

Press Release

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The Carbon Trust verifies four BASF intermediates with a lower than market average product carbon footprint

- **“Carbon Trust Lower Claim” verification achieved for 1,6-hexanediol, formic acid, propionic acid and neopentyl glycol**
- **Verification confirms demonstrably lower cradle-to-gate CO₂ footprint of products compared to market average for fossil-based equivalent products**

The globally recognized climate change organization and product carbon footprint (PCF) verifier “the Carbon Trust”¹ has verified the BASF products 1,6-hexanediol (HDO), formic acid (FA), propionic acid (PA) and neopentyl glycol (NPG). The products have therefore achieved the Carbon Trust label and Lower than Market claim. This confirms that the products have a cradle-to-gate PCF that is demonstrably lower than the market average for fossil-based equivalent products. The verification is valid until May 2026. For PA and NPG, the verification only applies to the European production.

BASF manufactures all products mentioned at its Verbund site in Ludwigshafen, Germany. BASF produces HDO also at its Verbund site in Freeport, Texas. Additionally, FA is produced at the BASF Verbund sites in Geismar, Louisiana, and Nanjing, China. All mentioned products are marketed worldwide.

These products are identical to standard products in terms of quality and properties, meaning that customers can use them in their production without having to adapt

¹ More information about the Carbon Trust and their product carbon footprint labelling can be found here: <https://www.carbontrust.com/en-eu/what-we-do/product-carbon-footprint-labelling>

their existing processes (“drop-in” solutions). This allows customers to easily and efficiently reduce CO₂ emissions from purchased goods or services (Scope 3).

In its assessment, the Carbon Trust has evaluated BASF’s PCF comparison² against its Verified Lower Label Claim requirements. For this purpose, the Carbon Trust has reviewed whether BASF has correctly calculated the PCFs of the verified products³ and whether these are demonstrably lower than the market average for fossil-based equivalent products. The Carbon Trust has now verified that BASF’s PA, FA, NPG and HDO, all sold on the global market, fulfil all criteria to achieve a lower carbon claim. This provides BASF customers with additional support in their product selection. It helps them to make more informed choices and to understand the impact that BASF products have on their value chain. The Carbon Trust is a leader in carbon footprint calculation and verifies products, organizations and value chains worldwide.

“We are proud of the verification because it reflects our strong commitment to support our customers’ green transformation as stated in BASF’s recently announced “Winning Ways” Strategy. It proves that the carbon footprint of our products is demonstrably lower than the market average. This shows that we are on the right track to be the preferred partner for sustainable intermediates,” explains Ketan Joshi, President of BASF’s Intermediates division.

“As customer awareness about the environmental impact of their product choices grows within the chemical industry, there is an increasing demand for transparency. When BASF customers encounter the Carbon Trust verification and label, they can be confident that these verified products have undergone a rigorous process to demonstrate a lower carbon footprint than equivalent offerings in the market. The verification and label are therefore powerful tools to allow customers to select products that contribute to their own emissions reduction goals,” adds Veronika

² BASF has made its assessments of corresponding third-party products using publicly available information and fee-based, proprietary market survey data on production routes and deployed raw materials, to the extent available, as well as BASF’s own market and technology know-how. The data assumptions and allocation factors for third-party PCFs are the same as for the calculation of the PCF of the BASF product, as applicable. For both FA and HDO, the data periods evaluated by the Carbon Trust are for some product grades 2018 – 2020 and for some product grades 2020 – 2022. For NPG and PA, the data periods evaluated by the Carbon Trust are for all product grades 2018 – 2020.

³ BASF’s product carbon footprint (PCF) calculations follow the requirements and guidance given by ISO 14067:2018. In a methodology review, TÜV Rheinland has confirmed that the PCF (SCOTT) methodology developed and used by BASF SE is scientifically-based, is in accordance with ISO 14067:2018, and reflects the state of the art ([ID-Nr. 0000080389: BASF SE - Certipedia](#)).

Thieme, associate director, the Carbon Trust.

Highly efficient production methods reduce CO₂ emissions

BASF achieves the lower PCF through various measures. For example, energy generation in BASF's own gas-fired combined heat and power plants causes significantly lower greenhouse gas emissions than conventional forms of energy generation. Moreover, the production processes of LowPCF intermediates are characterized by high efficiency in energy and raw material consumption, which is due to the integrated BASF Verbund system and the continuous improvement of operational excellence. In addition, oil, natural gas or Verbund by-products, but not coal, are usually used as primary raw materials in the production of LowPCF intermediates. Due to the different chemical properties, this further reduces the CO₂ footprint.

Products with a wide range of applications

The intermediates FA, PA, HDO and NPG are versatile chemicals⁴ and are used as ingredients for various everyday products. Examples include plastics, car tires, de-icing agents, pharmaceuticals, crop protection products, paints and coatings. BASF customers use these products in the textile, automotive, agricultural, pharmaceutical and furniture industries, among others.

Due to its high chemical and thermal stability, NPG has proven itself in many applications, particularly as a building block for the production of polyester and alkyd resins for various coatings and plastics. A key area of application is powder coatings, which are particularly useful in the construction industry and for coating household appliances. Other fields of application include the production of lubricants, plasticizers and pharmaceuticals.

HDO is used in the production of industrial coatings, polyurethanes, adhesives and cosmetics, among other things. It also serves as a chemical building block for reactive thinners in epoxy systems, which are used in the production of rotor blades for wind turbines and in lightweight automotive components. HDO gives the end products flexibility, adhesion properties and weather resistance.

PA is used in particular in the food and animal feed industry, where it serves as a preservative to improve shelf life. BASF markets preservatives based on PA under

⁴ Details on <https://chemicals.basf.com/global/en/Intermediates/sustainability.html>

the trade names Lupro-Grain® and Luprosil®. The organic acid also proves its worth in the production of pharmaceuticals, pesticides, solvents and plastics.

FA is used, among other things, in animal nutrition to preserve animal feed and ensures efficient coagulation in the extraction of latex. Potassium formate, a salt of FA, is a highly efficient de-icing agent for roads, commercial buildings and airport runways. FA and potassium formate are also used in the oilfield industry and in shale gas exploration. FA is also a highly effective decalcifier and disinfectant and is used in leather processing.

About the Carbon Trust

The Carbon Trust is a global climate consultancy that aims to accelerate the transition to a low-carbon future. For more than 20 years, it has pioneered decarbonization for businesses, governments, and organizations around the world. The Carbon Trust is a leader in the field of carbon footprint calculation, verifying products, organizations and value chains worldwide.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. Around 112,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €68.9 billion in 2023. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States. Further information at www.basf.com.