Nutrition & Biosciences

DUPONT

# Microbial Control
Technical Data Sheet

# ROCIMA™ BT 2S Industrial Microbicide

## Regional Product Availability

Please check with your DuPont representative for specific country information.

## General

ROCIMA™ BT 2S Industrial Microbicide is a 20% solution of 1,2-Benzisothiazolin-3-one (BIT) in dipropylene glycol.

## Physical Properties

The following are typical properties of ROCIMA™ BT 2S Industrial Microbicide; **they are not to be considered product specifications.**

| | |
|---|---|
| Composition: | A solution of 1,2-Benzisothiazolin-3-one at 19% av. in dipropylene glycol and water |
| Appearance: | Clear yellow to amber liquid |
| Viscosity: | 200 to 500 cP |
| pH: | 12 to 13.5 |
| Flash point: | >93°C (199°F) |

## Special Features and Benefits

- Broad spectrum activity in high pH systems, controlling bacteria and fungi (yeasts and molds)
- Active ingredient is stable up to 150°C providing increased processing flexibility
- Ease of handling due to its liquid form and good compatibility in most aqueous compositions.
- Stable in the presence of amines.

Used at recommended dose levels, ROCIMA™ BT 2S Industrial Microbicide is effective on a number of microorganisms including:

| **Bacteria** | **Molds** |
|---|---|
| *Bacillus megaterium* | *Alternaria radicina* |
| *Bacillus subtilis* | *Aspergillus niger* |
| *Escherichia coli* | *Aspergillus penicilloides* |
| *Klebsiella pneumoniae* | *Rhizopus stolonifer* |
| *Proteus vulgaris* | *Trichophyton mentagrophytes* |
| *Pseudomonas aeruginosa* | **Yeasts** |
| *Salmonella typhosa* | *Candida albicans* |
| *Staphylococcus aureus* | *Saccharomyces cerevisiae* |

## Applications/ Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

ROCIMA™ BT 2S Industrial Microbicide is an effective preservative in most aqueous compositions. The concentration required to give protection depends on several factors. These include the susceptibility of the system to microbiological degradation, the extent to which microorganisms can gain access, the species involved, pH, temperature, and length of time for which protection is required. Trials at different concentrations are recommended.

Typical applications and the suggested range of concentrations are shown on the next page.

| Type of Material to be Protected | Pounds of ROCIMA™ BT 2S Industrial Microbicide Per 1,000 Pounds of Material to be Protected (% ROCIMA BT 2S based on total weight of product) | |
|---|---|---|
| **Latices** such as polymer latices based on monomers such as acrylate, butadiene, PVA or styrene; synthetic rubber/latex. | 0.5 to 1.5 lb | (0.05 – 0.15%) |
| **Oil-in-water emulsions** such as textile spin-finish solutions, cutting/rolling oils, soluble oils (metal and engineering industries), and photographic emulsions. Note: limit amount of ROCIMA BT 2S in metalworking fluid concentrate (to be diluted before use) to 3.0% to reduce the possibility of dermal sensitization. | 0.5 to 1.8 lb | (0.05 – 0.18%) |
| **Paints and coatings** such as aqueous coatings, water-based paints, and emulsion paints | 0.5 to 2.5 lb | (0.05 – 0.25%) |
| **Inks and font solutions** | 0.5 to 2.5 lb | (0.05 – 0.25%) |
| **Water-based adhesives**, including animal glues, adhesives based on carboxymethylcellulose (CMC) and derivatives, gelatin and/or latex | 0.5 to 2.5 lb | (0.05 – 0.25%) |
| **Aqueous slurries of pigments** such as titanium dioxide or of minerals such as kaolin, calcium carbonate, calcium sulfate, or magnesium sulfate | 0.4 to 1.25 lb | (0.04 – 0.125%) |
| **Building materials** such as caulks, sealants, grouts, spackling, ready-mix cement and wallboard compounds, and tape joint compounds | 0.8 to 2.5 lb | (0.08 – 0.25%) |
| **Pesticide formulations**, including in-can protection and protection of use dilutions | 0.5 to 2.5 lb | (0.05 – 0.25%) |
| **Oil recovery materials**, such as drill muds, packer fluids, and completion fluids, containing polysaccharide fluid loss control agents and/or thickeners such as starch, guar, or xanthan gum | 0.5 to 1.5 lb of total weight of the fluid, or 15 to 45 lb per 1000 lb of dry polysaccharide | (0.05 – 0.15%) |
| **Secondary oil recovery injection water** containing additives, such as polymer or micellar/polymer waterfloods using thickeners such as xanthan gum and/or polyacrylamides | 0.15 to 1.5 lb of total weight of fluid | (0.015 – 0.15%) |
| **Leather processing solutions** – to preserve the solutions | 0.25 to 2 lb | (0.025 – 0.2%) |
| **Fresh animal skins and hides** – To preserve the integrity of the hides and skins before or during processing. Add the appropriate quantity of ROCIMA BT 2S to the brine solution during the curing operation or treat hides or skins with an appropriately diluted aqueous solution during other portions of the processing operation. The specific use rate and contact time needed to control microbial attack will depend on the degree of decomposition of the hides or skins prior to treatment. | 1 to 24 pounds (13 fluid ounces to 2.5 gallons) of ROCIMA BT 2S per 1000 pounds of hides or skins | |
| **Paper coatings** to be used in papermaking, including rosin dispersions, starch and casein based products | 0.5 to 1.5 lb | (0.05 – 0.15%) |

**Pulp & paper mill system slime control** – The preferred method of addition is by shock dosing because this ensures that a high concentration of ROCIMA™ BT 2S Industrial Microbicide is present in the system for several hours. If a slime control agent is added by continuous methods over periods of several hours, its concentration in the system at all times is low. This can lead to the development of resistant organisms, which is less likely to occur when the shock dosing method is used. It is not possible to give precise recommendations as to the quantity of ROCIMA BT 2S to add to control slime formation, because the magnitude of the problem varies greatly from mill to mill, depending on the furnish employed, the cleanliness of the mill system, and the additional nutrients (for example, starch) that may be added to the stock. The following quantities of ROCIMA BT 2S are suggested for trial:

- **Shock dosing:** If this method is adopted, add 2.5 to 9 ounces of ROCIMA BT 2S for each ton of paper produced per day as a single shock dose, the actual quantity to be used depending on the severity of the slime problem. This addition may be made to any part of the stock preparation or backwater system. Alternatively, the addition may be made to those parts of the system where it is known that slime deposits accumulate.
- **Continuous addition:** If this method is adopted, add ROCIMA BT 2S continuously for either the single period of 8 hours during every 24 hours or for two separate periods of 4 hours during every 24 hours. Meter ROCIMA BT 2S into the recirculated backwater at a rate of 7 to 8.5 ounces for each ton of paper produced during the dosing period.

## Handling and Storage

### Handling

Please refer to the Safety Data Sheet (SDS) of this product for precise handling instructions.

The processing and use of industrial chemicals require adequate technical and professional knowledge. In general, avoid eye and skin contact, wear safety goggles, gloves and protective clothing. In case of eye or skin contact, despite precautionary measures, wash immediately and thoroughly with plenty of warm water and obtain medical attention.

### Storage

ROCIMA™ BT 2S Industrial Microbicide should be stored at room temperature in tightly sealed original containers. Protect from frost and heat. Any supplies which do freeze must be mixed thoroughly after thawing before they can be used without any loss in efficacy.

## Product Stewardship

When considering the use of any DuPont product in a particular application, review the latest Safety Data Sheet (SDS) and country-specific product label to ensure the intended use is within the scope of approved uses. DuPont has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with DuPont products – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

## Customer Notice

DuPont strongly encourages its customers to review both their manufacturing processes and their applications of DuPont products from the standpoint of human health and environmental quality to ensure that DuPont products are not used in ways for which they are not intended or tested. DuPont personnel are available to answer your questions and to provide reasonable technical support. DuPont product literature, including Safety Data Sheets (SDS), should be consulted prior to use of DuPont products. Current Safety Data Sheets are available from DuPont.

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