

It's the listening that creates the difference



INUTEC[®]SL1

Patented Inulin Technology!

INUTEC[®]SL1 - The power of the detail in O/W Emulsion

Obtained from:

- Inulin extracted from the root of chicory (Cichorium intybus)
- Lauric acid derived from Coconut oil (Cocos nucifera)

Inulin is a linear polysaccharide consisting of fructose with one starting glucose part.

Inulin demonstrates 2 remarkable characteristics:

- Unlike most other molecules Inulin is extremely flexible. It behaves like a rope.
- Inulin intensively adsorbs water.

To obtain Inutec[®]SL1 this flexible and hydrophilic inulin is grafted with lipophilic lauryl chains.

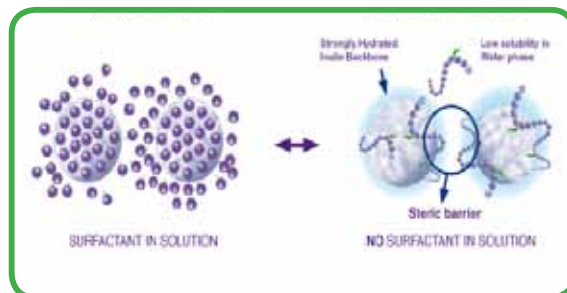


INUTEC[®]SL1 - The unbreakable stabilizer for O/W emulsions

The mechanism:

In a mixture of oil and water, Inutec[®]SL1 migrates quickly to the Oil/Water interface. The lauryl chains are firmly anchored into the oil, while the long inulin polymers encapsulate tightly the oil droplet. In this way an unbreakable film of strongly hydrated inulin stabilizes the oil droplets. Inutec[®]SL1 intensively improves the stability performances of all other O/W-emulsifiers.

O/W-emulsions stabilized with Inutec[®]SL1 shows a remarkable resistance against the 2 major instability issue: coalescence and Ostwald ripping.



The endless power!

Type and amount of oil:

Inutec[®]SL1 is compatible with **ALL** oil soluble or lipophilic substances such as:

- Mineral oil / waxes
- Esters
- Vegetable oils / buttes
- Silicone oils / elastomers
- Essential oils
- Sun screens
- Combination of all these oils

INUTEC[®]SL1 stabilizes all oils up to 55%.

Conditions:

Inutec[®]SL1 performs without limitations in following extreme conditions:

pH	4-11
Cold temperature	As low as -20°C
Hot temperature	As high as +50°C
Temperature shock	From -5°C to +45°C

Inutec[®]SL1 performs without limitations with following difficult ingredients:

Salt (sodium, potassium, calcium, magnesium,...)	Up to 26%
Cationic substances	Unlimited
Anionic substances	Unlimited
Acid preservatives	Unlimited
Pentylene glycol, Caprylyl glycol	Unlimited

With Inutec[®]SL1 the viscosities from spray to butter can be obtained.

Unique: a sprayable emulsion with 50% of oil is possible.

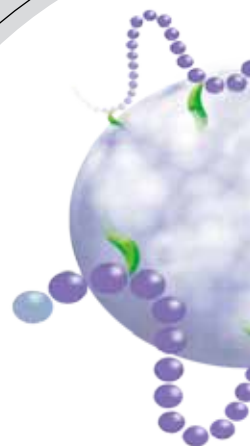
Dosage:

Inutec[®]SL1 stabilizes already emulsions from 0.2%

Standard: 0.2 - 4%

Flawless Upscaling

Most emulsifiers are sensitive to upscaling. The viscosity/stability obtained on lab scale differs from the viscosity/stability obtained in production. INUTEC[®]SL1 avoids all upscaling difficulties, as the performance of INUTEC[®]SL1 is quite independent of emulsification temperature and way of mixing/homogenizing



INUTEC[®]SL1 - Safety

Unlike emulsifiers, Inutec[®]SL1 cannot interfere with the skin because of its size and chemical structure.

The safety profile is therefore impeccable:

Skin irritation: not irritant

Eye irritation: not irritant

Sensitization: not sensitizing

INUTEC[®]SL1 - Innovates the skin feel of emulsions

The flexible hydrated Inulin film is able to encapsulate the oil into tiny droplets with an average diameter of not more than 1µm. The oil droplet size of emulsions stabilized with INUTEC[®]SL1 is therefore significantly smaller than the droplet size obtained with standard emulsifiers.

Since our skin is not able to feel particles smaller than 1µm, INUTEC SL1-emulsions are evaluated as

- light

- non-greasy

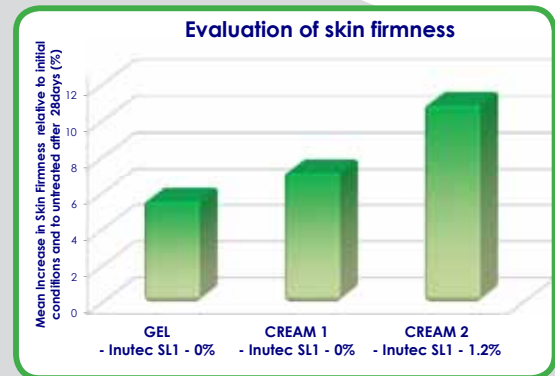
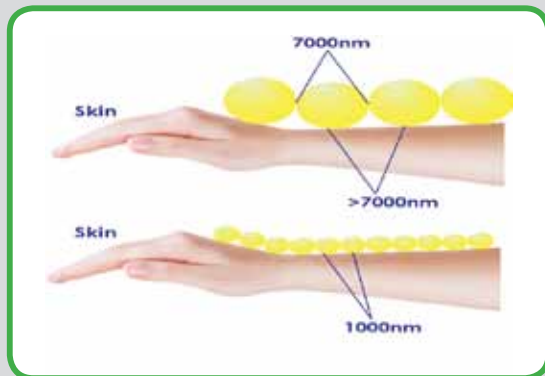
- non-tacky

- extraordinary spreadability

Inutec[®]SL1 is able to mask the tackiness and greasiness of sunscreens, vitamins, waxes, petrolatum and many other unpleasant additives.

INUTEC[®]SL1 - Enhances the performance of actives

The micro oil droplets formed by Inutec[®]SL1 cover the skin surface more efficiently as larger droplets, formed by a standard emulsion.



The extremely small and stable droplets form actually a kind of patch on the skin: A liquid patch

The actives present in the emulsion are therefore longer trapped on the skin with Inutec[®]SL1. Moreover the water phase is longer trapped under the liquid patch formed by the small droplets. This trapped water increases the availability of actives for the skin.

This increased availability and hence performance of actives with Inutec[®]SL1 has been demonstrated in following study.

Centella asiatica, a well known firming active, has been added in an emulsion with and without Inutec[®]SL1. Inutec[®]SL1 boosts the performance of an active by 50%.

Ingredient	INCI	Gel	CR1	CR2
Water	Aqua	QS	QS	QS
Euxyl PE9010	Phenoxyethanol, Ethylhexylglycerin	QS	QS	QS
Glycerin	Glycerin	2.1	2.1	2.1
Tego care CG90	Cetearyl Glucoside	0	0.5	0.2
Inutec SL1	Glycerin, Inulin Lauryl Carbamate	0	0	1.2
Sabonal C1618 50/50	Cetearyl Alcohol	3	3	3
Miglyol 812	Caprylic/Capric Triglyceride	10	10	10
TECA	Centela Asiatica Extract	1	1	1
Rhesperse RM100	Sodium Polyacrylate	0.5	0.5	0.5

INUTEC®SL1 - Formulations

Massage Lotion - MO-240603-C

Phase	Ingredient	INCI	Function	%
A	Water	Aqua	-	QS
	Euxyl PE9010	Phenoxyethanol, Ethylhexylglycerin	Preservative	QS
	Keltrol T	Xanthan Gum	Stabilizer	0,06
	Inutec SL1	Glycerin, Inulin Lauryl Carbamate	Stabilizer	4
	Edeta BD	Disodium EDTA	Complexing	0,05
	Lactic Acid	Lactic Acid	pH adjuster	QS
B	Paraffinum Liquidum	Paraffinum Liquidum	Mineral oil	42
	Sunflower Oil High Oleic	Helianthus Annuus Seed Oil	Vegetable oil	5
	PCL Liquid	Cetearyl Ethylhexanoate	Emolient	2,5
	Cetiol SN	Cetearyl Isononanoate	Emolient	2,5
	OxyneX 2004	Propylene Glycol, BHT, Ascorbyl Palmitate, Glyceryl Stearate	Antioxidant	QS
	Perfume	Parfum	Perfume	QS
C	Carbopol Ultrez-21	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	Stabilizer	0,1
	Water	Aqua	-	2,9
D	Sodium Hydroxide	Sodium Hydroxide	pH adjuster	QS

High SPF Spray - SPF50S-100207-H-SL1

Phase	Ingredient	INCI	Function	%
A	Water	Aqua	-	QS
	Euxyl PE9010	Phenoxyethanol, Ethylhexylglycerin	Preservative	QS
	Keltrol T	Xanthan Gum	Stabilizer	0,08
	Kelcogel CG HA	Gellan Gum	Stabilizer	0,1
	Inutec SL1	Glycerin, Inulin Lauryl Carbamate	Stabilizer	4
	EDETA BD	Disodium EDTA	Complexing agent	0,05
	B	Sabonal C1618 50/50	Cetearyl Alcohol	Stabilizer
Crodamol AB		C12-15 Alkyl Benzoate	Emolient	8
Crodamol IPP		Isopropyl Palmitate	Emolient	2
Miglyol 812		Caprylic/Capric Triglyceride	Emolient	4
Crodamol CP		Cetyl Palmitate	Emolient	1
Eumulgin B2		Ceteareth-20	Emulffier	0,5
Eusolex OCR		Octocrylene	Sunscreen UVB	4
Parsol SLX		Polysilicone-15	Sunscreen UVB	4
Parsol MCX		Ethylhexyl Methoxycinnamate	Sunscreen UVB	8
Parsol 1789		Butyl Methoxydibenzoylmethane	Sunscreen UVA	2
C	Perfume	Parfum	Perfume	QS
	Sodium Hydroxide	-	pH adjuster	QS

INUTEC®SL1 - Applications

Inutec®SL1 is suitable and useful for all cosmetic emulsions. More particularly for:

- Baby care
- Dermato-cosmetic
- Eye products
- Sensitive skin
- Sun care
- Hair waxes
- Conditioner

INUTEC®SL1 - Technical data

INCI / CTFA	Glycerin, Inulin Lauryl Carbamate
CTFA	Glycerin, Inulin Lauryl Carbamate
ASPECT	Yellow orange paste
SMELL	Characteristic

