



ALKEST® LV 1400

Green Solvent

Green cleaning chemicals refer to those chemicals which are made from environmental-friendly ingredients and are **safe for human health and the environment**. They are made from a renewable resource, and with some exceptions, generally do not contain synthetics.

Green chemical-based formulations are already presented in the market. The main issue with these chemicals is that though they can clean their performance in comparison with the industrial cleaning chemicals is not very effective. Thus, the market for these products is still very small and will take a long time to grow and compete with that of the industrial cleaning chemicals.

ALKEST® LV 1400 is a **green solvent** that changes the previously mentioned perceptions. It is based on a **100% natural** derived raw material, **readily biodegradable**, and promotes high efficiency. Its lipophilic nature allows a better interaction with oily soil leading to a high performance in cleaning and degreasing, which is especially true for **I&I** and **household surface cleaning** applications.



Benefits



High cleaning performance



Readily biodegradable



Renewable origin



VOC exempt



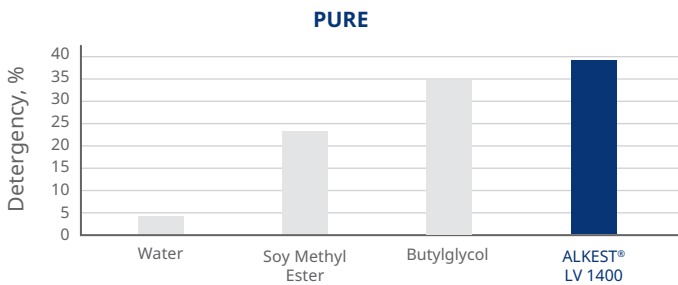
Non-flammable

Applications

- I&I and household cleaners
- Concentrated cleaners
- Degreasers

- All purpose, kitchen and bathroom cleaners
- Microemulsion cleaners
- Waterless cleaners

Solvents Cleaning Assesment



Soil: Stearic acid + Oleic acid + Carbon black | Surface: PVC tiles | Test method: Gardner Scrub | Formulation: 100% solvent

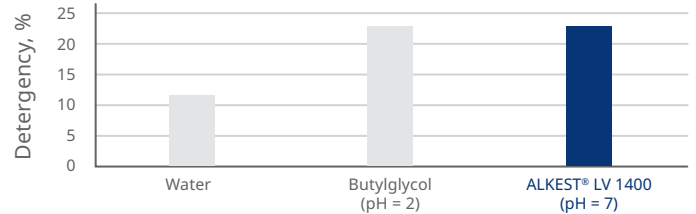
Neutral pH cleaning formulations are **safer** for people, the environment and surfaces when compared to acidic or alkaline cleaners. **Neutral pH** presents a lower potential for environmental harm and inhalation, oral and dermal toxicity.

ALKEST® LV 1400 allows **neutral pH formulations** (the use of acids and bases compromises **ALKEST® LV 1400**'s stability in aqueous environments). **Neutral pH cleaners** formulated with **ALKEST® LV 1400** do not demand protective gloves to minimize contact of the product with the skin thus enhancing **safer cleaning**.

Microemulsion Formulations Chassis

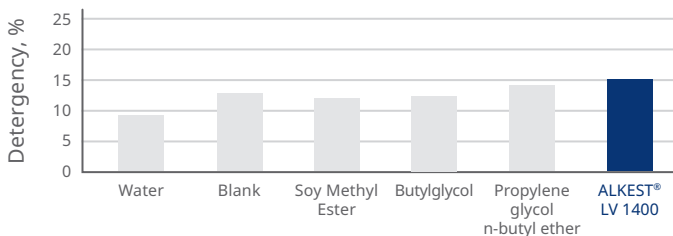
Ingredients	Actives wt. %	
	Blank	Microemulsion
Water	65	60
C9-C11 Alcohol 6 EO	25	25
C9-C11 Alcohol 8 EO	5	5
Sodium Xylene Sulfonate	2.5	2.5
Propyleneglycol	2.5	2.5
Solvent	-	5
Total	100	100

Microemulsion Formulation, Neutral Ph vs. Acid Ph



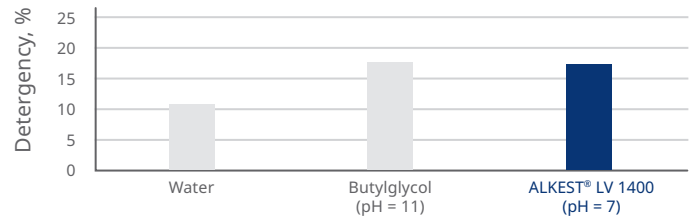
Soil: Calcium stearate + Lanolin + Lard + Carbon black | Surface: PVC tiles | Test method: Gardner Scrub | Dilution: 50% Cleaner in 50% Water | ALKEST® LV 1400 @ pH 7 / Butylglycol @ pH 2

Microemulsion Formulation



Soil: Stearic Acid + Vegetable Oil + Carbon black | Surface: PVC tiles | Test method: Gardner Scrub | Dilution: 50% Cleaner in 50% Water | pH = 7

Microemulsion Formulation, Neutral Ph vs. Alkaline Ph



Soil: Stearic Acid + Vegetable Oil + Carbon black | Surface: PVC tiles | Test method: Gardner Scrub | Dilution: 50% Cleaner in 50% Water | ALKEST® LV 1400 @ pH 7 / Butylglycol @ pH 11



DISCLAIMER. This information is provided in good faith, based on Oxiteno's current knowledge of the subject and is purely indicative. No information, including suggestions for using the products, should preclude experimental testing and verification, which are essential to ensuring the suitability of the products for each specific application. Consult the contact from your region or country regarding the availability of each product. All users must also respect local laws and obtain all the necessary permits. When handling the product, consult the safety data sheet. If you have any questions or additional needs, please contact Indorama Ventures through our customer service channels. MARCH/25.