



JEECIDE[®] CAP-2

Globally Compliant Broad Spectrum Preservative

Introduction

Jeecide[®] CAP-2 is a synergistic preservative blend comprised of Caprylyl Glycol, Phenoxyethanol, and Hexylene Glycol. It is an easy-to-use clear liquid preservative that is both free of parabens and formaldehyde donors. With broad spectrum capabilities, **Jeecide[®] CAP-2** is effective against bacteria, yeast, and mold.

Jeecide[®] CAP-2 is compatible with anionic, cationic, and non-ionic surfactants and emulsifiers and has a stable pH range of 3 — 10. It is toxicologically safe for use.

Jeecide[®] CAP-2 is equally suitable for use in both rinse-off and leave-on products. It is effective in difficult to preserve water/silicone emulsions. It is also approved for use in the United States and Europe, but is restricted in Japan.



KEY BENEFITS:

- Broad spectrum
- Paraben and formaldehyde donor-free
- Widely approved
- Easy-to-use liquid
- Compatible with non-ionics, cationics, and anionics
- Non-toxic



PRODUCT APPLICATIONS:

- Skin creams and lotions
- Liquid foundations
- Lip products
- Hair styling lotions
- Pomades
- Sun care



FORMULATING GUIDELINES:

The recommended use level is 0.5 — 1.5% for complete microbial protection.

Please note that it is important that every formulation be challenge-tested to determine the correct level of **Jeecide[®] CAP-2** to ensure proper preservation.

Typical Properties

INCI Name	Caprylyl Glycol (and) Phenoxyethanol (and) Hexylene Glycol
Preservative Compositional Breakdown	Phenoxyethanol: 30.0 - 40.0%
Appearance @ 25°C	Clear oily liquid
Odor	Mild, characteristic
Color	Colorless to slightly yellow
Specific Gravity	0.967 - 0.997
% Water (KF)	2 Maximum
Recommended Use Level	0.5 - 1.5%

Solubility Data

Ingredient	Compatibility
Butylene Glycol	Soluble
C12-15 Alkyl Benzoate	Soluble
Caprylic/Capric Triglycerides	Soluble
Cyclomethicone	Insoluble
Dimethicone 200/100 cst	Dispersible
Ethanol 190 Proof	Soluble
Isododecane	Soluble
Isopropyl Myristate	Soluble
Mineral Oil	Dispersible
Phenyltrimethicone	Soluble
Propylene Glycol	Soluble
Water	Dispersible

Minimum Inhibitory Concentration (MIC)

Objective: To determine activity of **Jeecide® CAP-2** to Minimum Inhibitory Concentration (MIC) broth tests.

Procedure: A standard microtiter plate MIC was conducted in Tryptic Soy Broth (bacteria) Sabouraud Dextrose Broth (yeast and molds).

Results: As shown in Table 1, **Jeecide® CAP-2** is very effective at low concentrations against Gram-negative and Gram-positive bacteria and effective against yeasts and molds.

Table 1.

Organism	ATCC #	Jeecide® CAP-2
Gram-negative bacteria		
<i>Burkholderia cepacia</i>	25416	1250
<i>Escherichia coli</i>	8739	625-1250
<i>Enterobacter gergoviae</i>	33028	5000
<i>Enterobacter aerogenes</i>	13048	1250-2500
<i>Flavobacterium odoratum</i>	NCIB 13294	1250
<i>Klebsiella pneumoniae</i>	4352	625
<i>Proteus mirabilis</i>	9240	1250
<i>Pseudomonas aeruginosa</i>	9027	2500-5000
Gram-positive bacteria		
<i>Staphylococcus aureus</i>	6538	625
<i>Staphylococcus epidermidis</i>	12228	625
Yeast		
<i>Candida albicans</i>	10231	313
<i>Saccharomyces cerevisiae</i>	7752	<78
Mold		
<i>Aspergillus niger</i>	9642	<78
<i>Pencillium sp.</i>	Cosmetic isolate	<78

Kill Test Data

Jeecide® CAP-2 has been tested using the tube testing method. The results are in Table 2.

Table 2. Jeecide® CAP-2 @ 1%

Organism		Results
Bacteria	Pool 1	3
	Pool 2	3
	Pool 3	3
Yeast	Pool 4	3
Mold	Pool 5	3

Key:

0 = No Kill

1 = Slight Kill

2 = Moderate Kill

3 = Kill

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Please contact your JEEN Representative or visit our website at www.JEEN.com to learn more about our products, our technologies, and how we can help you reduce your carbon footprint and produce a greener product.

Jeecide CAP-2 TB ver 1.0