

# IMWITOR<sup>®</sup> liteMULS

THE VERSATILE EMULSIFIER  
BLEND FOR LIQUID EMULSIONS



**IOI OLEOCHEMICAL**

IOI Oleo GmbH  
PERSONAL CARE

# 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 processes. 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. Great versatility regarding the oil phase offers maximum flexibility to the formulator.

### Characteristics



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

- 100% natural
- Appearance: pale yellow highly viscous liquid
- Recommended dosage: 1–8%
- Forms O/W emulsions

### Properties

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

## Formulating with oil phases ranging from 5–40%

Formulations with different concentrations of emollients were produced and tested for stability. As an oil phase, WITARIX® MCT 60/40 (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.

## Formulation with different oils

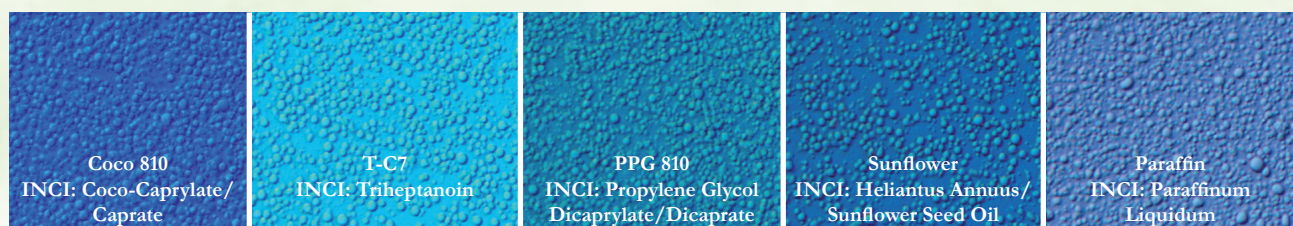
Stability tests were carried out in order to test limits for using different oil phases (polar and non-polar emollients, wax ester, vegetable oil and paraffinum liquidum). All of them produce stable emulsions with fine and homogeneous particle distribution as seen in the following microscopic pictures.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

### Basic O/W formulation for stability tests

Tradename	INCI	%
IMWITOR® liteMULS	See characteristics	3.0
Oil Phase	–	20.0
NAFOL® 1618 HP	Cetearyl Alcohol	1.0
IMWITOR® 900 K	Glyceril Stearate	2.0
Keltrol® F	Xanthan Gum	0.3
Phenonip® XP	Phenoxyethanol, Methylparaben, Ethylparaben, Propylparaben	0.7
Aqua	Aqua	ad 100.0

Pictures below:

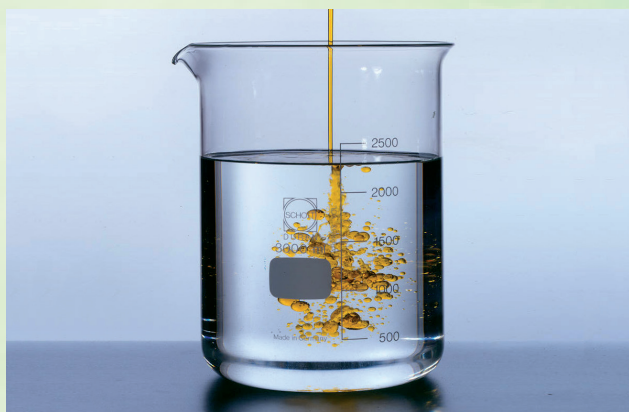
microscopic images of basic O/W emulsions with 20% pure oil phase each with the following emollients used (from left to right): MIGLYOL® Coco 810, MIGLYOL® T-C7, MIGLYOL® PPG 810, Sunflower Oil, Paraffin (magnification 400 x, color due to filters used in microscopic imaging). Note the same, homogeneous and fine particle distribution in all samples.



# 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

## Natural Blooming Bath Oil (No. 730)

Tradename	INCI	%
IMWITOR® liteMULS	See characteristics	8.0
IMWITOR® PG3 C10	Polyglyceryl-3 Caprate	3.3
SOFTISAN® GC8	Glyceryl Caprylate	4.0
MIGLYOL® Coco 810	Coco Caprylate/Caprate	37.0
Sunflower Oil	Heliantus Annuus/ Sunflower Seed Oil	47.0
Tocopherol	Tocopherol	q.s.
Fragrance	Parfum (EU)/Fragrance (US)	q.s.
Aqua	Aqua	0.7



# Wet wipes concentrate with IMWITOR® liteMULS – easy as 1, 2, 3...



1 Mix IMWITOR® liteMULS with glycerin (if needed), oils and a small amount of water to prepare a microemulsion.

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

3 Dilute the concentrate to the desired 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	%
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	ad to 100.0
Phenonip® XB	Phenoxyethanol, Methylparaben, Ethylparaben, Propylparaben	1.0

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