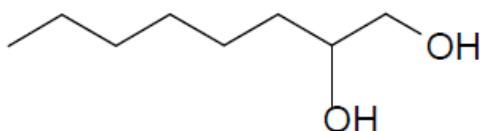


Technical Data Sheet

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Octiol

Chemical structure

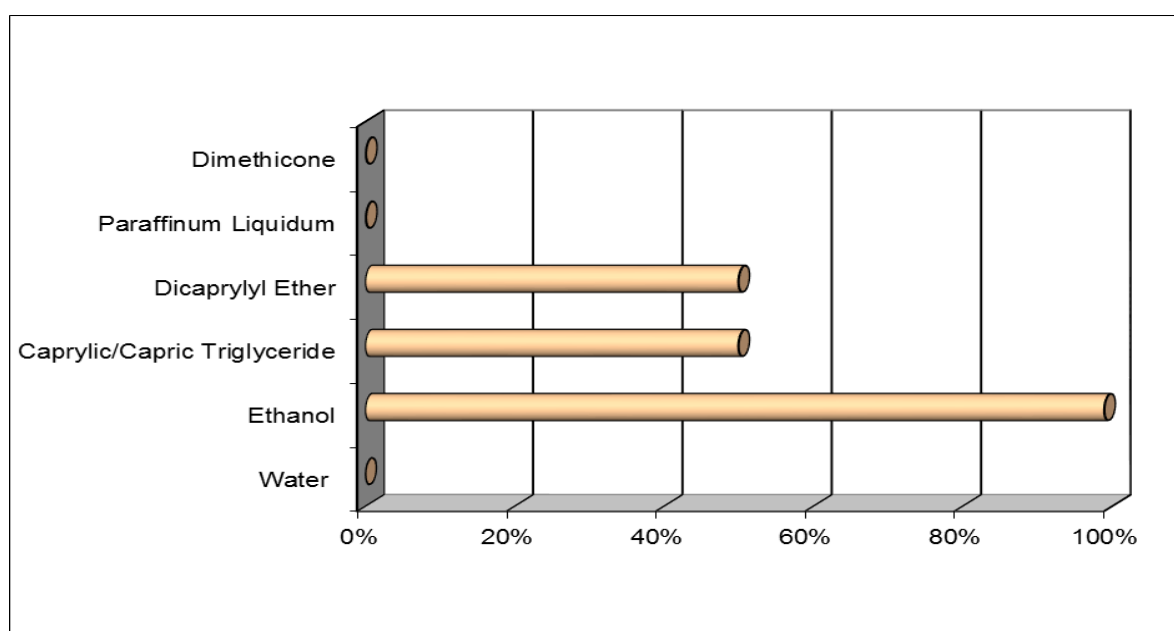


Specifications and characteristics

INCI	Caprylyl Glycol
Chemical name	1,2-octanediol
CAS Reg. No*	[1117-86-8]
Molecular Weight*	146.23 g/mol
Appearance	<ul style="list-style-type: none">Clear colourless liquid (at > 33 °C, or as supercooled melt at < 30 °C)White low waxy solid (at temperatures < 30 °C)
Purity (GC)	Min. 98.0 area-%
Water content	Max. 0.3 wt.-%
Odour	Low characteristic odour
Melting range*	30-33 °C
Boiling point*	131 °C (10 mm Hg)
Density at 20°C*	0.914 g/cm ³
Log Pow	2.1 ¹
Recommended pH of use	Unlimited
Recommended use level	0.1 – 1.5%
Regulatory	Globally approved

*Indicative data

Solubility in cosmetic solvents at 20 °C



The above information is accurate to the best of our knowledge. Customers are advised to make their own studies on the usefulness of any ingredient for a particular application. Recommended usage information is only provided as indication, and should not be considered as recommendations to use Minasolve SAS's products in violation of any laws, patents, or official regulations dealing with manufacture, composition, local procedures, product design, or end usage.

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Octiol

Cosmetic applications

Octiol is a hair and skin **conditioning** agent² with **emollient and moisturizing**³ properties. Through its hydrophilic moieties, it helps retain water in the upper layers of the skin. Thanks to its fatty alkyl chain, it contributes to a good skin feel.

Octiol has **surface active** properties, which can be beneficial for the **solubilisation of actives**, while reducing the amount of the main solubiliser. However, the optimum amount of Octiol should be checked, in order not to destabilize the cosmetic product⁴.

Octiol presents excellent pH-independent **antimicrobial** properties, which are beneficial for the preservation of cosmetics and toiletries, as sole preservative or as a preservative booster.

Octiol is recommended for skin care, toiletries and make-up applications.

Formulation guidelines

Octiol is typically a waxy solid at ambient temperature. It can be easily molten prior to use, by heating up to ≥ 40 °C.

Since **Octiol** has surface active properties, it can interfere with emulsifiers and detergents in emulsions and cleansing products. This may translate into a decrease or an increase in viscosity, depending on the surfactant system and the diol concentration.

Octiol is slightly soluble in water (7,5 g/L at 20 °C)¹. It can be introduced as a liquid into the water phase of an emulsion, and it will not be impacted by any heating process. Introduction post-emulsification is also possible. In any case, Octiol will migrate to the oil/water interface. The impact of **Octiol** on the viscosity and the stability of the emulsion, for a given process, has to be checked individually.

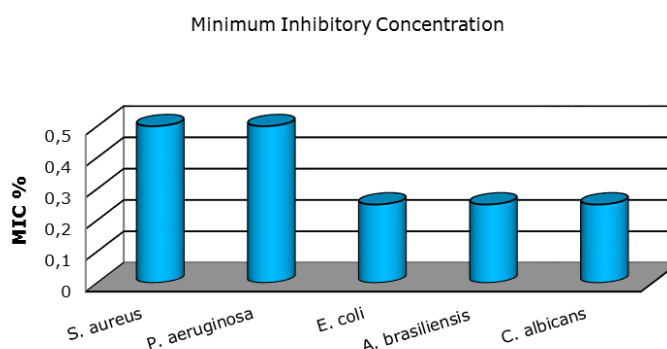
Performances

Antimicrobial activity^{5,6}

Due to its amphiphilic properties, and its optimum chain length comprising eight carbon atoms, **Octiol** is able to specifically disrupt the cell membranes of microorganisms. This leads to cell lysis and microbe death. The development of an antimicrobial resistance, by genetic adaptation, is unlikely to happen for such a mode of action.

Octiol has broad spectrum antimicrobial activity against bacteria, yeasts and molds, as demonstrated by minimum inhibitory concentrations (MIC) and challenge test data.

For increased antimicrobial efficacy, **Octiol** can be combined with conventional or alternative preservatives, especially in products where its activity against fungi is limited.



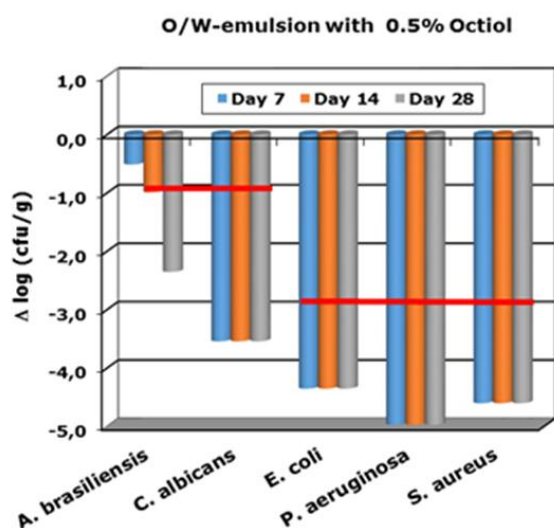
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Octiol

Challenge test results according to ISO 11930, O/W emulsion at pH 5.5

Phase	Ingredient	INCI name	%
A	Water	Aqua	ad 100
	Xanthan Gum OC	Xanthan Gum	0.5
B	Emulgade PL 68/50	Cetearyl Glucoside (and) Cetearyl Alcohol	5.0
	Lipex Sheasoft	Butyrospermum Parkii (Shea) Butter	3.0
	Lipovol J	Buxus Chinensis (Jojoba) Oil	3.0
	Lipovol Apricot	Prunus Armeniaca (Apricot) Kernel Oil	3.0
	Octiol	Caprylyl Glycol	0.5
C	Tocopherol	Tocopherol	0.1
D	Citric Acid (50 %)	Aqua (and) Citric Acid	pH 5.5



— requirements of DIN EN ISO 11930 for log-reduction after 28 days

As standalone alternative preservative, **Octiol** is able to reduce the microbial contamination in the O/W-emulsion, as requested by the norm ISO 11930, and even beyond.

Bibliography

¹ <https://www.echa.europa.eu/web/guest/registration-dossier/-/registered-dossier/14120>

² http://www.cir-safety.org/sites/default/files/115_draft_capryl.pdf

³ Römpf Chemie Lexikon, 9th Edition, **1990**, 1616f.

⁴ Thiemann A. et al., "Wetting agents: friends or enemies of solubilizers", *SOFW-Journal* **2014**, 140 (11), 46-51.

⁵ Pillai R. et al., "1,2-alkanediols for cosmetic preservation", *Cosmetics & Toiletries Magazine* **2008**, 123 (10), 53-61.

⁶ Schnittger S. et al., "Use of alkanediols in personal care formulations – closer look at antimicrobial activity", *Proceedings of the SCC Annual Scientific Meeting & Technology Showcase*, New York, **2006**.