Technical Data Sheet

Clariant In-can Biocides

Clariant

Exactly your chemistry.

Nipacide CFX 3.

Chemical name: Combination of Chlor-methyl and methyl isothiazolinone and 1,6-dihydroxy-2,5-dioxahexane.

Description;

Nipacide CFX3 is water based low toxicity isothiazolinone/ formaldehyde donor biocide, developed for the complete in-can and head space protection of water based products. Nipacide CFX3 is effective against a wide range of microorganisms including gram positive and gram negative bacteria, yeast and fungi. Microorganisms grow at a rapid rate and without use of the correct biocide, numbers can increase dramatically.

Example of the numbers of bacteria able to grow in products if left unpreserved

- Time = 0 mins 1
- Time = 40 mins 4
- Time = 3 hrs 1024
- Time = 5 hrs 16,384
- Time = 7 hrs 1,048,576
- Time = 10 hrs 107,000,000,000

Time = 24 hrs
236,000,000,000,000,000,000,000

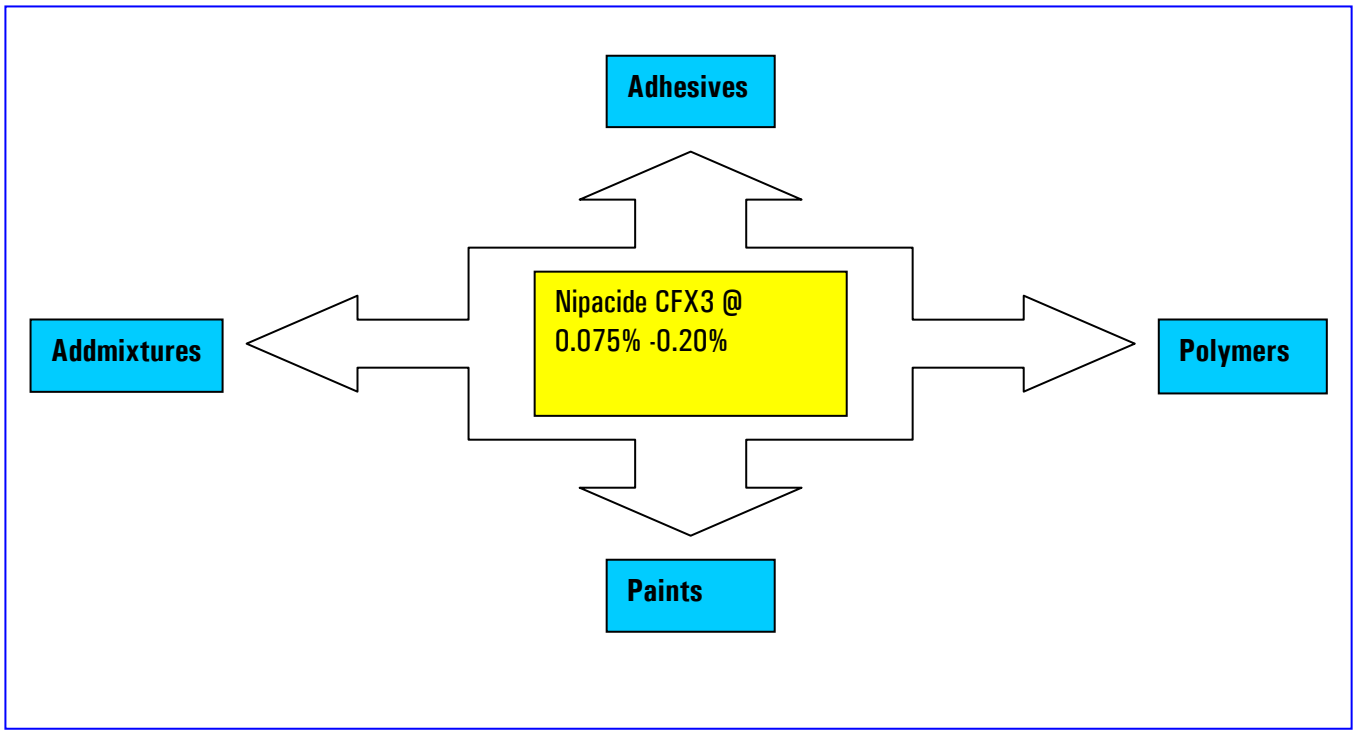
In-Can degradation in paints, polymer and adhesives as a result of bacterial and fungal contamination, can result in:

- Loss of viscosity
- Gassing
- Discoloration
- Bad odors
- Fungal growth on product surface
- Product splitting
- Loss of adhesion
- Production clean down and production down time
- **Loss of profit**

Applications;

Nipacide CFX3 is recommended for preservation of a wide range of applications including water based adhesives, polymer emulsions; water based decorative paints, metal working fluids and construction chemicals. When products are prone to surface contamination by fungi and head space protection is required, Nipacide CFX3 should be one of the biocides of choice. Nipacide CFX3 is effective against a wide range of spoilage organisms effective over a wide pH and temperature range.

Nipacide CFX3. Concentrations to be evaluated



Use level;

Nipacide CFX3 should be evaluated in finished products at levels between 0.075% and 0.20%. Please note that Nipacide CFX3 above 0.16% requires R43 (causes sensitization by skin contact) hazard labeling. Nipacide CFX3 is particularly effective at preventing surface fungal contamination, in-can, by the slow release of formaldehyde.

Microbiological data;

Nipacide CFX3 has a broad spectrum of activity which is demonstrated by the following MIC data.

MIC Levels

Organism	MIC (ppm)
Bacteria	
Pseudomonas aeruginosa	*400*
Pseudomonas putida	*400*
Proteus vulgaris	*125*
Escherichia coli	*500*
Staphylococcus aureus	550
Fungi	
Aspergillus niger	*150*
Penicillium mineoluteum	*75*
Fusarium solani	*125*
Geotrichum candidum	*200*
Yeast	
Candida albicans	*150*

STANDARD FIVE CHALLENGE TEST METHOD: Bacterial Challenge Test.

Samples Tested: Water Based Paint

INOCULUM

The mixed Inoculum of bacteria used is as follows : -

Bacteria:

Pseudomonas vesicularis *Providentia rettgeri*

Alcaligenes faecalis *Flavobacterium odoratus*

Enterobacter aerogenese

Escherichia coli

			Standard scoring system				
Product	**Biocide**	**Level (%)**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**
Water Based Paint	**Unpreserved**	**---**	3	3	3	3	3
Water Based Paint	**Nipacide CFX3**	**0.10**	0	0	2	2	2
Water Based Paint	**Nipacide CFX3**	**0.20**	0	0	0	0	0
Water Based Paint	**CMIT free Isothiazoline blend**	**0.20**	0	1	1	3	3

STANDARD FIVE CHALLENGE TEST METHOD: Fungal Challenge Test.

Samples Tested: Water Based Paint

INOCULUM

The mixed Inoculum of fungi and yeast used is as follows : -

Fungi:

Fusarium solani

Geotrichum candidum

Aspergillus terreus

Yeast

Rhodotorula rubra

Saccharomyces cerevisiae

			Standard scoring system				
Product	**Biocide**	**Level (%)**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**
Water Based Paint	**Unpreserved**	**---**	3	3	3	3	3
Water Based Paint	**Nipacide CFX3**	**0.10**	0	0	0	0	1
Water Based Paint	**Nipacide CFX3**	**0.20**	0	0	0	0	0
Water Based Paint	**CMIT free Isothiazoline blend**	**0.20**	0	0	0	1	1

Key: 0 - Complete Kill

1 - <10^2 Organisms /ml

2 - 10^2 - 10^4 Organisms/ml

3 - >10^4 Organisms/ml

Chemical compatibility;

Nipacide CFX3 is compatible with most raw materials used in the manufacture of industrial products. Nipacide CFX3 compatibility should always be checked and evaluated before use.

Clariant Technical Service;

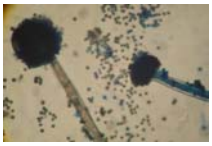
Clariant technical service is available to assist customers in the determination of the optimum use level of biocide required to fully protect their product. A dedicated team of microbiologists are on hand at all times to assist customers with technical enquiries relating to product protection. Full microbiological efficacy testing is available.

AVAILABLE MICROBIOLOGICAL TESTING

- **In can challenge.**
- **Dry film**
- **Chemical analysis**
- **Identification**
- **Disinfectant testing**
- **Microbiological audits**

Regulations and approvals;

FDA21 CFR 175.105 Indirect food additives: Adhesive and components of coatings-Adhesives
FDA21 CFR 176.170 Indirect food additives: Paper and paperboard components-Components of paperboard in contact with aqueous and fatty foods
FDA21 CFR 176.180 Indirect food additives: Paper and paperboard components-Components of paper and paperboard in contact with dry food.
FDA 21 CFR.300 Indirect food additives: Paper and paperboard components-Slimicides.
BFR Rec X1V Preservative for Polymer emulsions in food contact applications.
BFR Rec XXXV1 Preservative for Paper and Board
WGK Classification 3: strongly water polluting



All information is given in good faith but without warranty. Customers should ensure that their use of the products comply with specific regulations in the relevant market