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TECHNICAL DATA SHEET

Product Name: Menthol Crystals

INCI name: Menthol

CAS: 89-78-1

Chemical classification: Alcohol

Functional category: Oral care agent, Denaturant, Flavor, Fragrance ingredient, Skin conditioning agent ~ Other

IUPAC name: rel-(1R,2S,5R)-5-Methyl-2-(1-methylethyl)cyclohexanol

Description: Menthol is an organic compound obtained from the oils of plants such as corn mint, peppermint, or other types of mint. In terms of physical properties, menthol is a waxy, crystalline substance that is white or transparent. Its intense mint aroma and characteristic refreshing effect on the skin make it highly valued in the cosmetic industry. When applied to the skin, it creates a cooling sensation, contributing to a soothing feeling and reduction in irritation. Menthol is used in a wide range of cosmetic products, including skin care products, lip balms, foot creams, and after-sun soothing preparations. Its properties provide immediate relief from itching, redness, or inflammation, while its ability to stimulate thermal receptors contributes to a sense of freshness. It is also often used in oral care products, such as toothpaste and mouthwash, where it provides a long-lasting feeling of cleanliness. Menthol is a popular ingredient in perfumes, as it imparts freshness and a refreshing scent. Thanks to its versatility, it is an important ingredient in many formulations that deliver an immediate refreshing and soothing effect on the skin. It is soluble in alcohol and oils. Melting point: 42-44°C (107-111°F). Purity 99.1%.

Mechanism of action: The main form of menthol found in nature is (–)-menthol, with the chemical configuration (1R,2S,5R). This designation indicates a specific spatial arrangement of atoms in the molecule and determines its stereochemistry, which directly affects its physical and chemical properties and its interaction with receptors in the body. Its stereochemistry directly influences its recognizable refreshing effect, as it optimally fits receptors in the skin and mucous membranes that respond to cold, such as TRPM8 receptors. For this reason, (–)-menthol has an exceptionally cooling and

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soothing effect characteristic of natural menthol.

Benefits:

- Provides an immediate cooling sensation on the skin.
- Soothes irritation and redness.
- Reduces the feeling of itching and tingling.
- Helps relieve muscle pain and discomfort.
- Relaxes and refreshes tired legs and feet.
- Contributes to reducing nasal congestion.
- Leaves a refreshing aroma and a sense of cleanliness.
- Stimulates skin circulation.
- Acts as an antiseptic in oral care products.
- Enhances the feeling of freshness in body care products.

Method of use: Menthol is used in various cosmetic products depending on the desired effect and formulation. In balms and gels for pain relief, the recommended concentration of menthol is usually between 1% and 5%, providing a strong cooling sensation and an analgesic effect. In foot creams or refreshing products, it is used in lower concentrations, from 0.2% to 2%, to provide a mild cooling effect without excessive skin irritation. In oral care products such as toothpaste and mouthwash, menthol is used in small concentrations, often below 0.1%, which is enough to provide a refreshing taste and aroma without irritating the mucous membranes. In lip care products like balms, concentrations range from 0.1% to 0.5%, since higher amounts may cause excessive dryness or discomfort. When creating perfumes and refreshing body sprays, menthol is added in very small amounts (under 0.1%) to achieve a refreshing effect without overpowering other fragrance notes. It must always be carefully dosed, as high concentrations can cause skin irritation or an overly intense cooling effect, which may not be desirable in all formulations. Menthol is typically added in the cool phase of creams because it is soluble at lower temperatures, most often below 120°F (50°C). Higher temperatures can lead to menthol evaporation or a decrease in its intensity, so it should be added after the formulation cools to the recommended temperature. For external use only.

Natural or synthetic ingredient: Menthol can be either natural or synthetic, depending on the production method. Natural menthol is obtained from the essential oils of plants like peppermint or corn mint, in which menthol crystals are separated through

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a freezing and filtration process. On the other hand, synthetic menthol is produced by chemical synthesis, most often using turpentine as the base material. Although both forms have identical chemical structures and properties, natural menthol is often preferred in cosmetic products based on natural raw materials.

Animal testing: The substance has not been tested on animals

GMO: Not GMO

Vegan: Contains no animal-derived components