

Cargill Anova[®] asphalt additives support industry goals of zero carbon emissions through verified EPDs

Schiphol, The Netherlands - Cargill's Asphalt Solutions is proud to announce the completion of a verified Life Cycle Assessment (LCA) and Environmental Product Declaration (EPD) for Anova asphalt additives. The results from the EPDs for Anova[®] rejuvenator, Anova[®] warm mix additive, and Anova[®] rheology modifier can be used to calculate how these asphalt additives may help reduce the environmental impacts of asphalt mixtures by increasing the use of recycled asphalt pavement (RAP) and lowering the temperature of your asphalt mix.

These studies provide validated product-specific carbon footprint values that can be included in the carbon emissions calculators required for specific asphalt projects. An understanding of the carbon impacts of asphalt additives helps achieve global Climate Commitments and reduce the greenhouse gas (GHG) emissions in the road construction industry.

Cargill Anova asphalt additives provide benefits in reducing carbon emissions and can help contribute towards net-zero commitments related to asphalt paving, for example:

- UK: At least 50% of all asphalt used on the strategic road network will be warm mix asphalt by 2025 and 80% by 2030.
- The Netherlands: From 2025 on, the sector will not be producing asphalt mixtures at temperatures above 140 °C anymore.
- Germany: the MAK*-Value of 1,5 mg/m³ will come into effect on January 1, 2025, resulting also into the requirement of warm mix asphalt usage.
- US: Achieve net zero carbon emissions during asphalt production and construction by 2050.

Cargill's industry partners are focusing more and more on sustainability and encourage the use of EPD's, like AsphaltNu in the Netherlands. *"AsphaltNu has sustainability embedded in the company's strategy and is continuously looking for opportunities to reduce the environmental impact of our asphalt mixtures. Our sustainability objectives focus on themes such as circularity, energy neutrality and climate neutrality (CO₂ emissions). To achieve these objectives, we are investing in more sustainable production methods (e.g., warm mix asphalt) and working with supply chain partners on raw materials with a lower environmental impact, among other things. AsphaltNu uses suppliers' EPDs to assess the environmental impact of a raw material, based on the environmental impact categories on the EPDs. Cargill's verified EPD gives us insight into the environmental impact of the product Anova[®] 1817 rejuvenator. It gives us confidence that we are making the right choice. In this way, we are jointly taking steps to make the asphalt industry more sustainable."* - Jörge de Wijs, AsphaltNu, Netherlands.

Cargill's Anova asphalt additives and manufacturing processes were analyzed by Ecochain using a cradle-to-gate life cycle assessment (LCA) in conformance with ISO 14040:2006 and ISO 14044:2006. Ecochain then used the LCAs to generate an Environmental Product Declaration (EPD) which transparently reports objective, comparable, third-party verified data about products and services' environmental performance from a life cycle perspective. The Anova asphalt additives EPDs conform with ISO 14025 and EN 15804 + A2/Bepalingsmethode, and include reporting of biogenic carbon content. The EPDs are registered with MRPI (Milieu Relevante Protect Informatie), a program operator in the Netherlands and can be [requested here](#).

The European Asphalt Pavement Association (EAPA) has mentioned that "an increasing demand from road owners, operators and users for sustainability and environmental accountability as included in the Construction Products Regulations has raised the need for producers to make EPDs available." The same has been said by the National Asphalt Pavement Association in the US: "Road owners, agencies, and contractors need to share quantifiable metrics of sustainability and environmental impact with their stakeholders." With an EPD, the information needed to understand the potential environmental impact of a specific product is presented in a clear report

outlining the results in a consistent format, giving stakeholders confidence in the data.

"Publishing the EPD for our products is an essential step in demonstrating the sustainability impact of our products. We're committed to supporting the industry with high-performance, more sustainable solutions." said Justin Black, Global Category Leader for Cargill's Asphalt Solutions.

"Our entire industry is rightly focusing on sustainability and the global warming potential (GWP) figures for additives are an important part of the puzzle. The information provided by Cargill in their bio-based additive EPDs is just what's needed and customers are impressed when they see the values compared to alternative products." David Needham, Business Manager at CORE Additive Technologies in the United Kingdom.

Now you can maximize RAP, minimize energy use and understand the carbon contribution of our Anova products. The Anova rejuvenator, warm mix additive and modifier are innovative, bio-based, non-toxic and non-hazardous asphalt additives that meet performance specifications and help to meet sustainability goals.

- With **Anova[®] rejuvenator** the recycled asphalt pavement (RAP) in your asphalt mix can be increased by up to 100%. For example, if the total US asphalt industry increased RAP from 20% to 40%, this could result in a greenhouse gas emissions reduction of up to 2 million MT CO₂-eq, avoidance of up to 18 million MT of waste sent to landfill, and up to \$3 billion cost reduction.
- **Anova[®] warm mix additive** allows for a reduction in the production temperatures of up to 40°C compared to conventional hot mix asphalt (HMA). A temperature reduction of 40°C leads to an energy saving of 15%, making it possible to save up to ~3 kg CO₂-eq per 1 ton of SMA (Stone Mastic Asphalt). Crews can reliably achieve density and improve workability at lower temperatures while reducing emissions, can eliminate the need for anti-stripping agents and improves the moisture resistance of the asphalt binder.
- Using **Anova[®] rheology modifiers** can help reduce the GWP of asphalt bitumen because of its high biogenic carbon content. This increases the "useful temperature interval" (UTI) of bitumen from many different crude sources. Through higher softening rates at lower temperatures, Anova rheology modifiers limits high temperature grade loss and enhances low quality bitumen by improving durability.