Information Sheet | Compostability Ultrafuse PLA

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Dear customer,

BASF Forward-AM Ultrafuse® PLA natural is a certified industrial compostable1 biopolymer in accordance with standards such as DIN V 54900-1, EN 13432 and ASTM D 6400.

Based on the information available to us from our raw material suppliers, and our knowledge of the products' compositions, our Ultrafuse PLA natural meets the requirement of the below mentioned standards with limitation of a maximum thickness of 2.0 mm:

- DIN V 54900-1, is a German standard that focuses on the chemical assessment of the biodegradability of polymeric materials under controlled composting conditions.
- EN 13432, is a European standard that specifies the requirements for packaging materials and components to be considered compostable and biodegradable under aerobic conditions in industrial composting facilities.
- ASTM D6400, is and American standard to determine if a plastic will compost satisfactorily industrial facilities.

[1]Composting is a process that transforms organic waste into a valuable soil amendment. Ultrafuse® PLA natural is industrial compostable material requiring specific conditions for degradation, such as those found in dedicated municipal or industrial composting facilities. These facilities maintain precise control over factors like temperature, humidity, oxygen levels, and material composition. Without these controlled conditions, PLA will not decompose adequately. Further, colored versions of PLA have not been evaluated for compostability.

Ultrafuse® PLA biopolymer is composed of polylactic acid, which can undergo a two-step breakdown process. Initially, moisture and heat within the compost pile break down the polymer chains into smaller fragments and lactic acid. Microorganisms present in the compost then consume these fragments and lactic acid as nutrients. Since lactic acid is naturally abundant, many organisms, including fungi and bacteria, can metabolize it. The end products of this process are carbon dioxide, water, and humus, a soil-enriching substance. The rate of degradation is influenced by temperature and humidity. The mentioned regulatory guidelines and standards for composting revolve around four basic criteria: Material Characteristics, Biodegradation, Disintegration, and Ecotoxicity. The ASTM D6400 and EN 13432 specification for industrial composting defines 84 days as reasonable for fragmentation of the product, and 180 days for complete mineralization in a properly managed composting facility.

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