

TECHNICAL DATA SHEET

Product Name: Isododecane

Raw Material Name: Isododecane

INCI Name: Isododecane

CAS: 31807-55-3

Synonyms: Isododecane; 2,2,4,6,6-Pentamethylheptane; branched C12 isoparaffin

Chemical Classification: Branched aliphatic hydrocarbon; isoparaffin

Functional Category: Emollient; solvent; skin-conditioning agent

IUPAC Name: 2,2,4,6,6-Pentamethylheptane

Description: Isododecane is a lightweight, low-viscosity hydrocarbon most commonly used in cosmetic formulations as an emollient and solvent. Thanks to its very good spreadability, it gives products a light, almost weightless feel on the skin and contributes to rapid and even application without a pronounced greasy or sticky film. It is particularly valued in decorative cosmetic formulations, where it provides good slip, facilitates pigment spreading and contributes to a neater finish, as well as in skin- and hair-care products where a reduction in the heavy feel of the oil phase is desired. It is a colorless liquid and is practically insoluble in water, but combines very well with silicones, hydrocarbons, isoparaffins and other non-polar ingredients. It can partially replace heavier vegetable oils in formulations and contribute to a lighter and drier sensory profile of the product. COSMILE lists Isododecane as having emollient, solvent and fragrance functions.

Physicochemical Properties: Isododecane is a clear, colorless liquid of very low viscosity and pronounced lipophilicity. It is practically insoluble in water, while being completely soluble or highly miscible with silicones, hydrocarbons, isoparaffins and mineral solvents. Its low density and viscosity allow very rapid spreading and give the finished product a light and dry feel. As a branched saturated hydrocarbon, it is relatively chemically stable and weakly reactive under normal manufacturing and storage conditions. Isododecane is also a volatile component, so part of the raw material gradually evaporates from the surface of the skin or hair after application, further contributing to its characteristic light and "dry-touch" finish. For this reason, it is particularly suitable for mascaras, eyeliners, long-wear decorative products, sprays and other formulations where rapid drying and reduction of greasy feel are desired.

Mechanism of Action: Isododecane acts primarily as a lightweight emollient and solvent. During application, it reduces friction between the formulation and the skin or

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.

TECHNICAL DATA SHEET

hair, improves product slip and enables more even distribution of lipophilic ingredients. Due to its low viscosity and high spreadability, the formulation is easily distributed in a thin and even layer, while its volatility allows part of the Isododecane to evaporate after application, leaving a less greasy and dry final feel. In decorative cosmetics, this property is particularly useful because it enables rapid formation of a thin film of pigment and other ingredients without a feeling of heaviness. Its action is mainly physical and formulation-related, without the need to attribute any specific biological or pharmacological effect to it.

Benefits:

- Improves product spreadability and enables even application.
- Provides a light, dry and almost weightless feel on the skin.
- Acts as an effective solvent for numerous lipophilic components.
- Can reduce the heavy and greasy feel of vegetable oils and other emollients.
- Improves slip, shine and sensory properties of skin- and hair-care products.

Usage: Isododecane can be added directly to the formulation, most commonly to the oil phase or to anhydrous systems. It combines easily with silicones, hydrocarbons, isoparaffins and other lipophilic ingredients and therefore does not require special processing conditions. It is commonly used at concentrations of approximately 2 to 15%, which corresponds to practical recommendations for commercial cosmetic grades, although in certain decorative and anhydrous formulations it may be used at considerably higher levels. Due to its volatility, unnecessary prolonged heating should be avoided and the container should be kept closed during processing in order to reduce loss of raw material through evaporation. In mascaras, eyeliners and long-wear products, it contributes to rapid drying and uniform film formation, while in creams, lotions and serums it helps create a lighter and less greasy texture. In hair-care products, it contributes to slip, shine and easier distribution of the product without significantly weighing down the hair. For external use only. For one commercial grade, MakingCosmetics lists a recommended use level of 2-15%.

Applications: Mascaras, eyeliners, foundations and other decorative cosmetics, creams, lotions, lightweight serums, conditioners, hair styling and care products, hair sprays, fragrance products and other formulations where a lightweight non-polar solvent and a dry sensory profile are required.

Safety of Use: Isododecane is included in the CIR safety assessment of isoparaffin hydrocarbons used in cosmetics. The Expert Panel concluded that Isododecane and the other evaluated isoparaffins are safe under current conditions and concentrations of

TECHNICAL DATA SHEET

cosmetic use when products are formulated to be non-irritating. In the data reviewed in that assessment, no significant concerns were identified regarding genotoxicity, reproductive and developmental toxicity, or carcinogenicity relevant to cosmetic use. The Panel also considered inhalation exposure and concluded that Isododecane may be safely used in hair sprays under the conditions evaluated in the report. In cosmetic use data, Isododecane concentrations of up to approximately 90% were reported, with this value representing actual cosmetic use rather than a recommended concentration for all formulations. Isododecane is also included in a more recent CIR re-review of the isoparaffin group.

Natural or Synthetic Ingredient: Isododecane is a synthetically produced hydrocarbon. Commercial cosmetic grades are most commonly obtained through multi-step processes from petrochemical raw materials, during which highly branched C12 isoparaffins are formed. COSMILE classifies its origin as synthetic, while one commercial supplier identifies petrochemical derivatives as the source of the raw material.

Animal Testing: The substance has not been tested on animals.

GMO: Non-GMO.

Vegan: Contains no animal-derived components.

Storage: Store in tightly closed original packaging in a cool, dry place, protected from sources of heat and ignition. Due to its volatility, the container should be tightly closed immediately after use.

Raw Material Origin: EU