

Technical Data Sheet

Clariant In-can Biocides



Exactly your chemistry.

Nipacide KBS.

Chemical name: Combination of Chlor-methyl and methyl isothiazolinone and Bromo-nitropropanediol

Description;

Nipacide KBS is an aqueous combination of chlorinated, non chlorinated isothiazolinones and bromo-nitropropanediol; Nipacide KBS is a low toxicity biocide developed for the complete in-can protection of water based products. Nipacide KBS 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

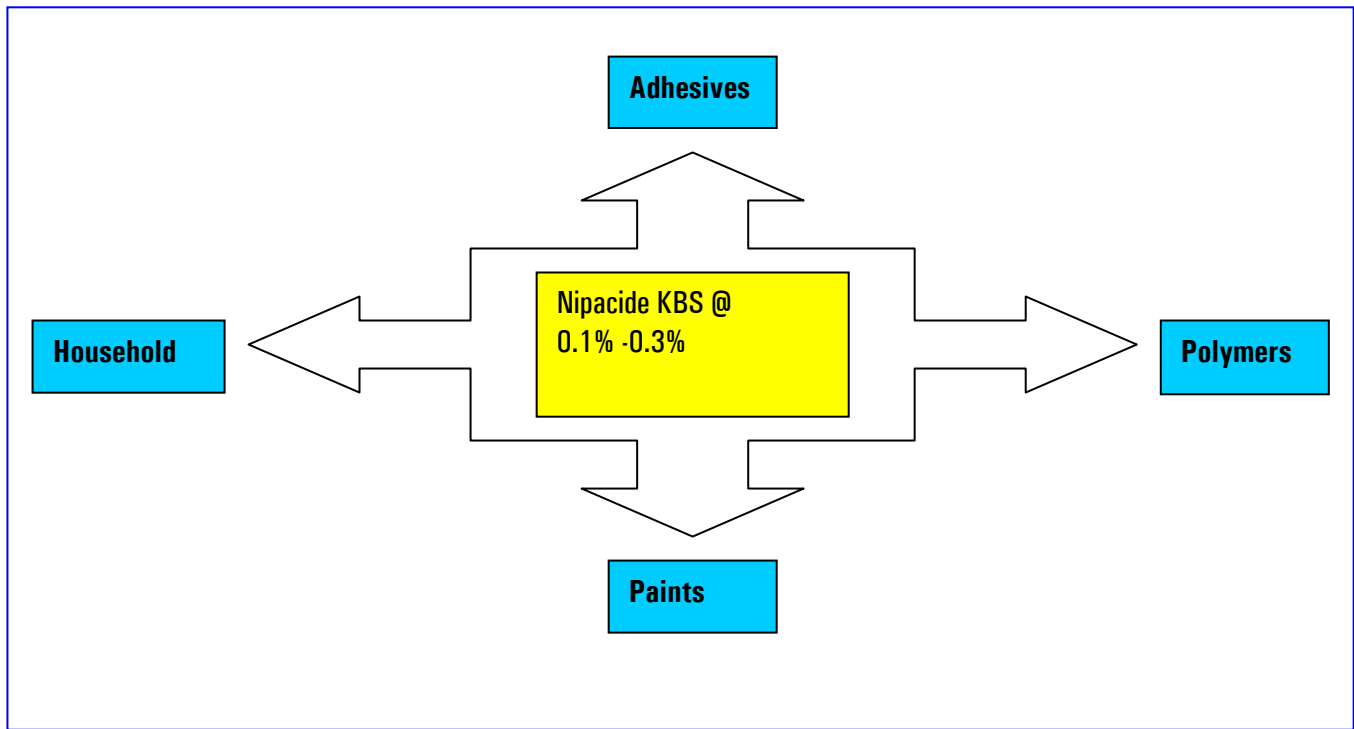
In-Can degradation in paints, polymer and adhesives as a result of bacterial and fungal contamination, can result in:

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

Applications;

Nipacide KBS is recommended for preservation of a wide range of applications including water based, latex and PVA adhesives. Polymer emulsions including, Polyvinyl acetate and acrylic. Water based decorative paints, household products including dishwashing liquids, printing inks and fountain solutions. Nipacide KBS is effective against a wide range of spoilage organisms and effective over a pH range of 4 to pH 8 and temperature below 40° C.

Nipacide KBS. Concentrations to be evaluated



Use level;

Nipacide KBS should be evaluated in finished products at levels between 0.1% and 0.3%.

Microbiological data;

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

| MIC Levels | Organism | MIC (ppm) |
|------------|--------------------------------|-----------|
| | Bacteria | |
| | <i>Pseudomonas aeruginosa</i> | 300 |
| | <i>Pseudomonas putida</i> | 300 |
| | <i>Proteus vulgaris</i> | 300 |
| | <i>Escherichia coli</i> | 300 |
| | <i>Staphylococcus aureus</i> | 300 |
| | Fungi | |
| | <i>Aspergillus niger</i> | 400 |
| | <i>Penicillium mineoluteum</i> | 200 |
| | <i>Fusarium solani</i> | 200 |
| | <i>Geotrichum candidum</i> | 350 |
| | Yeast | |
| | <i>Candida albicans</i> | 300 |



STANDARD FIVE CHALLENGE TEST METHOD: Bacterial Challenge Test.

Samples Tested: PVA adhesive

INOCULUM

The mixed Inoculum of bacteria used is as follows : -

Bacteria:

Pseudomonas aeruginosa

Alcaligenes faecalis

Proteus vulgaris

Escherichia coli

| Product | Biocide | Level (%) | Standard scoring system | | | | |
|--------------|--------------|-----------|-------------------------|--------|--------|--------|--------|
| | | | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
| PVA adhesive | Unpreserved | --- | 3 | 3 | 3 | 3 | 3 |
| PVA adhesive | Nipacide KBS | 0.10 | 0 | 0 | 0 | 1 | 1 |
| PVA adhesive | Nipacide KBS | 0.20 | 0 | 0 | 0 | 0 | 0 |

STANDARD FIVE CHALLENGE TEST METHOD: Fungal Challenge Test.

Samples Tested: PVA adhesive

INOCULUM

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

Fungi:

Fusarium solani

Geotrichum candidum

Yeast

Rhodotorula rubra

Saccharomyces cerevisiae

| Product | Biocide | Level (%) | Standard scoring system | | | | |
|--------------|--------------|-----------|-------------------------|--------|--------|--------|--------|
| | | | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
| PVA adhesive | Unpreserved | --- | 3 | 3 | 3 | 3 | 3 |
| PVA adhesive | Nipacide KBS | 0.10 | 0 | 0 | 0 | 1 | 1 |
| PVA adhesive | Nipacide KBS | 0.20 | 0 | 0 | 0 | 0 | 0 |

Key: 0 - Complete Kill

1 - $<10^2$ Organisms /ml

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

3 - $>10^4$ Organisms/ml

Chemical compatibility;

Nipacide KBS is compatible with most raw materials used in the manufacture of industrial products. Nipacide KBS 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

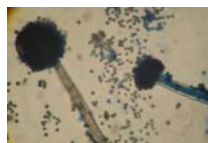
FDA21 CFR 176.180 Indirect food additives: Paper and paperboard components-
Components of paper and paperboard in contact with dry food.

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 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