

IMWITOR[®] liteMULS

THE VERSATILE EMULSIFIER
BLEND FOR LIQUID EMULSIONS



OLEOCHEMICALS

PERSONAL CARE

IOI Oleo GmbH

IMWITOR® liteMULS

IMWITOR® liteMULS – The Milky Way

IMWITOR® liteMULS is a 100% natural emulsifier for all kinds of liquid emulsions. The blend is liquid at room temperature and is easily manageable for cold production process. IMWITOR® liteMULS readily forms totally liquid emulsions at room temperature with low shear rates. At low dosage with typical use concentrations like 1–3%, IMWITOR® liteMULS forms a liquid milk for many application purposes. These products can be used as sprayable hair conditioners or refreshing milks for body and face care. With a light and sprayable After Sun Milk a refreshing sensation is perceived on the skin after a day in the sun. A great versatility regarding the oil phase offers maximum flexibility to the formulator.

Characteristics: INCI: Glyceryl Citrate/Lactate/Linoleate/Oleate, Polyglyceryl-4 Cocoate, Polyglyceryl-3 Caprate, Glyceryl Caprylate

- 100% natural
- Appearance: pale yellow highly viscous liquid
- Recommended dosage: 1–7%
- Forms O/W emulsions

Properties:

- Cold processable
- No viscosity build-up
- Ideal for wet wipes solutions
- For all kind of sprayable natural cosmetic formulations

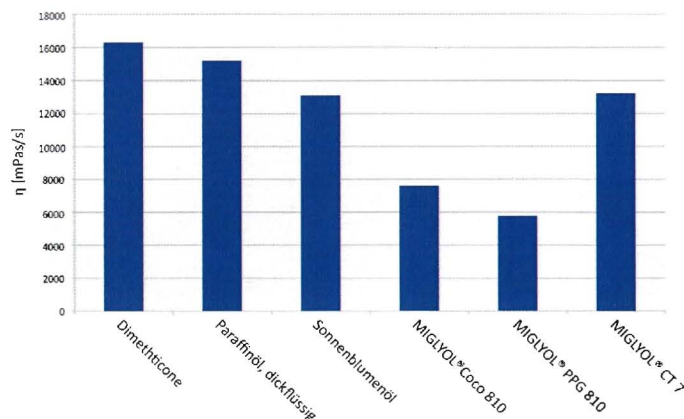
Formulation with different oils

Stability tests were carried out in order to test limits for using different oil phases. (polar and non-polar emollients, wax ester, vegetable oil and paraffinum liquidum). All produce stable emulsions with fine and homogenous particle distribution as seen in the following microscopic pictures. For all tests the same oil dosage (20%) was used.

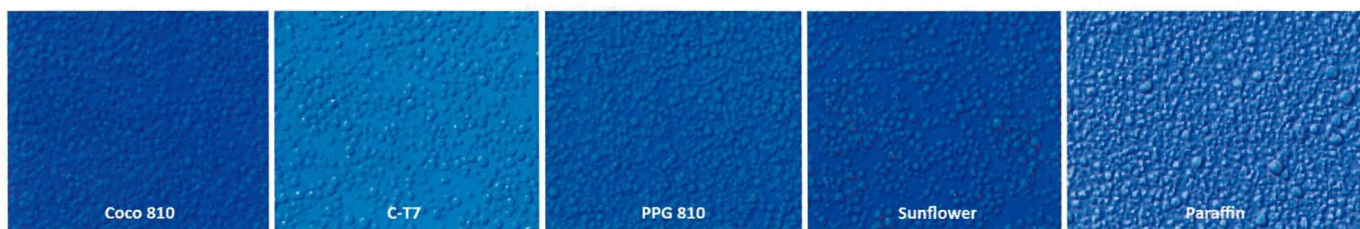
Basic O/W Formulation for stability tests

Ingredient	INCI	Dosage (%)
IMWITOR® liteMuls	See characteristics	3,0
MIGLYOL® 812 N (F)	Caprylic/Capric Triglyceride	20,0
NAFOL® 1618 HP	Cetearyl Alcohol	1,0
IMWITOR® 900 K	Glyceryl Stearate	2,0
Keltrol® F	Xanthan Gum	0,3
Phenonip XP	Phenoxyethanol, Methylparaben, Ethylparaben, Propylparaben	0,7
Wasser	Aqua	ad 100

Viscosity after 7 days @ 20°C



The viscosity with all different emollients used is – as intended – very low (6.000–16.000 mPas). The viscosity is not related to the emollient's viscosity. It is higher with triglycerides like the sunflower oil used or the very light and low viscous MIGLYOL® T-C7. Light wax ester (Coco 810) or glycol ester (PPG 810) show the lowest viscosity. However, all formulations are liquid milks and stable in regular stability testing.



Picture above: Microscopic Images of basic O/W emulsions with 20% pure oil phase each with the following emollients used (from left to right): MIGLYOL® Coco 810, MIGLYOL® C-T7, MIGLYOL® PPG 810, Sunflower Oil, Paraffin (Magnification 400x, color due to filters used in microscopic imaging).

Formulating with oil phases ranging from 5–40%

Formulations with different concentrations of emollients were produced and tested for stability. As an oil phase MIGLYOL® 812 N (F) (INCI: Caprylic/Capric Triglyceride) was chosen. This standard emollient is used in many cosmetic products in the world as part of the oil phase and does not show significant functional influence on the formulation. The dosage of the oil tested in the formulation was in a range between 5% and 40%. All formulations were stable and underline the versatile use of IMWITOR® liteMULS.

Applications with IMWITOR® liteMULS

Self-emulsifying Natural Bath Oil

A water free bath oil is usually not miscible with water (left picture) and will separate from the water immediately. With ethoxylated surfactants it is possible to formulate self-emulsifying bath oils. However, natural surfactants are usually not strong enough to instantly form a milk in the bath tub. The 100% natural IMWITOR® liteMULS can be mixed with a great variety of oils (vegetable or ester oils) to be used as a self-emulsifying bath oil. When poured into water, it instantly converts into a milk and shows an attractive blooming effect by forming clouds in the water (picture on the right). This effect is nothing but an emulsification without shear force.



Oil poured into water



Oil with 10% IMWITOR®
liteMULS poured into water

In-Situ After Shower Body Lotion (No. 729)

Following the successful concept of In-Shower products, IOI Oleo cosmetic lab developed an „In-Situ After Shower Body Lotion“ used directly after the shower before drying. The oil forms a rich emulsion directly on the skin using water present on the wet skin.

Tradename	INCI	Dosage (%)
MIGLYOL® 829	Caprylic/Capric/Succinic Triglyceride	4,0
MIGLYOL® Coco 810	Coco Caprylate/Caprate	35,0
MIGLYOL® PPG 810	Propylene Glycol Dicaprylate/Dicaprate	24,0
Tegosoft® HP	Isohexyl Palmitate	5,0
WITARIX® MCT 60/40	Caprylic/Capric Triglyceride	22,0
SOFTIGEN®OIL Baobab Organic	Adansonia Digita Seed Oil	2,0
SOFTIGEN®OIL Barbary Fig Organic	Opuntia Ficus-Indica Seed Oil	0,5
SOFTIGEN®OIL Argan Organic	Argania Spinosa Kernel Oil	1,0
Tocopherol	Tocopherol	0,5
IMWITOR® liteMULS	See characteristics	5,0
IMWITOR® PG3 C10	Polyglyceryl-3 Caprate	1,0
Fragrance	Polyglyceryl-3 Caprate	q.s.

Wet Wipes Concentrate with IMWITOR® liteMULS – Easy as 1, 2, 3...



- 1 Mix IMWITOR® liteMULS with Glycerin, oils and a small amount of water to prepare a microemulsion.



- 2 Mix the microemulsion with water under high speed stirring or homogenization to prepare the concentrate.



- 3 Dilute concentrate to wished concentration and apply the wet wipes solution onto wipes in normal process.

Simple and flexible production of wet wipes

Formulation of wet wipe concentrate (No. 723)

Tradename	INCI	Dosage (%)
IMWITOR® liteMULS	See characteristics	6,0
Glycerin 99,5	Glycerin	20,0
MIGLYOL® PPG 810	Propylene Glycol Dicaprylate/Dicaprate	4,0
MIGLYOL® 829	Caprylic/Capric/Succinic Triglyceride	6,5
SOFTISAN® conditionHAIR	PCA Glyceryl Oleate	5,0
Aqua dem.	Aqua	Up to 100
Phenonip® XB	Phenoxyethanol, Methylparaben, Ethylparaben, Propylparaben	1,0

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