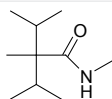


Specifications and Characteristics

FRESH'IN

INCI	Methyl Diisopropyl Propionamide
CAS REG. N°	51115-67-4
APPEARANCE	White solid
ODOUR	Fresh
PURITY	Min. 99.0 %
SOLUBILITY	Alcohol, 1,2-alkanediols, cosmetic esters and ethers like Dicaprylyl Ether, Caprylic/Capric Triglyceride
RECOMMENDED USE LEVEL	0.04 ▶ 1.5 % (max. 0.04% for leave-on body care applications)
REGULATORY STATUS	Globally approved
ORIGIN	Non-natural (petrochemical)

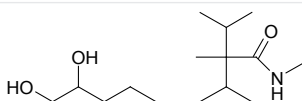
CHEMICAL STRUCTURE



FRESH'IN GREEN +

INCI	Pentylene Glycol (and) Methyl Diisopropyl Propionamide
CAS REG. N°	5343-92-0; 51115-67-4
APPEARANCE	Clear, colourless liquid
ODOUR	Fresh
SOLUBILITY	Water, Alcohol, 1,2-alkanediols, cosmetic esters and ethers like Dicaprylyl Ether, Caprylic/Capric Triglyceride
RECOMMENDED USE LEVEL	0.1 ▶ 2.5 % (max. 0.1 % for leave-on body care applications)
REGULATORY STATUS	Globally approved
ORIGIN	Derived-natural
NATURAL ORIGIN INDEX	0.55, Contains 43 % renewable carbon (ISO 16128)

CHEMICAL STRUCTURE

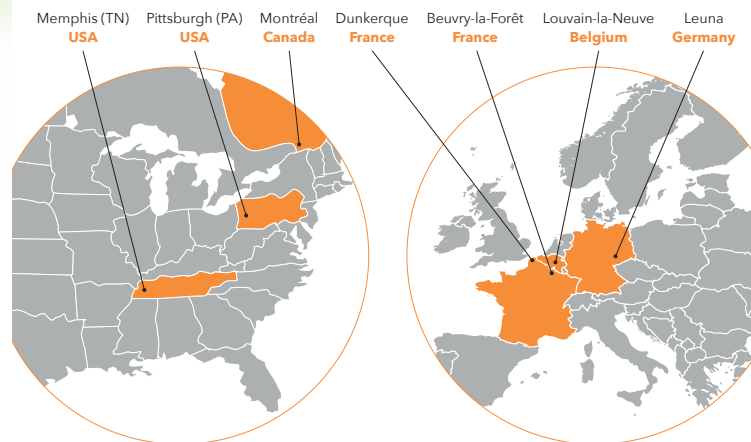


MINASOLVE® is an affiliate of MINAFIN® Group

Created in 2004, The Minafin® Group is an expert in Health Chemistry, Green Chemistry and Challenging Chemistry. 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, PENNAKEM, PRESSURE CHEMICAL and MINASCENT.

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**



300
M€ SALES



1050
EMPLOYEES



150
SCIENTISTS



7
PRODUCTION SITES

MINAFIN
GROUP

2023.12. V4.1

Cooling Agents

FRESH'IN

- ✓ **Safe alternative to Menthol**
- ✓ **Long-lasting cooling effect**

FRESH'IN GREEN+

- ✓ **Ready to use liquid**
- ✓ **Dispersible in water**



MINASOLVE
BIO-INGREDIENTS FOR YOUR APPLICATIONS

green solving attitude.

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Fresh'in and Fresh'in Green+ from Minasolve: SAFE COOLING AGENTS WITH LONG-LASTING EFFECT

Fresh'in and Fresh'in Green+ are powerful refreshing agents and safe alternatives to menthol.

For many years, menthol has been used as a popular physiological cooling agent. However, it has several drawbacks: It tends to crystallize and to sublime, has an odour that is difficult to mask, and is a listed fragrance allergen.

Fresh'in and Fresh'in Green+ avoids all major drawbacks of Menthol:

- ▶ They provide a **long-lasting cooling sensation**.
- ▶ **Fresh'in** is a **non-volatile** solid with a faint **fresh odour** and absent of any camphor notes.

Depending on the concentration and area of use, their cooling effect can range from a **subtle freshness** to a **powerful chilling sensation**.

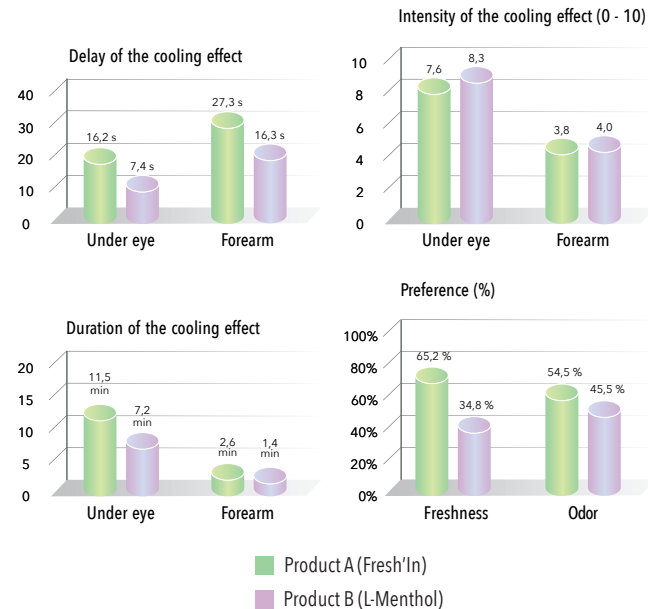
Fresh'in and Fresh'in Green+ are recommended for leave-on and rinse-off applications in skin care, oral care, toiletries, make-up, and perfumes.

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.

Performance

A comparative consumer test of **Fresh'in** vs. L-Menthol was carried out on a mixed population of 66 volunteers, aged 19 to 50. Both cooling agents were applied in a hydrogel at concentrations of 0.5 %. The following criteria were investigated:

- Delay of the cooling effect
- Intensity of the cooling effect
- Duration of the cooling affect
- Volunteers preference



- Two out of three consumers preferred the **cooling effect** of **Fresh'in** over that of Menthol.
- The volunteers confirmed a slightly **delayed cooling action** of **Fresh'in** and its **longer-lasting cooling effect**.

In summary, the panelists preferred the progressive, long-lasting, and pleasant cooling effect of **Fresh'in** over menthol.

Applications

Fresh'in is a powder and therefore needs to be solubilised. The solubilisation can be carried out in solvents like 1,2-alkanediols or lower alcohols before incorporation into the formulation. In the case of emulsions **Fresh'in** can also be melted or mixed with the lipophilic phase.

Fresh'in Green+ is a **ready-to-use** and **patented liquid solution** comprised of the **Fresh'in** powder dissolved in the nature-derived skin humectant A-Leen 5. The liquid **Fresh'in Green+** has the same refreshing properties as the solid **Fresh'in**.

- ▶ **Fresh'in Green+** **simplifies** the application of the cooling agent in cosmetic and personal care formulations.
- ▶ **Fresh'in Green+** can be used during **cold** and **hot** processing (max. 130 °C).

Fresh'in Green+ is suitable for emulsions, surfactant-based products and solutions. Nevertheless, for applications in pure water we recommend using max. 0.5 % of **Fresh'in Green+** in order to obtain a clear and stable solution.

