

# Jeechem® NDA Series

## Naturally-derived silicone alternatives



### Silicone oil alternatives

### Naturally-derived emollients

### Sensory enhancers

### Reduces unpleasant sensorial aesthetics

### Excellent dispersing agents

### Anti-soaping effect

## The JEECHEM NDA Series is a naturally-derived\*, multifunctional product series created to serve as silicone alternatives for various applications.

The JEECHEM NDA Series exhibits great versatility, vastly simplifying the incorporation of difficult ingredients such as UV filters, high purity actives, silicones, and silicone derivatives into formulations. The soft and velvety sensorial benefits of JEECHEM NDA mask their powerful performance as formulation solutions in cosmetic ingredients.

Their functional properties are limited only by the formulation need and/or the creativity of the formulator using them.



liquid

JEECHEM NDA—LC

**INCI: C9-12 Alkane**

JEECHEM NDA—CC

**INCI: C13-14 Alkane**

JEECHEM NDA—5

**INCI: C15-19 Alkane**



crystalline solid

JEECHEM NDA—HC

**INCI: C18-21 Alkane**

JEECHEM NDA can be used as individual ingredients or in combination with other JEECHEM NDAs. Isoparaffin-free, non-irritating, non-sensitizing, and suitable for both leave-on and rinse-off formulations in a wide variety of personal care applications.

### Recommended applications



Skin care



Makeup



Hair care



Body care

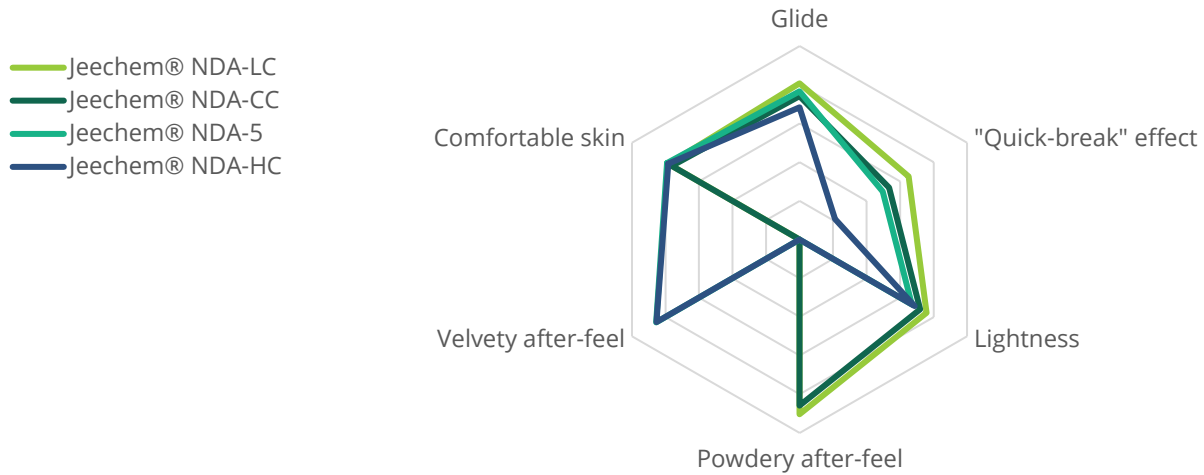
\*100% naturally-derived from vegetable feedstock



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Vantage®

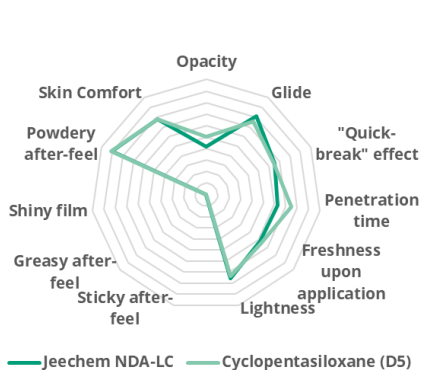
# Sensory profile of JEECHEM NDA Series



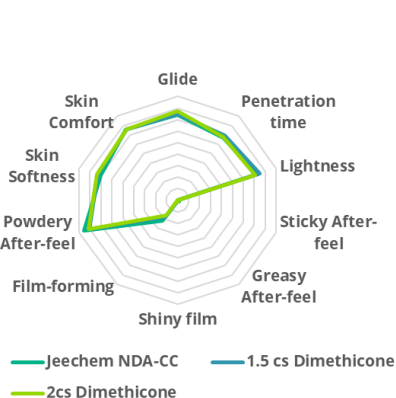
JEECHEM NDA-LC	JEECHEM NDA-CC	JEECHEM NDA-5	JEECHEM NDA-HC
C9-12 Alkane	C13-14 Alkane	C15-19 Alkane	C18-21 Alkane
<ul style="list-style-type: none"> <li>Provides "quick-break" effect upon application and a powdery after-feel</li> <li>Excellent substitute for Cyclopentasiloxane (D5)</li> </ul>	<ul style="list-style-type: none"> <li>Penetrates quickly, giving extreme lightness and softness to the skin</li> <li>Great alternative to low viscosity Dimethicones</li> </ul>	<ul style="list-style-type: none"> <li>For an excellent glide and a comfortable skin film, with a velvety after-feel</li> <li>Sensory profile close to 5cs Dimethicone</li> </ul>	<ul style="list-style-type: none"> <li>Enhances slip in formulation for a very smooth and velvety skin feel</li> <li>Unique sensorial profile</li> </ul>

## Sensory Profile JEECHEM NDA Series vs Controversial Ingredients

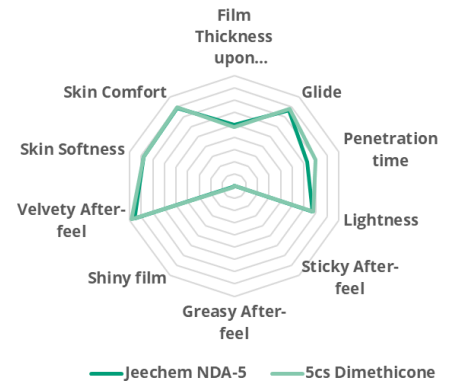
Our products have been put through their paces and benchmarked against the most common silicones and petrochemical emollients: Cyclopentasiloxane, 1.5cst Dimethicone, 2cst Dimethicone and Isododecane.



**JEECHEM NDA-LC** and **Cyclopentasiloxane (D5)** have similar sensory in formulation. They provide a quick-break effect upon application and a powdery after-feel.



Formulations developed with **JEECHEM NDA-CC** and **low viscosity Dimethicone** are characterized by a fast penetration time and gives extreme lightness and softness to skin after penetration.



**JEECHEM NDA-5** sensory profile is close to **5cs Dimethicone** in formulation. It provides excellent glide upon application and leaves a comfortable film on skin, with a velvety after-feel.

# JEECHEM NDA Series Solubility @ 30% Alkane

	JEECHEM NDA- LC	JEECHEM NDA- CC	JEECHEM NDA- HC	JEECHEM NDA- 5
<b>Natural Oils</b>	Soluble	Soluble	Soluble	Soluble
<b>Castor Oil</b>	Insoluble	Insoluble	Insoluble	Insoluble
<b>Shea Butter</b>	Soluble	Soluble	Soluble	Soluble
<b>Cocoa Butter</b>	Soluble	Soluble	Soluble	Soluble
<b>Caprylic / Capric Triglyceride</b>	Soluble	Soluble	Soluble	Soluble
<b>Oleyl Oleate</b>	Soluble	Soluble	Soluble	Soluble
<b>C12-15 Alkyl Benzoate</b>	Soluble	Soluble	Soluble	Soluble
<b>Isopropyl Myristate</b>	Soluble	Soluble	Soluble	Soluble
<b>Isopropyl Palmitate</b>	Soluble	Soluble	Soluble	Soluble
<b>Isononyl Isononanoate</b>	Soluble	Soluble	Soluble	Soluble
<b>Mineral Oil</b>	Soluble	Soluble	Soluble	Soluble
<b>Polydecene</b>	Soluble	Soluble	Soluble	Soluble
<b>Isopropyl Alcohol</b>	Soluble	Soluble	Insoluble	Soluble
<b>Dimethicones</b>	Soluble	Soluble	Soluble	Soluble
<b>Cyclopentasiloxane</b>	Soluble	Soluble	Soluble	Soluble
<b>Phenyltrimethicone</b>	Soluble	Soluble	Soluble	Soluble

## A closer look at the JEECHEM NDA Series

JEECHEM NDA	<sup>14</sup> C dpm/gC	± 1 σ
JEECHEM NDA - LC	13.93	0.08
JEECHEM NDA - CC	13.16	0.08
JEECHEM NDA - HC	13.93	0.08
JEECHEM NDA - 5	13.48	0.08

The <sup>14</sup>C activity of JEECHEM NDA—LC, CC and HC are equivalent to 96-102% of the 2017 and present day <sup>14</sup>C reference activity 13.7 dpm/gC. This indicates no addition or dilution with fossil fuel derived material to these three samples.

Recommended materials to formulate JEECHEM NDA Series with:

Natural emollients
Glyceryl Stearate
Cetyl Palmitate
Myristyl Myristate
Myristyl Stearate
Cetyl Esters
Behenyl Alcohol
Cetyl Alcohol
Cetearyl Alcohol
Stearyl Alcohol
Oleyl Alcohol
Stearic Acid
Palmitic Acid

Natural emulsifiers
Polyglyceryl-4 Oleate
Sorbitan Laurate
Sorbitan Oleate
Sorbitan Palmitate
Sorbitan Stearate



# JEECHEM NDA Series

## Naturally-derived silicone alternatives

	JEECHEM NDA—LC	JEECHEM NDA—CC	JEECHEM NDA—5	JEECHEM NDA—HC
Appearance @ 25°C	Clear, Colorless Liquid	Clear, Colorless Liquid	Clear, Colorless Liquid	White Waxy Solid
Kinematic Viscosity (cSt 30°C)	1.8	2.5	3.5	5.0
Recommended Use Levels*	0.5 – 50%	0.5 – 60%	0.5 – 90%	0.5 – 80%

## JEECHEM NDA Applications



### Skin Care & Color Cosmetics

- ✓ Impacts finish product's feel/texture and playtime
- ✓ Offers a smooth application that glides on easily
- ✓ Leaves a soft, powdery/velvety feel
- ✓ Light NDA's impact initial feel and texture
- ✓ Heavier NDA's offer comfort and glide
- ✓ Can be used as a quick drying/setting agent for foundations



### Hair Care

- ✓ Contributes to emollience
- ✓ Adds shine
- ✓ Offers transient conditioning in conditioners and rinses
- ✓ Serves as an ideal vehicle to replace more volatile hydrocarbons in styling gels and heat-activated products
- ✓ Acts as a co-dispersant and solvent in hair colorants, masks and styling products
- ✓ Helps prevent split-ends and fly-aways



### Sun Care

- ✓ Mitigates the greasy feel associated with sunscreens without compromising SPF levels
- ✓ Adds a velvety, emollient feel to finished SPF formulations
- ✓ Imparts soft cushion with adequate playtime
- ✓ Superb dispersants for minerals such as Titanium Dioxide and Zinc Oxide
- ✓ Minimizes « whitening effect » of sunscreens
- ✓ Minimizes greasiness

## Formulation guidelines

**In emulsion systems**, JEECHEM NDA can be added to the oil phase. Heating JEECHEM NDA—5, JEECHEM NDA—CC, and JEECHEM NDA—HC to 70-80°C is recommended, while JEECHEM NDA—LC is best added when the emulsion cools to 45°C. An HLB 11-12 surfactant is required for emulsification.

**In anhydrous systems**, heat JEECHEM NDA—5, JEECHEM NDA—CC, and JEECHEM NDA—HC to 70-75°C. For liquid or semi-liquid products, add JEECHEM NDA sequentially with other ingredients from highest to lowest viscosity at ≤ 85°C. For stick-form products, follow the same process with waxes and oils.

JEECHEM NDA is compatible with natural fatty acids, fatty alcohols, and esters. Match the HLB of the emulsifier system to the oil phase (W/O: 2-6 | O/W: 6-11).

It's best with lipophilic pigments/colorants and unsuitable for aqueous formulas. For fragrances, use JEECHEM NDA as a solubilizer or co-solubilizer. In hand sanitizers, add to non-alcohol-based formulations.

JEECHEM NDA Series is not a simple 1:1 replacement for silicones. JEECHEM NDA Series and silicones have similar sensorial properties however, chemically, they belong to two different categories. Reformulation may be required when trying to replace silicones with JEECHEM NDA in an existing formulation.

\*Recommended use levels based on application:

Skin Care	Hair Care	Color cosmetics	Sun Care
Leave On: 1-75%	Leave On: 1-90%	1-40%	1-20%
Rinse off 1-30%	Rinse off 1-20%		