Dimethyl ether

Eco-friendly propellant

Nouryon

Dimethyl ether

The single largest and most reliable global supplier of DME in the Western Hemisphere

Dimethyl ether (DME) is an eco-friendly propellant and blowing agent. It is used extensively as a propellant for aerosol production in personal care. Formulators can create many different aerosol products tailored for consumer needs in the personal care market, including hairspray, deodorant, and sun protection applications.

DME is used as an aerosol propellant and stands out due to its unique properties in relation to its non-toxicity, clear colorless, virtually odorless, high solvency power, good water miscibility and lower global warming potential.

Demeon® Dimethyl ether propellant and Demeon® ReNu100 propellant are produced according to ISO quality assurance within the scope of ISO 9001-2008.

The benefits of using DME in aerosol applications such as hairsprays and deodorants are that it has a high solvency power and therefore requires less ethanol use in your formulation.

It is a preferred solution for high quality hairsprays because with Demeon® Dimethyl ether propellant formulators can create smaller droplets, reach better coverage and can have fast drying.

Demeon® Dimethyl ether propellant

This is our traditional propellant for the personal care market. From our manufacturing base in Rotterdam we are able to supply this product globally.

In partnership with our trusted logistic partners we offer a variety of delivery solutions to meet the needs of the personal care market.

In addition we have a varied portfolio of suggested formulations using DME, from aerosol hairspray to deodorant to sun protection.

Product data

Chemical name	Dimethyl ether
Formula	CH_3OCH_3
Molecular weight	46.07
Density (liquid) at 20°C	0.669 g/ml
Pressure 20°C	4.1 bar (g)
Purity	minimal 99.99 wt%
Odor	typical, no residual odor
Boiling point	-25°C
Volume expansion	1 to 350 x (from liquid to vapor state at 20°C)
Characteristics	polar, water miscible, excellent and unique solvency power
Miscibility with water	water in DME: 6 wt% DME in water: 34 wt%

Formulating with Demeon® Dimethyl ether propellant

With the use of DME, formulators can create many different formulations tailored for consumer needs in the personal care market.

DME is ideal for different types of hairsprays and deodorants and works excellent in combination with for example our Amphomer® or Balance® polymers.

Demeon® ReNu100 propellant

Demeon® ReNu100 propellant is the latest and most sustainable DME product to enter the market..

Demeon® ReNu100 propellant is produced with the use of bio-based methanol following the Mass Balance approach according to ISCC Plus certification.

Methanol is the key feedstock material for DME and by moving from fossil- to a bio-based source, we increase the Renewable Carbon Index (RCI) of DME to 100% and the Naturality Origin Index (NOI) to 1. This is supporting the needs of customers in the personal care for bio-based solutions.

In addition we further reduce the carbon footprint of DME with this solution. Standard DME already has a favorable product carbon footprint with up to 40% reduction of CO_2/kg in comparison to other commonly used hydrocarbon propellants.

DME also has a much improved carbon footprint compared to HFC-152A (which has a GWP of 124). According to emission factors for Greenhouse Gas inventories from the US Environmental Protection Agency (2018). https://www.epa.gov/sites/default/files/2018-03/documents/emission-factors_mar_2018_0.pdf

Demeon® ReNu100 propellant is chemically identical to standard DME with the same purity (99.99%) and functions as drop-in replacement.

Bio-methanol

Currently our biomethanol feedstock is measured by Mass Balance. It is sourced locally in Europe, therefore close to our manufacturing facility in Europoort, Rotterdam. Bio-methanol comes primarily from farmers and is created via either manure sources from animals or from crop residue streams.

For Demeon® ReNu100 propellant, we use bio-methanol from crop residue streams to provide a bio-circular solution and with that also meet the criteria of vegan and cruelty-free. The bio-methanol has been produced without the use of any animal ingredients or by products.

We also assure that the manufacturing and testing process of the bio-methanol used for Demeon® ReNu100 propellant does not involve animal testing. Demeon® ReNu100 propellant is ISCC Plus certified with certificate number ISCC-PLUS-Cert-SE205-00001022.

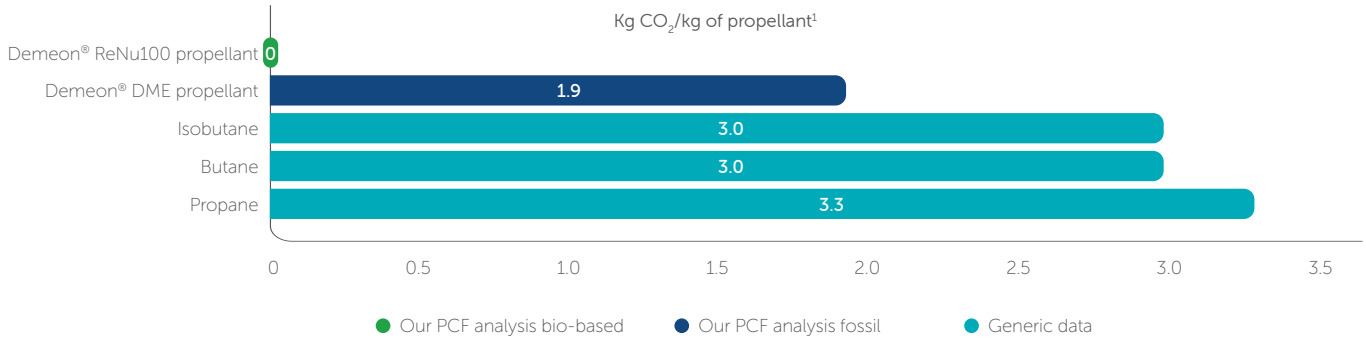
ISCC Plus certification

Our manufacturing site for Demeon® ReNu100 propellant in Europoort, Rotterdam, is certified according to the International Sustainability and Carbon Certification (ISCC) Plus standard.

The certification covers the use of bio-based and/or bio-circular feedstocks to produce DME with a Renewable Carbon Index (RCI) of 100% by the use of bio-based methanol. With the obtained ISCC Plus certification we demonstrate our commitment to addressing customer requirements and advancing sustainability efforts.

Product carbon footprint impact

Demeon® ReNu100 propellant can contribute to a product carbon footprint improvement of up to 100% compared to standard DME.



[1] CO_2 footprint is cradle-go-gate, including biogenic carbon uptake

Source: Emission Factors for Greenhouse Gas Inventories from 2018 by EPA gov

Contact us directly for detailed product information and sample request
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Nouryon is a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as personal care, cleaning goods, paints and coatings, agriculture and food, pharmaceuticals, and building products. Furthermore, the dedication of approximately 8,200 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands. Visit our website and follow us @Nouryon and on LinkedIn.

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