

General information:

INCI Name	Polyurethane-48
Ingredient category	Film former
Chemical description	Water-based polyurethane polymer (anionic) including 1.5% antimicrobial additive
Appearance	Milky dispersion
Solid content	30.0±2.0
pH	7.0±1.5
Viscosity	<1000 mPa.s

Sustainability profile:

- **Biodegradability:** Reached a mean biodegradation rate of 64% within 28 days (OECD 301 ready biodegradability test*).
- **Microplastics status:** out of scope (2019 ECHA restriction proposal).

*Test performed on the polymer itself.

Applications:

- **Hair styling:** styling aerosol, pumpspray, lotion, cream, gel cream & aerosol mousse
- **Hair care:** hair treatment & leave-on conditioner

Technical benefits:

- Flexible hold
- Style retention
- Wash resistance
- Waterproofing
- Frizz control
- Heat protection
- Straightening

Others:

- Suitable for **vegan** products.
- Suitable for **cruelty-free** products.
- Suitable for **biodegradable** formulas.
- Marketable in China*.

*Newly filed cosmetic ingredient under monitoring period.

Recommendations/Formulating tips:

Use level

- 3-10% as supplied



Compatibility

- **pH:** Products with pH between 4.5-8.0 can be formulated; ideally, we recommend adjusting the pH to the 6.0-8.0 range.
- **Salt:** Supports only low level of electrolytes; we recommend the use of maximum 0.5% of sodium chloride.
- **Chelating agents:** Compatible with state-of-the-art chelating agents.
- **Ethanol:** Compatible with ethanol; forms translucent solutions.
- **Cationics:** Limited compatibility depending on charge density. We recommend adding an amphoteric polymer (e.g. polyquaternium-39) to increase the compatibility with cationic polymers.
- **Non-ionic polymers:** Compatible with non-ionic film formers such as PVP, VP/VA copolymer.
- **Anionic polymers:** Limited compatibility depending strongly on neutralization grade and charge density.
- **Propellants:** Compatible with DME; very limited compatibility with propane butane.

Process

- Add Baycusan® C 1008 at the end of the formulation process below 40 °C.
- We recommend homogenizing before addition of Baycusan® C 1008.
- We recommend adjusting the pH before the addition of Baycusan® C 1008. If necessary, pH could be adjusted with a diluted solution (at 10%) of either citric acid or sodium hydroxide after the addition of Baycusan® C 1008.

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Edition: 2022 · Printed in Germany



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