

**A leen<sup>®</sup>5**  
FROM BIOMASS TO COSMETIC

## Biosourced odourless Pentylene Glycol

- ✓ Anti-microbial
- ✓ Solubilizer
- ✓ Emollient
- ✓ Extraction solvent
- ✓ Moisturizer



### Specifications and Characteristics

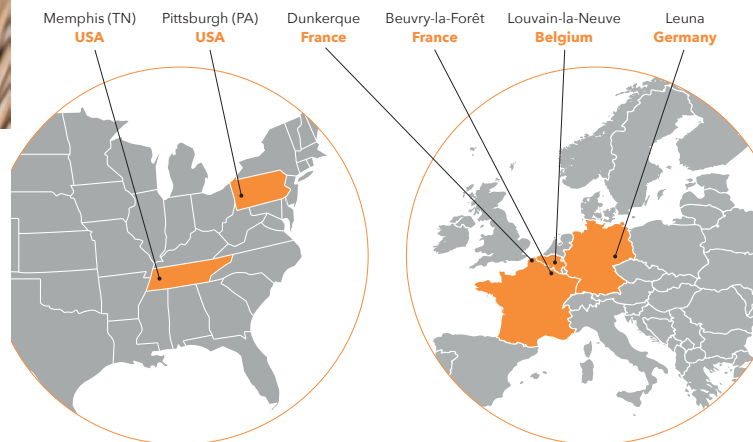
INCI	Pentylene Glycol
CAS REG. N°	5343-92-0
APPEARANCE	Colourless liquid
ODOUR	Odourless
PURITY	Min. 99.0 %
SOLUBILITY	Hydrophilic, readily soluble in water and alcohol
RECOMMENDED PH OF USE	3.0 ▶ 10.0
RECOMMENDED USE LEVEL	0.5 ▶ 5.0 %
REGULATORY STATUS	Globally approved
ORIGIN	<b>derived-natural, 100 % renewable carbon</b>
NATURAL ORIGIN INDEX	<b>1 (ISO 16128)</b>
CHEMICAL STRUCTURE	<chem>CCCC(O)CO</chem>

## MINASOLVE<sup>®</sup> is an affiliate of MINAFIN<sup>®</sup> Group

Created in 2004, **The MINAFIN<sup>®</sup> Group**, specializes in fine chemistry for the life sciences and high tech industries. Activities include industrial subcontracting, development of chemical syntheses and industrial scale-up of custom-made processes as well as proprietary products with high added value for the pharmaceutical, cosmetics, agriculture and high-tech industries. Strong synergies exist between all business units: MINASOLVE, MINAKEM, MINAGRO, PENNAKEM, PRESSURE CHEMICALS, MINASCENT and EcoXtract.

**Serving market leaders as well as emerging players** we support our customers' efforts to improve the quality of life in the global community by:

- ▶ Improving our chemistry and operational excellence today
- ▶ Creating and innovating for tomorrow
- ▶ Driving our enterprises together to **go beyond expectations**



**243**  
M€ SALES

**900**  
EMPLOYEES

**91**  
SCIENTISTS

**6**  
PRODUCTION SITES

**MINAFIN<sup>®</sup>**  
GROUP

2021.09. V6.1

# Minasolve<sup>™</sup> Solutions to Protect Your Formulations with A leen<sup>®</sup>5

## Biosourced odourless Pentylene Glycol

- ✓ E-Leen<sup>®</sup> Green A
- ✓ E-Leen<sup>®</sup> Green B
- ✓ E-Leen<sup>®</sup> Green C
- ✓ E-Leen<sup>®</sup> Green OR
- ✓ EasySafe Green A
- ✓ EasySafe Hexam+

**MINASOLVE<sup>®</sup>**  
BIO-INGREDIENTS FOR YOUR APPLICATIONS

**green  
solving  
attitude.**

WWW.MINASOLVE.COM

**Minasolve proposes an innovative range of ready to use solutions based on A-Leen 5. All ingredients have broad-spectrum antimicrobial and long-lasting skin humectant properties.**

Bio-based chemistry is penetrating all market segments and is promoted more and more to consumers of final products. Cosmetic and beauty care are industries where this trend is strongly growing and provides challenges to the key players to develop new formulations in line with consumer demands. New formulations mean new ingredients with a stronger sustainable approach for the production of the raw material and the final products. **Minasolve is helping in such achievement by proposing bio-ingredients developed under green chemistry principles** to cope with market demands

and customer focus. **One of the key ingredients** developed for this market segment is **A-Leen 5** which has been developed and produced with a proprietary process established in by Minasolve's sister company Pennakem, specialized in green chemistry. This bio-based ingredient has now proven its versatility in cosmetic formulations and brings multiple benefits to the final products.

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**Specifications and Characteristics**

	<b>EasySafe Green A</b>	<b>E-Leen Green A</b>	<b>E-Leen Green B</b>	<b>E-Leen Green C</b>	<b>E-Leen Green OR</b>	<b>EasySafe Hexam+</b>
<b>INCI</b>	Pentylene Glycol, Phenylpropanol	Pentylene Glycol, Phenylpropanol	Pentylene Glycol, Aqua, Sodium Benzoate, Benzoic Acid	Pentylene Glycol, Glyceryl Caprylate/ Caprate	Pentylene Glycol, Glycerin, Citrus Aurantium Amara (Bitter Orange) Fruit Extract, Citrus Reticulata (Tangerine) Fruit Extract, Citrus Aurantium Sinensis (Orange) Peel Extract, Ascorbic Acid, Citric Acid, Lactic Acid	Pentylene Glycol, Water, Hexamidine Diisethionate
<b>pH range of activity</b>	unlimited	unlimited	3 ▶ 6	4 ▶ 7	3 ▶ 6.5	3.5 ▶ 6
<b>Water solubility</b>	soluble at ≤ 3%	soluble at ≤ 3%	soluble	dispersible	soluble	soluble
<b>ECOCERT/COSMOS</b>	no	approved	approved	approved	approved	no
<b>Listed preservative free</b>	yes	yes	no	yes	yes	no
<b>Natural origin index (ISO 16128)</b>	0.69	1	0.88	1	1	0.95
<b>Odor</b>	faint, aromatic	faint, aromatic	odorless or faint	odorless or faint	odorless or faint	odorless or faint
<b>Microbicide effect</b>	yeast/mold/bacteria	yeast/mold/bacteria	yeast/mold/bacteria	yeast/ (mold) /bacteria	yeast/ (mold) /bacteria	yeast/mold/bacteria
<b>Recommended use level</b>	1.0 ▶ 3.0%	1.0 ▶ 3.0%	1.0 ▶ 3.0% (max 5%)	1.0 ▶ 3.0%	1.0 ▶ 3.0%	0.2 ▶ 2.0%

**Performance in microbial challenge tests**

pH / %	<b>EasySafe Green A</b> Phenylpropanol		<b>E-Leen Green A</b> Phenylpropanol (nature-derived)		<b>E-Leen Green B</b> Benzoic Acid/ Sodium Benzoate		<b>E-Leen Green C</b> Glyceryl Caprylate/ Caprate		<b>E-Leen Green OR</b> Citrus Extracts		<b>EasySafe Hexam+</b> Hexamidine Diisethionate		
	1,5%	2,0%	3,0%	2,0%	3,0%	2,0%	3,0%	2,0%	3,0%	2,0%	3,0%	1,0%	2,0%
4.5	A	A	A	A	A	A	A	A	A	A	A	A	A
5.5	A	A	A	A	A	A	A	A	A	A	A	A	A
6.0	A	A	A	A	B	A	A	A	A	A	A	A	A
6.5	A	A	A	A	⊖	⊖	A	A	A	A	A	⊖	⊖
7.0	A	A	A	A	⊖	⊖	B	⊖	⊖	⊖	⊖	⊖	⊖
8.0	A	A	A	A	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
4.5	B	A	A	A	A	A	B	B	⊖	⊖	B	B	B
5.5	A	A	A	A	A	A	B	B	⊖	⊖	⊖	⊖	A
7.0	A	A	A	A	⊖	⊖	B	B	⊖	⊖	⊖	⊖	⊖
8.0	A	A	A	A	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖

**A B** Challenge test result, fulfills criteria A/B of ISO 11930 **●** Likely to fulfill criteria A of ISO 11930 **⊖** Not suitable for this application

The given information is accurate to the best of our knowledge. Buyers are advised to make their own studies on the usefulness of any product for a particular application or purpose. Recommended usage information is only provided as indication, and should not be considered as recommendations to use the products in violation of any patents, intellectual property rights, laws, or regulations relating, but not limited to, manufacture, composition, product design or end usage.