

# Solubility Screen

Ultraviolet Light Absorbers

## Solvents

- MPDiol® Glycol

## Tested

- Propylene glycol USP
- Dipropylene glycol fragrance grade
- Tripropylene Glycol
- 1,3 Butylene Glycol
- Propylene Carbonate Pc
- Glycol Ether PnB Solvent
- Glycol Ether PM Solvent
- Glycol Ether DPM Solvent
- Glycol Ether TPM
- Glycol Ether PMA Solvent

## UV Light

- Octyl dimethyl PABA

## Absorbers

- Octyl salicylate

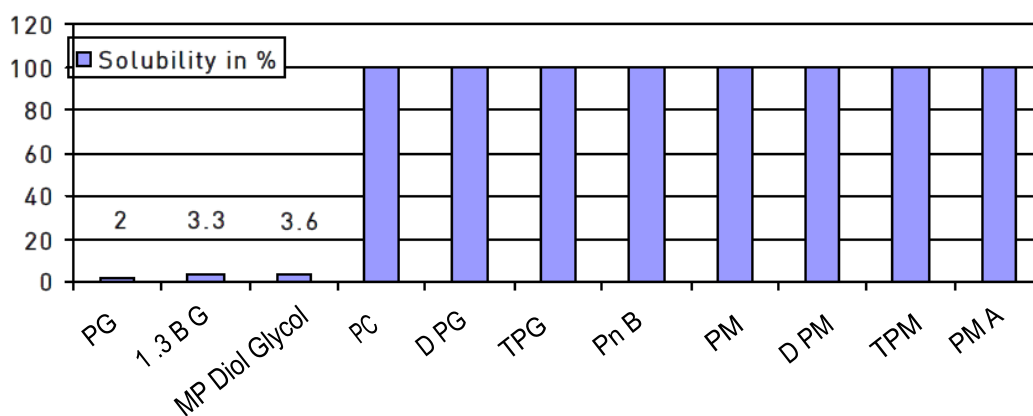
## Tested

- Octocrylene
- Octyl methoxycinnamate
- 4-Methyl benzylidene camphor
- Phenyl benzimidazole sulfonic acid
- Benzophenone-3
- Avobenzone

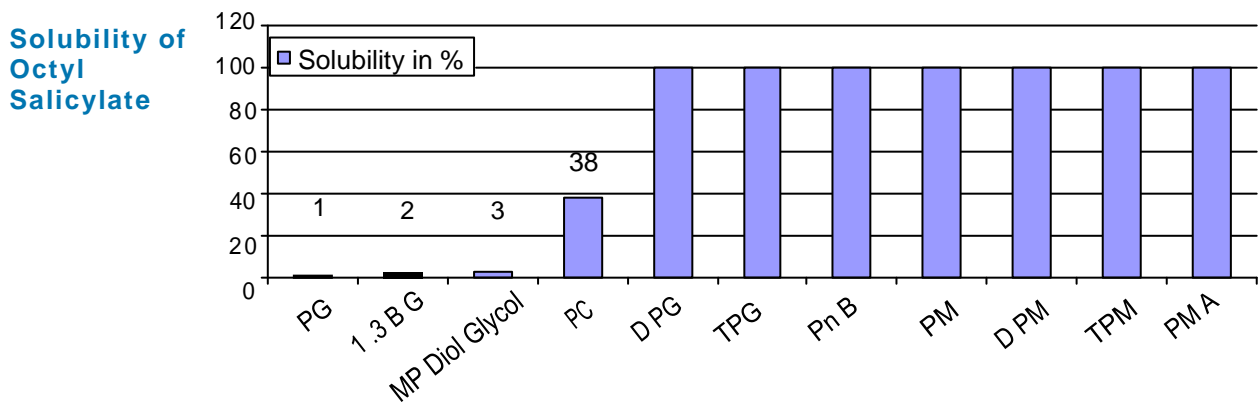
**Test Method** The screen was conducted using several ultraviolet light absorbers commonly used by cosmetic manufacturers. UV light absorber of 0.5g was weighed in 50g of solvent to be tested. The blend was stirred for 15 min. then stored 2 hours at 60°C, followed by 24 hours at 25°C. At this point if the solution was clear, another 0.5g was added and the storage cycle repeated. The solubility limit was reached when the solution became hazy or crystallization occurred.

## Solubility of Octyl Dimethyl Paba

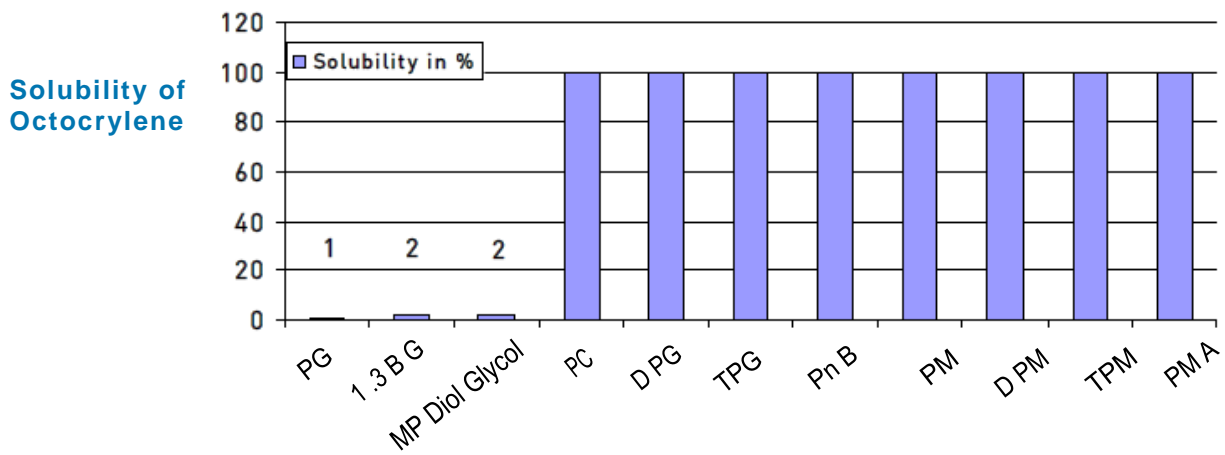
### OCTYL DIMETHYL PABA



### OCTYL SALICYLATE

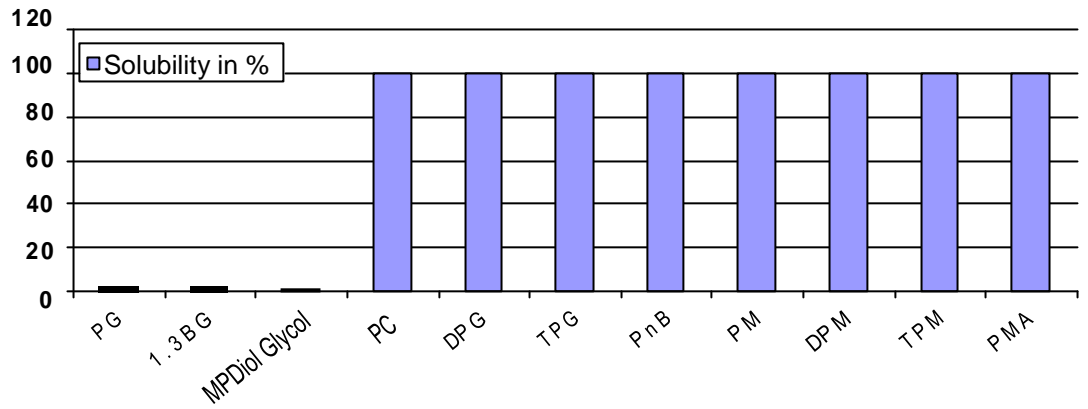


### OCTOCRYLENE



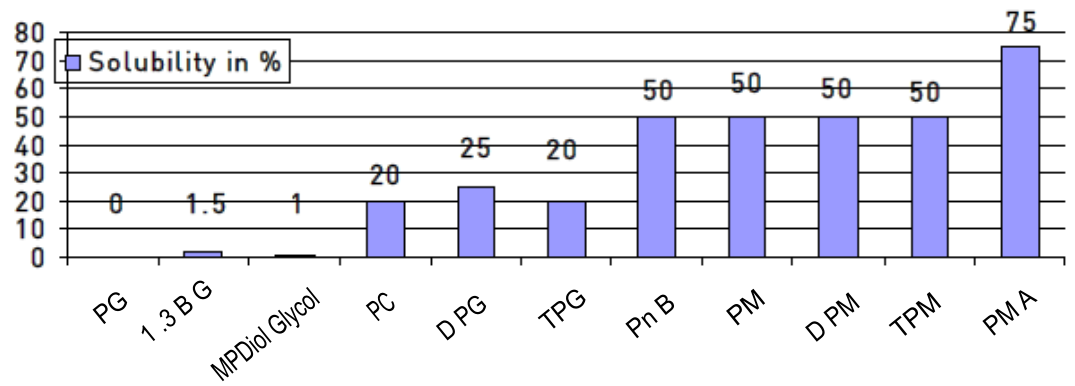
### OCTYL METHOXYCINNAMATE

Solubility of Octyl Methooxycinnamate



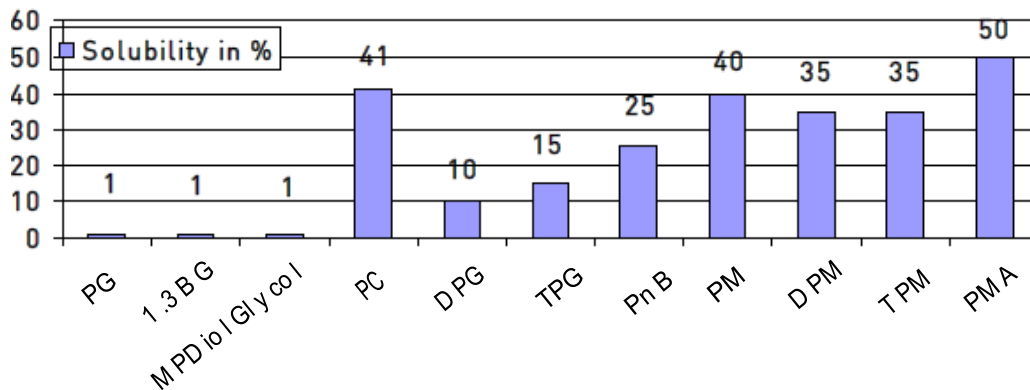
### 4-METHYL BENZYLIDENE CAMPHOR

Solubility of 4-Methyl Benzylidene Camphor



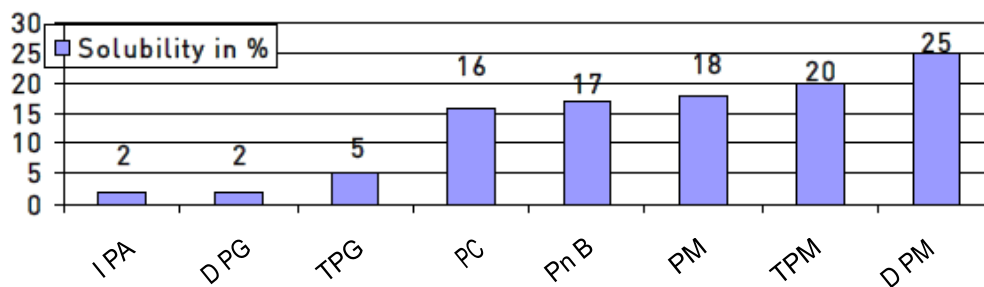
### BENZOPHENONE-3

#### Solubility of Benzophenone-3



### AVOBENZONE

#### Solubility of Avobenzene



Before using a product sold by a company of the LyondellBasell family of companies, users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally.  
**SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT.**

This product(s) may not be used in:

- (i) any U.S. FDA Class I, Health Canada Class I, and/or European Union Class I medical devices, without prior notification to Seller for each specific product and application; or
- (ii) the manufacture of any of the following, without prior written approval by Seller for each specific product and application: U.S. FDA Class II Medical Devices; Health Canada Class II or Class III Medical Devices; European Union Class II Medical Devices; film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned medical devices; packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration; tobacco related products and applications, electronic cigarettes and similar devices, and pressure pipe or fittings that are considered a part or component of a nuclear reactor. Additionally, the product(s) may not be used in: (i) U.S. FDA Class III Medical Devices; Health Canada Class IV Medical Devices; European Class III Medical Devices; (ii) applications involving permanent implantation into the body; (iii) life-sustaining medical applications; and (iv) lead, asbestos or MTBE related applications. All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

Users should review the applicable Safety Data Sheet before handling the product.

Alkylate, Duopac, Duoprime, Filmex, MPDIOL, Polymeg, SAA-100, SAA-101, TBAC, Tebol, T-Hydro, and Tufflo are trademarks owned or used by the LyondellBasell family of companies.

Duopac, Duoprime, Filmex, MPDIOL, Polymeg, Tebol, T-Hydro and Tufflo are registered in the U.S. Patent and Trademark Office.

Houston, Texas, USA | Tel: +1 713 309 7200 or toll-free within USA +1 888 777 0232

Rotterdam, The Netherlands | Tel: +31 10 275 5500

Hong Kong, China | Tel: +852 2882 2668