	500

Applications/ Directions for Use

BIOBAN ULTRA BIT 20 LE Antimicrobial is an effective preservative in most aqueous compositions.

For protection against bacterial contamination, a concentration of BIOBAN ULTRA BIT 20 LE Antimicrobial ranging from 0.02 to 0.35% is generally adequate. Typical applications and suggested concentration ranges follow.

Product	BIOBAN™ ULTRA BIT 20 LE Antimicrobial (% w/w)
Synthetic polymer emulsions: latexes based on acrylate, butadiene, PVA, styrene	0.02-0.09
Emulsions paints (in-can preservation)	0.02-0.25
Water-based adhesives: adhesives based on gelatin, latex, animal products, carboxymethyl cellulose (CMC) and derivatives	0.02-0.09
Paper coatings including rosin dispersions, starch-based and carbon-based products	0.02-0.09
Oil-in-water emulsions: spin finish solutions (textile)	0.04-0.18
Home cleaning products	0.05-0.15
Car care products	0.075-0.15
Laundry additives	0.02-0.09
Mineral Slurries and Dispersions	0.02-0.09
Tape joint compound	0.06-0.25
Agricultural pesticide products	0.1-0.5

Application uses are governed by country-specific approvals. Please check with your Dow representative for information on use for your individual requirements.

Regulatory Information

BfR Rec. XIV: 1,2-Benzisothiazoline-3-one is approved as a slimicide for plastic dispersions for coating commodities intended to come into contact with foods with a maximum permitted level of 0.15 mg/dm².

BfR Rec. XXI: 1,2-Benzisothiazoline-3-one is approved as anti-fouling agent for manufacturing commodities made of rubber, with a maximum permitted level 0.4% (maximum amount based on latex).

BfR Rec. XXXVI: 1,2-Benzisothiazoline-3-one is approved as a slimicide for paper and board for food contact with a maximum permitted level 0.15 mg/dm². This substance must not be detectable in the extract of the finished product (detection limit: 5µg/dm²).

Laboratory Services

Dow Biocides technical laboratories, located globally, are available to assist in the determination of optimum use level required for a specific application. While BIOBAN™ ULTRA BIT 20 LE is compatible with most raw materials used in microbiologically susceptible products, Dow Biocides can also assist with compatibility assessments for specific applications.

Compatibility with Materials of Construction

BIOBAN ULTRA BIT 20 LE Antimicrobial is compatible with the following materials of construction: Stainless steel, polystyrene, high density polyethylene, polypropylene, Teflon, Nylon.

Containers

BIOBAN ULTRA BIT 20 LE is available in 25 kg and 200 kg plastic drums.

Toxicology

Corrosive-causes burns.

May cause sensitization by skin contact.

Note: For full details, refer to the Safety Data Sheet.

First Aid

Inhalation: Move the exposed person to fresh air at once. Seek prompt medical attention.

Ingestion: Immediately seek medical attention. Do not induce vomiting unless instructed to do so by a medical professional.

Skin Contact: Remove contaminated clothing. Promptly wash contaminated area with plenty of soap and water for 15-20 minutes. Seek medical attention.

Eye Contact: Promptly rinse eyes with water for 30 minutes. Remove contact lenses, if present, after the first 5 minutes and continue rinsing eyes. Seek medical attention.

Note: For full details on first aid measures, please see the Safety Data Sheet.

Storage, Handling, and Disposal

BIOBAN™ ULTRA BIT 20 LE Antimicrobial should be stored at temperatures within the range of -4 to 40°C (24 to 104°F). Containers should not be exposed to direct sunlight. Storage conditions should also be in conformance with applicable legal, fire, and insurance requirements.

When handling BIOBAN ULTRA BIT 20 LE Antimicrobial directly, wear personal protection equipment including a rubber apron, suitable impervious full-length gloves and footwear, and chemical splash goggles. Please refer to the Safety Data Sheet for specific precautions.

Prior to disposal, the residual contents of BIOBAN ULTRA BIT 20 LE Antimicrobial containers should be drained into the product to be preserved. A small quantity of BIOBAN ULTRA BIT 20 LE Antimicrobial will likely remain in the container; this should be deactivated using an aqueous solution of sodium bisulfite, pH adjusted to 6.5, and disposed of by appropriate means. To ensure that containers are not reused, they should be pierced before disposal.

Product Stewardship

Dow Biocides encourages its customers to review their applications of Dow Biocides products from the standpoint of human health and environmental quality. To help ensure that Dow Biocides products are not used in ways for which they are not intended or tested, Dow Biocides personnel are willing to assist customers in dealing with ecological and product safety considerations. Contact your representative if you need any assistance or information. When considering the use of any Dow product in a particular application, review the latest Safety Data Sheet and country-specific product label to ensure the intended use is within the scope of approved uses and can be accomplished safely. Before handling any of the products mentioned in the text, obtain available product safety information and take necessary steps to ensure safety of use.

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