
ACTICIDE[®] MBR 1

Product Information



ACTICIDE[®] MBR 1 is a novel AOX, HCHO and VOC-free biocide specifically developed for the wet state protection of water based products.

Chemical and Physical Characteristics

Composition:	A water based formulation of 2-methyl-4-isothiazolin-3-one (MIT) and 1,2-benzisothiazolin-3-one (BIT)
Appearance:	Yellowish to amber liquid
Odour:	Mild
Refractive Index (20°C):	1.3360 – 1.3720
Density (20°C):	1.040 – 1.070 g/ml
MIT:	8.50 – 9.50 %
BIT:	4.60 – 5.20 %
Solubility:	Miscible with water and most lower alcohols and glycols
Stability in application*:	Stable over the pH range 2 – 10, ACTICIDE [®] MBR 1 is characterised by a higher temperature stability compared to formulations containing CIT. The stability of the biocidal actives depends largely on the duration of increased temperature and on other system specific factors.

Note: *These characteristics do not constitute a sales specification*

Biocidal Properties

ACTICIDE[®] MBR 1 has excellent biocidal properties. The combination of MIT and BIT produces a synergistic effect on a range of microorganisms, resulting in a reduction of the total amount of biocide required compared to the use of the individual components.

In addition, the biocidal spectra of the two actives complement each other. Several species that are successfully controlled with relatively high amounts of BIT can be controlled with much smaller amounts of MIT. This effect is also shown to overcome the weakness of MIT in controlling moulds. Overall, the amount of biocide required can be optimised with ACTICIDE[®] MBR 1.

As a result ACTICIDE[®] MBR 1 has a very broad spectrum of activity against bacteria, fungi and yeasts. In particular, ACTICIDE[®] MBR 1 offers excellent protection against *Pseudomonas* spp.

ACTICIDE[®] MBR 1 is characterised by very good system compatibility under alkaline conditions, elevated temperature and in the presence of nucleophiles. ACTICIDE[®] MBR 1 remains stable for a longer period of time, maintaining its biocidal effect in the system.

Applications / Use Levels

ACTICIDE[®] MBR 1 is suitable for the wet state preservation of a wide range of aqueous products including household and detergents, polymer emulsions, paints, adhesives, ceramic glazes, fillers and sealants. ACTICIDE[®] MBR 1 is particularly effective in products having an alkaline pH and for the preparation of environmentally acceptable formulations.

Normal use concentrations are in the range 0.05 - 0.20% depending on the product to be protected and the environmental conditions to which it will be exposed. The precise level required by a specific formulation can be determined by the local **Thor Microbiological Technical Centre**.

Addition / Compatibility

ACTICIDE® MBR 1 can be added at any time during production but care should be taken to ensure that external factors have no negative impact on stability of the actives.

ACTICIDE® MBR 1 exhibits no compatibility problems in most practical applications. Due to the large range of possible applications, it is recommended that the stability of the active ingredients, system compatibility and any influences on the product properties during production, storage, transport and in the application are tested prior to use. The use of oxidising, reducing agents and nucleophiles which may adversely affect active ingredient stability should be avoided. Care should be taken to ensure that temperature, pH and redox potential at the point of addition are suitable for stability of the product. In normal use concentrations discolouration in most systems is not a problem but in very rare cases a high concentration of metal salts can lead to formation of coloured metal complexes. Products sensitive to discolouration should be tested for colour stability.

It is generally recommended to routinely test for changes in chemical and physical properties such as discolouration (colour stability), viscosity and odour, for each individual matrix system, as well as the effects of external factors such as pH, moisture, temperature and UV light.

Prior to use, **ACTICIDE® MBR 1** must not be diluted or mixed with other raw materials to avoid negative impact on the active agents. Please contact our **Thor Microbiological Technical Centre** for further information.

Packaging / Storage / Regulatory Approvals

Packaging:	Plastic drum: 25 kg / 200 kg, IBC: 1,000 kg
Shelf Life:	12 months from production date
Availability:	Ex-stock in the above packaging
Storage:	Store in the original containers. Keep containers tightly sealed. Prevent release to the environment by adequate secondary containment and use of appropriate spill control procedures.
Regulatory Approvals:	The active substances in ACTICIDE® MBR 1 have BfR chapters 14 and 36, FDA 21 CFRs 175.105, 176.170 and 176.180 and a wide range of other regulatory approvals. Further information available in the regulatory status document.

Safety / Labelling / Toxicology

For detailed information on the toxicology and handling of **ACTICIDE® MBR 1** and advice on the labelling of products in which it may be used, please refer to the separate Safety Data Sheet or seek specific advice from **Thor**.

* The data given are time and system dependant.

The information contained in this leaflet is intended to be of assistance to users but is without guarantee. Variations can occur in application and users are advised to conduct their own tests. Suggestions for use neither give nor imply any freedom from patent infringement.

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