Technical Data Sheet

Clariant In-can Biocides

Clariant

Exactly your chemistry.

Nipacide CI15.

Chemical name: Chlor-methyl and methyl isothiazolinone

Description;

Nipacide CI15 is water based, low toxicity biocide developed for the complete in-can protection of water based products. Nipacide CI15 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

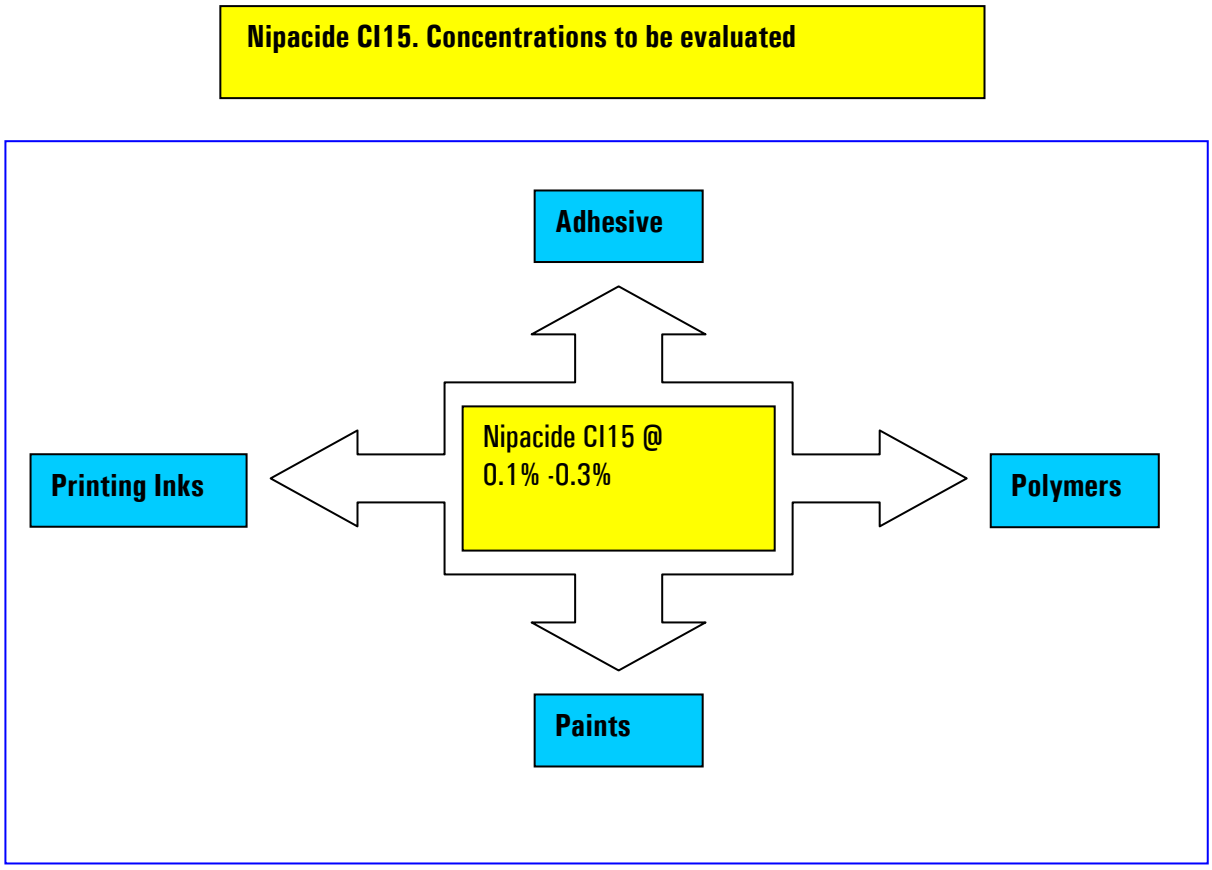
Time = 24 hrs
236,000,000,000,000,000,000,000

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

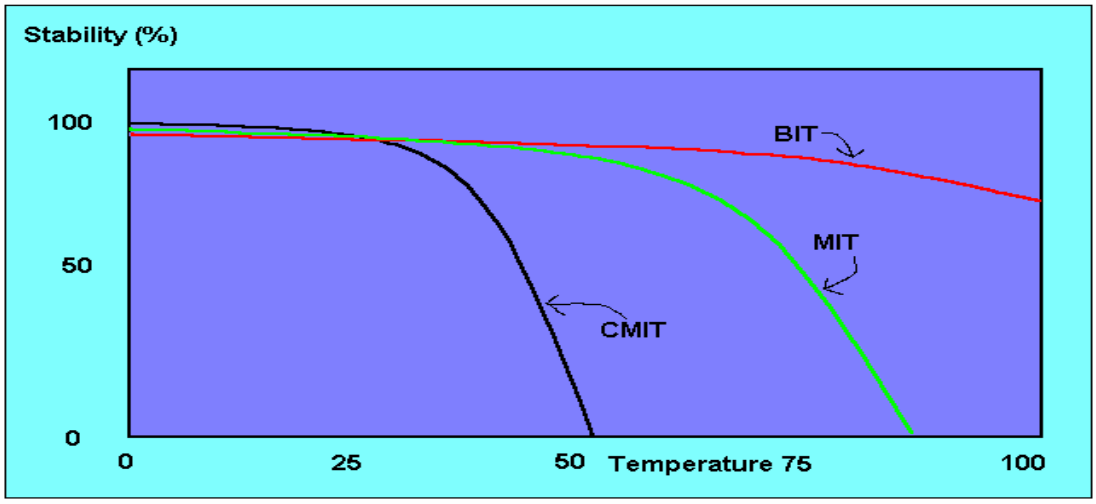
- Loss of viscosity
- Gassing
- Discoloration
- Bad odors
- Product splitting
- Loss of adhesion
- Production clean down and production down time
- **Loss of profit**

Applications;

Nipacide CI15 is recommended for preservation of a wide range of applications including water based /Latex/PVA adhesives, PVA / Acrylic polymer emulsions, water based decorative paints, printing inks, metal working fluids and construction admixtures. Nipacide CI15 is effective against a wide range of common spoilage organisms. Thermal and pH stability for Nipacide CI15 is a critical consideration and it should not be use for products with pH $>$8.5 or production temperatures of $>$40 C.



Temperature stability of CMIT/MIT



Use level;

Nipacide CI15 should be evaluated in finished products at levels between 0.1% and 0.3%. Please note, however, that the use of Nipacide CI15 above 0.1% requires R43 (causes sensitization by skin contact) hazard labeling. If labeling is an issues it is recommended you consider an alternative Clariant biocide, either CMIT/MIT free or a CMIT/MIT combination biocide eg Nipacide CFX 4 or Nipacide IB

Microbiological data;

Nipacide CI15 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	*250*
Proteus vulgaris	*900*
Escherichia coli	*700*
Staphylococcus aureus	1000
Fungi	
Aspergillus niger	*150*
Penicillium mineoluteum	*150*
Fusarium solani	*100*
Geotrichum candidum	*300*
Yeast	
Candida albicans	*50*

STANDARD FIVE CHALLENGE TEST METHOD: Bacterial Challenge Test.

Samples Tested: PVA based adhesive

INOCULUM

The mixed Inoculum of bacteria used is as follows: -

Bacteria:

Pseudomonas aeruginosa

Alcaligenes faecalis

Proteus vulgaris

Escherichia coli

			Standard scoring system				
Product	**Biocide**	**Level (%)**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**
PVA based adhesive	**Unpreserved**	**---**	3	3	3	3	3
PVA based adhesive	**Nipacide CI15**	**0.15**	0	0	0	2	2
PVA based adhesive	**Nipacide CI15**	**0.20**	0	0	0	0	0
PVA based adhesive	**Nipacide BIT20**	**0.20**	0	0	0	0	0

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 FIVE CHALLENGE TEST METHOD: Fungal Challenge Test.

Samples Tested: PVA based adhesive

			Standard scoring system				
Product	**Biocide**	**Level (%)**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**
PVA based adhesive	**None**	**---**	0	2	3	3	3
PVA based adhesive	**Nipacide CI15**	**0.15**	0	0	0	0	2
PVA based adhesive	**Nipacide CI15**	**0.20**	0	0	0	0	0
PVA based adhesive	**Nipacide BIT20**	**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 CI15 is compatible with most raw materials used in the manufacture of industrial products. Nipacide CI15 compatibility should always be checked and evaluated before use.

Clariant Technical Service;

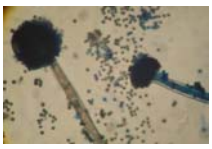
Clariant technical service is available to assist customers in the determination of the optimum use level of biocide required to fully protect their product. A dedicated team of microbiologists are on hand at all times to assist customers with technical enquiries relating to product protection. Full 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 application
BFR Rec XXXV1 Preservative for Paper and Board
EPA Approval. EPA registration number 49403-25
WGK Classification 2: 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