

**Proven sustainability:  
TÜV Rheinland certifies Evonik comparative life cycle  
assessment for amino acids in animal nutrition**

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Adding amino acids from Evonik to pig and poultry feed not only ensures a well-balanced diet for your animals but also conserves resources and protects the environment. This is the finding of a comparative life cycle assessment carried out by Evonik and now certified by TÜV (Technischer Überwachungsverein) Rheinland, a globally recognized independent auditor. Evonik is the only manufacturer of amino acids for animal nutrition that has subjected its products—methionine, lysine, threonine, and tryptophan—to a complete life cycle assessment, and compared them with the use of alternative raw materials such as soy meal or rapeseed meal. This kind of comparative life cycle assessment records and evaluates environmental impact and energy and raw materials consumption over a product's entire life cycle—from extraction of the raw materials, through production of the amino acids, to agricultural use of the manure generated by the animals.

“The certificate from TÜV Rheinland proves that we have carefully and impartially evaluated the environmental impact,” says Dr. Reiner Beste, head of Evonik's Health & Nutrition Business Unit. “And the results allow only one conclusion: adding our amino acids to animal feed is a highly sustainable way to nourish animals, and thus supply the growing world population with precious food protein from eggs, and meat—all with as little environmental impact as possible.”

Amino acids are vital to humans and animals: they are the building blocks of proteins—for example, muscles, hair and feathers—and are used by the body to maintain essential metabolic functions. The amino acids have to be present in the right quantities for the body to produce the proteins. If one is missing, protein synthesis stops and the remaining amino acids are excreted without being used. Conventional animal feeds such as wheat and barley always show deficits of one or more amino acids, and the consequences are significant: the animals require more feed because they utilize it poorly. They also, in turn, produce more manure, which pollutes the groundwater with nitrate and the air with ammonia.

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These deficits can be offset by adding protein-rich raw materials such as soy meal, rapeseed meal, fish meal, or amino acids. According to Evonik's now certified comparative life cycle assessment, adding amino acids is the method most beneficial for the environment. If, for example, DL-methionine is added to the feed instead of soy or rapeseed meal, the emission of ammonia drops by a factor of 26, the emission of greenhouse gases by a factor of 23, and emission of nitrate by a factor of 7. Additionally, energy consumption is reduced to one sixth the previous amount. The reason for this is that producers who use DL-methionine as a nutrient source can partially replace important soybeans by wheat from domestic sources, thus minimizing energy-intensive processing of soy beans and avoiding import from overseas countries: the United States, Brazil, and Argentina, where increasingly more acreage is also required.

These environmental concerns will become increasingly important in the future. Today, there are nearly 7 billion people in the world to nourish, and the FAO (Food and Agriculture Organization) expects the worldwide consumption of meat to rise from the current 37.4 kg per head and year to 52 kg in the year 2050. As agricultural land is a limiting resource, highly efficient and suitable food production is a major challenge with regard to the population growth.

“Sustainable nutrition for the world's population requires that we handle our resources as efficiently as possible,” says Beste. “With the certified comparative life cycle assessment, we've proven that we're playing an important role in resource conservation with our amino acids. And we're ensuring transparency—customers can precisely trace the environmental impact of the products they buy.”

The Health & Nutrition Business Unit prepared its first life cycle assessment for DL-methionine as early as 2002. Because methods of feeding have changed in recent years, the data has been updated and expanded to include all four amino acids important to animal nutrition. Internationally, the life cycle assessment is a recognized method for evaluating environmental impact, because it is the only method that can cover a broad range of applications consistently and uniformly across nations.

### Captions for the attached pictures:

- Prof. hc Dr. Ralf Wilde (left), TÜV Rheinland, assigns the certificate to Dr. Reiner Beste, President Health & Nutrition of Evonik Degussa GmbH
- Eco logo

### About TÜV Rheinland

TÜV Rheinland is a leading group for the provision of technical services worldwide. It has over 490 locations in 61 countries on all five continents. With a workforce of 13,850, it achieves a turnover of approx. € 1.2 billion a year. The guiding principle in the Group is sustainable development of safety and quality standards. The motivating factor for TÜV Rheinland employees is the conviction that without technical progress, society and industry cannot grow. For this very reason, using technical innovations, products and equipment in a safe, responsible manner is of decisive importance. TÜV Rheinland has been a member of the Global Compact of the UN since 2006. TÜV Rheinland is 140 years old and its headquarters are in Cologne.

### About Evonik

Evonik Industries is the creative industrial group from Germany. In our core business of specialty chemicals, we are a global leader. In addition, Evonik is an expert in power generation from hard coal and renewable energies, and one of the largest private residential real estate companies in Germany. Our company's performance is shaped by creativity, specialization, continuous self-renewal, and reliability.

Evonik is active in over 100 countries around the world. In its fiscal year 2009 about 39,000 employees generated sales of about €13.1 billion and an operating profit (EBITDA) of about €2.0 billion.

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