Ultrasonic Welding in Compostable Coffee Capsules: Taking the Sacrifice out of Sustainability

Tunability and Ease of Use with Ultrasonic Sealing

Our partners use ultrasonic welding to seal the lid and flexible, nonwoven filter in coffee capsules to the rigid capsule exterior with easily tunable, high-frequency vibrations, allowing Ingeo to stay well below its melting point during the manufacturing process. This sealing method creates an oxygen barrier without the need for secondary packaging and delivers a reliably clean seal that preserves the taste and aroma of the coffee inside.

Ultrasonic welding's ability to bind together multiple forms of Ingeo is what makes a complex packaging application, like a compostable coffee pod, possible. A single coffee capsule, for example, is constructed from multiple components including a nonwoven filter, film lidding, and a rigid capsule body. With ultrasonic welding, Ingeo can be sealed in any combination of rigid, fiber, and flexible film components to fit the designs of different brewing systems or even applications beyond coffee such as nonwoven tea bags or food packaging.

Sustainable Coffee Capsules— Turning a Problem into a Resource

Ingeo turns waste into a sustaining resource by giving grounds back to the ground with a completely compostable capsule. Ingeo coffee capsules are certified for industrial composting systems*, meaning consumers get better preserved flavor and a convenient, sustainable, circular waste option for their entire coffee capsule.

By design, the manufacturing process for Ingeo uses plants to sequester greenhouse gases like carbon dioxide into sugars. This means we create a plastic that has a carbon footprint on average 80% smaller than the petrochemical-based plastics like polypropylene and polystyrene commonly used in coffee pods. But that carbon impact is only the beginning of the story.

Using Ingeo for all components of a coffee pod also means the pod is compostable alongside the coffee. While composting can help address the packaging waste issue, more importantly compostable coffee pods help keep food waste (spent coffee grounds) out of landfills where it generates methane. According to the US EPA, food breaking down in landfills is the third-largest source of human-related methane emissions in the US.

Instead, food waste is diverted to composting where it helps create a nutrient-rich soil amendment that improves both biodiversity and the ability to sequester more CO2 in soils. From production with renewable resources all the way through composting, we can reduce the emissions of greenhouse gases creating a powerful cumulative reduction effect.

Ingeo Coffee Capsules.
Because Good Tastes Better.

*Certified by TUV and the Biodegradable Products Institute.