Nutrition & Biosciences

DUPONT

Microbial Control
Technical Data Sheet

ROCIMA™ BT NV2 Industrial Microbicide

Regional product availability

Please check with your DuPont representative for specific country information.

General

ROCIMA™ BT NV2 Industrial Microbicide is a zero VOC aqueous dispersion containing 19% 1,2-Benzisothiazolin-3-one (BIT).

Physical properties

The following are typical properties of ROCIMA™ BT NV2 Industrial Microbicide; **they are not to be considered product specifications.**

Physical form and appearance:	Opaque white liquid
Viscosity:	Approx. 70 ku (20°C)
Specific gravity:	1.05, at 20°C
pH:	~7
Boiling point:	~100°C
Solubility:	Miscible in water
Stability:	Stable under all normal storage conditions

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
- A Zero VOC containing formulation that adds no VOC content to products formulated with this active
- Excellent stability over wide pH range of 4 to 12 and in the presence of amines

Used at recommended dose levels, ROCIMA™ BT NV2 Industrial Microbicide is effective on a number of microorganisms including:

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

Antimicrobial activity

ROCIMA™ BT NV2 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.

Applications/directions for use

For protection against bacterial attack, a concentration within the range 0.02 to 0.25% ROCIMA™ BT NV2 Industrial Microbicide is almost invariably sufficient. In dilute fluid systems, spoilage is usually controlled with dosages not greater than 0.09%. Control of mold growth, particularly on paste products of high solids content, may occasionally require demand dosages above 0.25%.

Trials at different concentrations are recommended. Typical applications, and the suggested range of concentrations on which trials are based, are:

Type of Material To Be Protected	Pounds of ROCIMA™ BT NV2 Industrial Microbicide Per 1,000 Pounds of Material To Be Protected (% ROCIMA BT NV2 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 NV2 Industrial Microbicide 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 slurries or of minerals such as kaolin, calcium carbonate, calcium sulfate, or magnesium sulfate	0.4 to 1.25 lb	(0.04 – 0.125%)
Building and construction materials such as caulks, sealants 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 per 1000 lb. of fluid	(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 hides and skins – To preserve the integrity of the hides and skins before or during processing. Add the appropriate quantity of ROCIMA™ BT NV2 Industrial Microbicide 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 NV2 Industrial Microbicide per 1000 pounds of hides or skins	
Paper coatings to be used in paper-making, including rosin dispersions, starch and case in 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 NV2 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 NV2 Industrial Microbicide 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 NV2 Industrial Microbicide are suggested for trial:

Shock dosing: If this preferred method is adopted, add 2.5 to 9 ounces of ROCIMA™ BT NV2 Industrial Microbicide 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 NV2 Industrial Microbicide 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 NV2 Industrial Microbicide 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

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.

Avoid dilution of this product with water. If piping or equipment must be washed, ensure it is thoroughly dried prior to reintroduction of this product. Avoid prolonged exposure of this product to elevated temperatures (>40°C) in process equipment. Failure to follow these precautionary measures may result in equipment fouling/plugging due to product destabilization.

ROCIMA™ BT NV2 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.

Due to its inherent characteristics dispersions may become partially inhomogeneous upon prolonged storage. We therefore generally advise to mix such products before use.

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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