HowGood Minimally Processed Methodology

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Who is HowGood?

HowGood is an independent research company with the world's largest database on product sustainability. With data and analysis for more than 33,000 ingredients, chemicals, and materials, HowGood helps leading food brands, retailers and investors improve their environmental and social impact. Through in-depth, ingredient-level insights on factors ranging from greenhouse gas emissions to animal welfare to labor risk, HowGood data powers strategic decision-making for the sourcing, manufacturing, merchandising, and marketing of sustainable products. Brands identify opportunities to improve sustainability, drive greater transparency, and empower their consumers to make higher impact purchases. Visit howgood.com for more information.

What is HowGood's research methodology?

HowGood has 15 years of research on global food supply chains. The team consolidates and analyzes findings from over 600 accredited data sources and certifications. These include a range of resources such as peer reviewed Life-Cycle-Assessment studies, journal articles, academic conference proceedings and texts, aggregated commercial databases, targeted industry studies, NGO research, and government publications. HowGood is dedicated to not only employing the most industry-recognized methodologies but also ensuring that the latest scientific research is incorporated. Metrics and impact assessments are updated accordingly, on an ongoing basis, making HowGood's platform the leading-edge tool for product sustainability. In turn, HowGood is able to provide impact assessments that are always accurate, comprehensive, and the most up-to-date. Through the HowGood platform, we are able to scale this approach across products, brands, and the entire food industry.

What does the Minimally Processed attribute measure?

HowGood's Minimally Processed attribute recognizes food products that are made with lower-energy processing, which reduces environmental impact. Less ingredient processing required in production also tends to yield products with better ingredient quality.

Products that receive the Minimally Processed attribute have ingredients that do not require high-intensity industrial processing, and could be produced prior to the advent of food science. Low-intensity processes such as minor heat or fermentation, mechanical processing, and physical extraction are a few examples of ingredient processes that would qualify. On the contrary, ingredients that can only be produced via chemical processing, industrial fermentation, and use of solvents are examples of high-intensity processes.

Note: This attribute looks at the method used to process an ingredient and does not take into account the actual energy required to do so. It also does not reward a product for its level of healthiness or nutrition, or how "natural" the product is.

How long does a product qualify for the Minimally Processed attribute?

Products that qualify for Minimally Processed receive access to the attribute for public-facing communications for one year. At the end of the annual contract, products must be reassessed based on the current industry benchmark to re-qualify.

What does the Minimally Processed attribute mean for consumers?

The Minimally Processed attribute provides consumers with an indicator of the intensity of an ingredient's transformation, as indicated by the degree of processing involved in producing its ingredients. It's easy-to-digest and guides consumers toward decisions that are in line with their health goals and dietary preferences. By purchasing Minimally Processed products, consumers can take a step toward making more informed choices on what they choose to purchase.

What is HowGood's research methodology for calculating the Minimally Processed attribute?

The Minimally Processed product attribute rewards low-intensity ingredient processing. To receive the Minimally Processed attribute, products must only contain ingredients that are not dependent on commercial/industrial processing to exist. Minor heat or fermentation, mechanical processing (e.g., milling of grain), and physical extraction (e.g., expeller pressing of olives) are examples of low-intensity ingredient processes accepted for this attribute. The ingredient may be augmented by the food system but not created by it. Some ingredients ubiquitous in the food system used as supplements added in small quantities to enrich foods are included as minimally processed despite being dependent on commercial/industrial processing, and constitute the notable exception to this rule.

HowGood's methodology for calculating processing impact involves:

1. **Data Collection:** HowGood draws on a diverse collection of data sources, including peer reviewed journal articles to identify the level of intensity applied in the production of food ingredients. For each ingredient processing type, or combination of processing types, HowGood researchers identify the relevant steps to transform the ingredient, including the energy and chemical inputs required. Our experts identify when an ingredient only requires low-intensity processing. HowGood also maintains a record of and references the NOVA classification system on the level of ingredient processing. NOVA is limited in its coverage of ingredients compared to the breadth of the HowGood library, hence its use as a reference.

2. **Ingredient Mapping:** Once the data is collected and analyzed, HowGood conducts a proprietary process of mapping each ingredient to its source crop, animal or material. Using LCAs, peer reviewed studies, and other sources, HowGood then applies the most likely processing type that would be used to take the source crop and transform it into the ingredient. For example, all-

purpose flour would be mapped to the crop wheat. The processing of wheat into all-purpose flour would involve milling and (likely bleaching as well).

3. **Data Aggregation:** HowGood, to date, has mapped nearly every ingredient, chemical and material (33,000 in total) in the CPG food industry, including where and how it is produced. This mapping is used to aggregate data across geographic regions or ingredient categories and develop industry-average impact profiles for processing types and energy usage across every ingredient.

   Based on the ingredient mapping process, HowGood assigns a default processing type and corresponding industry-average profile for every ingredient in a product. If deeper levels of data granularity are available (from a specific supplier, industry partner, or publication), these specifics are applied.

What data sources does HowGood use to assess processing impact?

Palm Oil Innovation Group	Cradle to Cradle
EcoInvent LCA Database	ELCD
United States Department of Agriculture	Codex Alimentarius (WHO/FAO)
Australian Certified Organic	Non-GMO Product Certified
Humanity United	Everything Added to Food in the US
ESU World Food Database	Consultative Group for International Agricultural Research
International Journal of LCA	Meat Atlas
Open LCA	European Food Additives Database
Sustainability Consortium	Food Additives Database
Food Processing Technology	