

Formulating with JEECIDE® Products:
Featuring: JEECIDE® NAS-CC



Jeen International Corporation is one of the largest manufacturers of preservatives for personal care and pharmaceutical applications. Considering the emerging need in the global market for natural preservatives, JEEN proudly introduces Jeeicide® NAS- CC natural preservatives for personal and health care products, developed as an alternative to synthetically derived preservative systems.

Product Description

JEECIDE® NAS-CC

INCI: *Murraya Koenigii* (Curry) Leaf Oil, *Cinnamomum Zeylanicum* (Cinnamon) Leaf Oil

JEECIDE® NAS-CC is a Natural Antimicrobial Ingredient. The Curry Leaf & Cinnamon Leaf plants are cultivated on a plantation spread over 100 acres, and the extraction is carried out in a GMP processing unit that is FDA approved.

JEECIDE® NAS-CC is a broad based spectrum natural liquid preservative system, suitable for personal care and cosmetic applications. It has been designed specifically for formulations with a pH < 6.0. It is effective against Gram-positive & Gram-negative bacteria, yeast and mold. Being non-toxic, it is very safe and effective to use.

pH Stability:

JEECIDE® NAS-CC provides excellent protection at pH 6 and can widely be used at pH 3-7.

Cosmetic & Personal Care

Applications:

- **Rinse Off Products**
- **Shampoos**
- **Shower Gels**
- **Body Washes**
- **Foam Bats**
- **Skin Care**
- **Creams**
- **Lotions**
- **Emulsions**
- **Gels**

Recommended Use Levels:

Can be added at 0.75 – 1.2% in rinse-off and leave on product formulations.

Benefits:

- **Long Shelf Life**
- **Broad Spectrum Activity**
- **Non-Toxic**
- **Wide Application**
- **Excellent bacterial and Fungal Control**
- **Ensured Safety – No Label Required**

Preservative Compositional Breakdown:

Jeeicide NAS-CC is a Proprietary blend of:

- ***Murraya Koenigii* (Curry) Leaf Oil**
- ***Cinnamomum Zeylanicum* (Cinnamon) Leaf Oil**

Solubility Data

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

D: Dispersible
 IS: Insoluble
 S: Soluble

General Specifications-Typical Properties

Appearance:	Clear Liquid
Odor:	Mild
Specific Gravity:	0.91 +/- 0.01
Color:	Pale Yellow

This document is for informational purposes only. Please contact your JEEN International Sales Representative before writing specifications on this product.

Packaging Information:

Drum: Net Wt: 55.12 Lbs. (25 Kgs.)
Pail: Net Wt: 22 Lbs. Net (9.97 Kgs.)

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NEW!

Method of Addition:

Jeecide® NAS- CC is typically used at 0.75 – 1.2% in rinse-off and leave on product formulations.

Jeecide® NAS- CC provides excellent protection at pH 6 and can widely be used at pH 3-7.

Jeecide® NAS- CC can be added into any phase of the manufacturing process including the water phase of emulsions, it can tolerate temperatures up to 60 degrees C.

Jeecide® NAS- CC requires intense mixing for uniform dispersal of the active ingredients when low amounts of emulsifiers are in the system.

Jeecide® NAS- CC is fully compatible with a wide range of formulations as well as most types of herbal extracts, proteins and anionic systems.

Broad Spectrum Activity

Jeecide® NAS- CC provides excellent protection against various types of common organisms in a typical Facial Cream, Hand Cream, Shower Gel, and Moisturizing Lotion at pH6. The broad spectrum activity of Jeecide® NAS- CC leads to greater efficacy. It provides protection against both types of contaminants.

Preserved By Nature

In the on-going development of new preservatives, Jeen International Corporation encountered many customers seeking natural preservatives. To satisfy the merging global demand, Jeen researched various naturally occurring essential oils commonly used around the world.

Jeecide® NAS- CC is based on two key essential oils: Cinnamon Leaf Oil (*Cinnamomum Zeylanicum*) & Curry leaf Oil (*Murraya Koenigii*)

Curry Leaf

Botanical Name: *Murraya Koenigii*
Part Used: Leaf
Extraction Method: Steam Distillation

Description: The small deciduous Curry Leaf plant is native to India. It grows in abundance in jungles and farmlands almost everywhere, excluding the higher reaches of the Himalayas'. In the east, it is also found in Burma and Malaysia.

Curry leaves are extensively used in South Indian and Sri Lankan cuisine. Curry powder is a British invention conceived to imitate the exotic taste and flavors of Indian Cuisine.

Curry leaves are highly aromatic and possess anti-oxidant, anti-microbial, anti-inflammatory properties. The leaves are small and narrow often resembling the leaves of the Neem tree, and hence Curry leaves sometimes referred to as Black Neem.

Cinnamon Leaf

Botanical Name: *Cinnamomum Zeylanicum*
Family: Lauraceae
Part Used: Leaf
Extraction Method: Steam Distillation
Origin: India

Botanical Description:

Though highly recognized today as a culinary spice, the use of Cinnamon for medicinal and religious purposes dates as far back as 2700 BCE. It was used in ancient Egypt/Middle East for embalming and controlling bacterial and viral outbreaks. Chinese records during that period took note of its efficiency as a valuable treatment for fever, diarrhea and menstrual ailments. Cinnamon is a member of the Lauraceae family and is natively grown in Sri Lanka. Cinnamon is harvested from a particular variety of evergreen tree that can grow as high as 60 feet and thrives best in tropical forests. The bark has a reddish brown hue marked with tiny, yellow flowers and leather-textured leaves that give off a spicy aroma.

Therapeutic Properties:

Cinnamon Leaf essential oil strengthens the immune system against diseases caused by fungi, viruses and bacteria. It has stimulating properties that help combat congestion and improve digestion, as well as sooth abdominal spasms and increase circulation. It is anti-spasmodic, and is valuable treatment for various digestive ailments such as stomach or intestinal cramps, colitis, flatulence, nausea, diarrhea and indigestion. Cinnamon Leaf Oil has long been popular as a mouthwash and breath freshener.

Aromatherapeutic Use:

Its warm fragrance makes it excellent for calming and soothing mind and emotions.

Constituents:

Oil from Cinnamon leaf is composed mainly of eugenol.



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Face Wash Preserved with 0.75% Jeecide[®] NAS- CC

Test Organism	Inoculum Density / 0.1 ml	Weight of Sample	Expected count per gm of Sample
Staphylococcus aureus	3.2 x 10 ⁷ cfu/ml	20.09 g	1.6 x 10 ⁶ cfu/g
Escherichia coli	3.3 X 10 ⁷ cfu/ml	20.42 g	1.6 x 10 ⁶ cfu/g
Pseudomonas aeruginosa	4.1 x 10 ⁷ cfu/ml	20.13 g	2 X 10 ⁶ cfu/g
Aspergillus niger	3.8 x 10 ⁶ cfu/ml	20.30 g	1.8 x 10 ⁵ cfu/g
Candida albicans	1.8 x 10 ⁷ cfu/ml	20.00 g	9 x 10 ⁵ cfu/g

Test Organism	Count at Zero Hour	Count at 7 th Day	Count at 14 th Day	Count at 21 st Day	Count at 28 th Day
Staphylococcus aureus	1.3 x 10 ⁶ cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Escherichia coli	1.2 X 10 ⁶ cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Pseudomonas aeruginosa	1.8 x 10 ⁶ cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Aspergillus niger	1.1 x 10 ⁵ cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Candida albicans	7.2 x 10 ⁵ cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g

Toxicity Information:

Mainly due to impending legislation in Europe, which will soon impose various marketing restrictions, Jeecide[®] NAS- CC preservative has not been tested on animals. Therefore, toxicity testing information regarding the blended material will not be generated. However, each of the Jeecide[®] NAS- CC ingredients has been tested extensively over the years. Overall, the ingredients in Jeecide[®] NAS- CC have been carefully chosen due to their global acceptance as well as excellent toxicity profiles

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Cream Base Preserved with 0.75% Jeecide® NAS- CC

Test Organism	Inoculum Density / 0.1 ml	Weight of Sample	Expected count per gm of Sample
Staphylococcus aureus	3.2×10^7 cfu/ml	20.09 g	1.6×10^6 cfu/g
Escherichia coli	3.3×10^7 cfu/ml	20.13 g	1.6×10^6 cfu/g
Pseudomonas aeruginosa	4.1×10^7 cfu/ml	20.08 g	2×10^6 cfu/g
Aspergillus niger	3.8×10^6 cfu/ml	20.02 g	1.9×10^5 cfu/g
Candida albicans	1.8×10^7 cfu/ml	20.14 g	8.9×10^5 cfu/g

Test Organism	Count at Zero Hour	Count at 7 th Day	Count at 14 th Day	Count at 21 st Day	Count at 28 th Day
Staphylococcus aureus	1.2×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Escherichia coli	1.3×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Pseudomonas aeruginosa	1.5×10^6 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Aspergillus niger	1.2×10^5 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g
Candida albicans	5.1×10^5 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g	< 10 cfu/g

Safety and Regulatory Profile

Jeecide® NAS- CC has an excellent safety and toxicological profile and is safe to use in a wide range of personal care applications.

(The information given in this brochure is based on our current knowledge and experience, and may be used at your discretion and risk. We do not assume any liability in connection with your product or its use. You must comply with all applicable laws and regulations and observe all third party rights.)