ROCIMA™ 640 Biocide

General

ROCIMA™ 640 Biocide is a broad spectrum microbicide for the preservation of industrial water-based products against the attack of microorganisms.

ROCIMA 640 is specifically recommended for the preservation of polymer emulsions, paints and coatings, adhesives, and printing inks.

ROCIMA 640 is a 20% solution of 1,2-Benzisothiazolin-3-one in dipropylene glycol and water.

Physical Properties

The following are typical properties of ROCIMA™ 640 Biocide; they are not to be considered product specifications.

Appearance: ................................................................. Clear amber liquid
Viscosity: ................................................................. 250 mPa.s at 25°C
Density: ................................................................. 1.14 g/mL at 20°C
pH (10% in water): ................................................................. 12.5 at 25°C
Boiling point: ................................................................. ~100°C
Solubility: ................................................................. Miscible with water at any ratio
Temperature stability: Stable up to 50°C (for short periods up to 100°C depending on matrix)

pH stability: ................................................................. Stable at pH 4 - 12

Redox stability: ................................................................. Incompatible with certain oxidizing and reducing agents*

*Our technical staff is fully prepared to provide you further recommendations in this field.

Special Features and Benefits

• Broad spectrum activity in high pH systems, controlling bacteria, fungi and yeasts.
• Stable in the presence of amines.
• Non specific mode of action, resulting in reduced microbial resistance potential.
• Ease of handling due to its liquid form and good compatibility in most aqueous compositions.
• Excellent performance with co-biocides like CMI/MI, bronopol or formaldehyde releasers, which allow performance enhancements and cost reduction.
• The active ingredient in ROCIMA™ 640 Biocide is today the most widely accepted in various European Ecolabel programs applying to coatings and lattices (i.e. German Blue Angel, Danish Malcode, European Ecolabel).
• The active ingredient is non-volatile and has a comparatively high heat stability which allows the incorporation in fluids which are still hot.
• High purity active ingredient, made evident by its clear light color.
Appearance of ROCIMA™ 640 Biocide compared with equivalent industry grade

Industry Standard  ROCIMA™ 640 Biocide

Antimicrobial Activity

ROCIMA™ 640 Biocide has been tested for efficacy against a variety of microorganisms. Claims of efficacy against specific organisms may not be approved in all regulatory jurisdictions. It is the responsibility of the user to confirm all applicable approvals are in place prior to product use.

Used at recommended dose levels, ROCIMA 640 is effective against the following microorganisms:

<table>
<thead>
<tr>
<th>Bacteria</th>
<th>Mould</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudomonas aeruginosa</td>
<td>Fusarium solani</td>
</tr>
<tr>
<td>Pseudomonas fluorescens</td>
<td>Aspergillus niger</td>
</tr>
<tr>
<td>Pseudomonas putida</td>
<td>Alternaria alternata</td>
</tr>
<tr>
<td>Escherichia coli</td>
<td>Aureobasidium pullulans</td>
</tr>
<tr>
<td>Klebsiella pneumoniae</td>
<td>Chaetomium globosum</td>
</tr>
<tr>
<td>Enterobacter cloaceae</td>
<td></td>
</tr>
<tr>
<td>Citrobacter freundii</td>
<td></td>
</tr>
<tr>
<td>Proteus vulgaris</td>
<td></td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td></td>
</tr>
</tbody>
</table>

Yeast

- Candida albicans
- Rhodotorula rubra

Directions for Use

Below are some general dosing recommendations, however, it is recommended to do specific testing on the end product to determine optimal dose levels.

<table>
<thead>
<tr>
<th>Product %</th>
<th>ROCIMA™ 640 Biocide (based on total weight of product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polymer Emulsions:</td>
<td>0,05 - 0,15</td>
</tr>
<tr>
<td>Polymer emulsions based on styrene</td>
<td>0,05 - 0,15</td>
</tr>
<tr>
<td>acrylic, acrylic, butadiene, PVA</td>
<td>0,05 - 0,15</td>
</tr>
<tr>
<td>and styrene for various applications.</td>
<td></td>
</tr>
<tr>
<td>Emulsions paints and coatings</td>
<td>0,05 - 0,25</td>
</tr>
<tr>
<td>Water based adhesives</td>
<td>0,05 - 0,25</td>
</tr>
<tr>
<td>Printing Inks and fountain solutions</td>
<td>0,05 - 0,15</td>
</tr>
<tr>
<td>Plasters</td>
<td>0,05 - 0,25</td>
</tr>
</tbody>
</table>
Handling and Storage

Handling
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™ 640 Biocide should be stored in well sealed original containers and protected from heat and from direct sunlight. Storage below -2°C may lead to turbidity and solidification. The product becomes liquid again by simply warming up without any loss of effectiveness, if mixed homogeneously.

Shelf Life
ROCIMA™ 640 Biocide in original containers under the conditions stated above will have a shelf life of 24 months.

Biocidal Products Directive Compliance
ROCIMA™ 640 Biocide is a biocidal product intended for use in accordance with Product Type 6 (In-Can preservation) and Product Type 13 (Metalworking-fluid preservatives) of the Biocidal Products Directive 98/8/EC (BPD).

Product Stewardship
When considering the use of any Dow 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. Dow 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 Dow products – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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

Central and Eastern Europe:
Turkey +90-216-571-16-00
Russia +7-495-663-78-20
Poland +48-22-543-18-00

Western Europe:
+800-3-694-6367 (toll-free)
+31-115-67-26-26 (phone)
+31-115-67-26-28 (fax)

North America:
+1-800-447-4369 (toll-free)
+1-989-832-1560 (phone)
+1-989-832-1465 (fax)

Middle East and Africa:
UAE +971-4-332-88-66
South Africa +800-99-5078 (toll-free)

Greater China:
Shanghai +86-21-3851-1000
Beijing +86-10-8527-9199
Guangzhou +86-20-3813-0600
Taiwan +886-227-718-000

Southeast Asia:
Philippines +63-2-867-3293
Indonesia +62-21-2995-6273
Singapore +65-6830-4575
+65-6796-6217
Thailand +66-2365-7371
Vietnam +84-8-3822-8808
Malaysia +603-7955-5200

Australia and New Zealand:
+61-9226-3500 (phone)
+61-3-9226-3562 (fax)

Japan and Korea:
Japan +81-3-5460-2261
Korea +92-2-3490-4348

Indian Subcontinent:
+91-22-6793-4953 (phone)
+91-22-6793-4924 (fax)

Latin America:
+55-11-5189-9555 (phone)
+55-11-5189-9400 (fax)

Other Global Areas:
+1-989-832-1560 (phone)
+1-989-832-1465 (fax)

Notice: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer’s use and for ensuring that Customer’s workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to “Dow” or the “Company” mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

USE BIOCIDES SAFELY. ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE.