



INTACT obtains ISCC EU IX-A certification for Pulse® the world's first second-generation pulse-based alcohol

This certification recognises the virtuous nature of Intact's patented technology, which enables the conversion of non-food pulse residues into low-carbon alcohol

Key points

- Intact has obtained ISCC EU IX-A “second-generation” certification for Pulse®, the world's first neutral alcohol made from pulses
- This certification provides official recognition of Intact's eco-design approach, notably its ability to valorise residues rather than food products into alcohol
- Pulse® delivers structural solutions to major global challenges such as climate change, nitrogen cycle disruption, land pressure reduction and the promotion of agricultural biodiversity, contributing to production models that regenerate rather than deplete resources
- Produced in the Loiret region (France), Pulse® marks a major step forward for the creation of sustainable spirits, fragrances, and cosmetics

Baule, 14 October 2025 – Intact, a technology and industrial company developing eco-designed ingredients from pulses, announces that its neutral pulse-based alcohol, Pulse®, obtained **ISCC EU IX-A certification** in July 2025.

By deciding in March 2022 to design the world's first neutral alcohol made from pulses, and by achieving this through the circular valorisation of residues from plant-protein production, Intact sought to offer a sustainable alternative for the spirits, cosmetics, and pharmaceutical industries. The certification now officially recognises the environmental benefits of its patented technology and grants Pulse® the status of a “second-generation” alcohol.

This recognition rewards Intact's vision: to design new-generation ingredients within a circular economy framework — ensuring that every agricultural resource is fully valorised, and that production becomes a lever for regeneration rather than depletion.

An eco-design approach addressing six of the nine planetary boundaries

The eco-design of Pulse® aims to provide structural, measurable responses to six of the nine planetary boundaries affected by alcohol production:

- **Climate stabilisation**, through a drastic reduction of the carbon footprint of alcohol
- **Nitrogen cycle balance**, by promoting the cultivation of pulses— the only plants able to naturally fix atmospheric nitrogen in soils
- **Biodiversity preservation**, by encouraging melliferous crops and regenerative agricultural practices
- **Land pressure reduction**, through the local production of proteins and valorisation of production residues

- **Freshwater conservation**, thanks to a water-free plant extraction process
- **Reduced chemical pollution**, by limiting nitrate emissions while maintaining a fully natural technological process

Reducing land pressure: a major challenge for Europe's alcohol industry

According to a 2023 study by the **Institute for Energy and Environmental Research (IFEU Heidelberg)**, the agricultural production required to meet Europe's alcohol consumption uses around **1.4 million hectares of farmland** — equivalent to the combined area of the French departments of Loiret and Gironde.

Amid growing pressure on natural resources, the **European Commission** has since 2018 sought to encourage the responsible use of agricultural land: reserving the best soils for food production and promoting circular valorisation of residues and co-products for non-food purposes. This approach aims to reduce land pressure and preserve space for both food systems and nature, conditions essential to local, healthy food production and biodiversity restoration.

Within its **RED III Directive**, the EU distinguishes between **first-generation (1G)** alcohols, derived from food crops, and **second-generation (2G)** alcohols, derived from non-food residues. To ensure traceability and compliance of these sustainable new supply chains, the European Commission has approved several independent certification schemes — including the well-known **ISCC EU (International Sustainability & Carbon Certification)** system, which Intact has now obtained.

This certification guarantees sustainability, greenhouse gas reduction and, where applicable, the absence of land-use change.

The certification thus officially validates Intact's eco-design approach: producing alcohols from non-food residues to open the way for **positive consumption models** that exert no land pressure and preserve the natural spaces and ecological functions vital to biodiversity.

Pulse@: contributing to nitrogen-cycle restoration and biodiversity regeneration

For millennia, the natural nitrogen cycle remained in near-perfect balance: nitrogen emissions to ecosystems roughly equalled the planet's biological nitrogen fixation capacity via pulses and soil microorganisms.

The invention of the **Haber-Bosch** process in 1909 disrupted this equilibrium, allowing for the industrial synthesis of ammonia from atmospheric nitrogen. Within a century, human activity has tripled the amount of reactive nitrogen released into the biosphere — far exceeding the planet's capacity to absorb it.

According to research from the **Stockholm Resilience Centre (2023)**, human activities inject approximately **190 million tonnes of reactive nitrogen** into ecosystems each year, compared with a stability threshold estimated at **62 million tonnes**.

This excess, largely due to synthetic nitrogen fertilisers, contributes to **water pollution, algal blooms, nitrous oxide (N₂O) emissions**, a greenhouse gas 300 times more potent than CO₂, and **rapid biodiversity loss**.

Pulses, only plants capable of fixing nitrogen naturally in soils, help reverse this dynamic. Through symbiosis with soil bacteria, they capture atmospheric nitrogen and restore it naturally to subsequent crops, without synthetic fertilisers.



By reintroducing these plants at the heart of agricultural systems, Intact contributes **nature-based solutions** that help bring human activity back within planetary boundaries, reducing water pollution, restoring biogeochemical balance, and cutting N₂O emissions, which account for 42% of France's agricultural greenhouse gases.

With their deep, dense root systems, pulses also stabilise soils, enhance porosity and water infiltration, and reduce runoff and erosion.

By encouraging such biodiversity-friendly crops, Intact's Pulse® alcohol supports nitrogen-cycle restoration, climate adaptation, and ecosystem regeneration.

Pulse®: an alternative to mitigate climate change

Each year in Europe, 16 million hectolitres of neutral alcohol are used to produce spirits, fragrances, and pharmaceuticals, generating 2 million tonnes of CO₂ emissions.

Beyond the inherent sustainability of using pulse residues, Pulse®'s value lies in the outstanding performance of its technology in reducing greenhouse gas emissions.

Compared with reference values published by the European Commission for first-generation alcohols, Pulse® achieves a 78% to 87% reduction in GHG emissions.

Even when compared with other second-generation alcohols made from forest or agricultural residues, Pulse® cuts emissions by up to 50%.

Comparison of Pulse®'s emissions with EU reference values :

- Wheat alcohol (1G): -87%
- Maize alcohol (1G): -87%
- Beet alcohol (1G): -80%
- Sugarcane alcohol (1G): -78%
- Forestry residues alcohol (2G): -57%
- Agricultural residues alcohol (straw) (2G): -54%

"This certification rewards Intact's eco-design approach. It recognises our technological model based on the circular valorisation of pulses and demonstrates the environmental benefits of Pulse® in full alignment with the planet's ecological boundaries." Alexis Duval, President and Co-founder of Intact

About INTACT

Intact is an industrial and technological company founded in 2022, specialising in the production of sustainable plant-based ingredients using innovative, natural processes and pulses grown through French regenerative agriculture.

Combining innovation with environmental responsibility, Intact aims to rethink the value chain of the food, cosmetics, and pharmaceutical industries through solutions that are healthier and more respectful of the planet.



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