

Technical Data Sheet

Clariant In-can Biocides



Exactly your chemistry.

Nipacide BNPD.

Chemical name: Bromo-nitropropanediol

Description;

Nipacide BNPD is bromo-nitropropanediol. Nipacide BNPD is a low toxicity biocide developed for the in-can protection of water based products. Nipacide BNPD is effective against a wide range of bacteria but has limited activity against 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

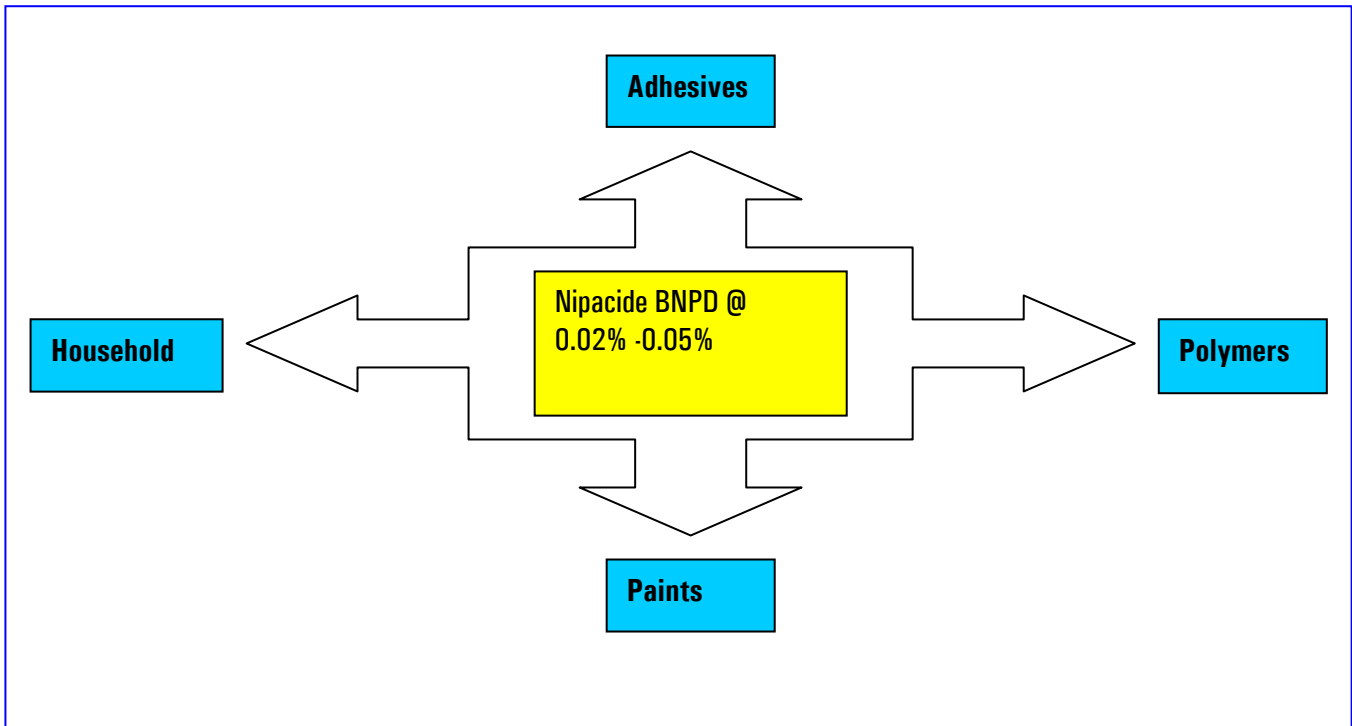
In-Can degradation in paints, polymer and adhesives as a result of bacterial and fungal contamination, can result in:

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

Applications;

Nipacide BNPD 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 BNPD is particularly effective when additional antibacterial activity is required. Nipacide BNPD is effective over a pH range of 4 to pH 8 and at temperature below 40° C.

Nipacide BNPD. Concentrations to be evaluated



Use level;

Nipacide BNPD should be evaluated as in finished products at levels between 0.02% and 0.05%. Please note that Nipacide BNPD should be used in combination with other active biocides to provide full spectrum of antimicrobial activity to include yeasts and fungi

Microbiological data;

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

| MIC Levels | Organism | MIC (ppm) |
|------------|--------------------------------|-----------|
| | Bacteria | |
| | <i>Pseudomonas aeruginosa</i> | 50 |
| | <i>Pseudomonas fluorescens</i> | 50 |
| | <i>Proteus mirabilis</i> | 50 |
| | <i>Escherichia coli</i> | 50 |
| | <i>Staphylococcus aureus</i> | 50 |
| | <i>Bacillus subtilis</i> | 150 |
| | Fungi | |
| | <i>Aspergillus niger</i> | 2000 |
| | <i>Penicillium glaucum</i> | 1000 |
| | <i>Trichoderma viride</i> | > 1000 |
| | Yeast | |
| | <i>Candida albicans</i> | 1000 |



Chemical compatibility;

Nipacide BNPD is compatible with most raw materials used in the manufacture of industrial products. Care should be taken when using Nipacide BNPD in formulations containing amines. Nipacide BNPD 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

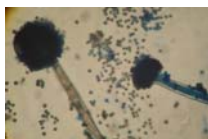
FDA21 CFR 176.170 Indirect food additives: Paper and paperboard components-Components of paperboard in contact with aqueous and fatty foods

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.

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