Biodegradable Polymers

Product Information *Version 1.5 July 2017*

Biodolomer® I

Biodegradable Compound for Injection Molding

Product Description

Mineral filled injection molding grade, bio-degradable according to DIN EN 13432, e. g. for stiff packaging applications with food contact.

Contains 85 - 90 % renewable resources.

GAIA BioMaterials AB
Makadamgatan 5, 254 64 Helsingborg
Sweden
+46 (0)42 300 39 99
info@gaiabiomaterials.com

Compostability and Biodegradability

Biodolomer® I fulfills the requirements of the existing standards for compostable and biodegradable polymers, because it can be degraded by microorganisms.

Available Certificates:

Norm	EN 13432 (EU)
Certification Body	Vinçotte
Certification Name	SEEDLING
Certification Number	7P2102

The biodegradation process in soil depends on the specific environment (climate, soil quality, population of microorganisms).

Food Regulatory Status

Biodolomer® I is one of the few compostable polymers, which complies in its composition with the European food stuff legislation for food contact, EU Directive 10/2011 and US food contact notification for the main components: e. g. FCN 475, 907 and E 553b. Specific limitations and more details are given on request. The converter or packer has to check the suitability of the article for the application.

Form Supplied and Storage

Biodolomer® I is supplied dry and ready to use in moisture-proof in the form of cylindrical or flat pellets. Its bulk density is about 0.9 g/cm³ Standard packs are the special 25 kg bag and the 1000 kg bulk container (octagonal IBC = intermediate bulk container made from corrugated board with a liner bag) with aluminum liner. Subject to agreement other forms of packaging are also possible. All containers are tightly sealed and should be opened only immediately prior to processing. To ensure that the perfectly dry material delivered cannot absorb moisture from the air the containers must be stored in dry rooms and always carefully sealed again after portions of material have been withdrawn. Biodolomer® I can be kept 12 months at 23 °C in the undamaged bags. Containers stored in cold rooms should be allowed to equilibrate to normal temperature (min. 20 °C) so that no condensation forms on the pellets.

Quality Control

Biodolomer® melts are thermally stable up to 210°C and do not give rise to hazards due to molecular degradation or the evolution of gases and vapors. Like all thermoplastic polymers Biodolomer® decomposes on exposure to excessive thermal load, e. g. when it is overheated or as a result of cleaning by burning off. In such cases gaseous decomposition products are formed. Temperatures above 250 °C accelerate the decomposition, in which mainly tetrahydrofuran and water are formed. Above 300 °C small quantities of aldehydes and saturated and unsaturated hydrocarbons are also formed. When Biodolomer® is properly processed and there is adequate suction at the die no risks to health are to be expected. Further safety information see safety data sheet of individual product.

Typical Material Properties of Biodolomer® I at 23°C

***not to be construed as specifications**

Property	Unit	Test Method	Value
Polymer abbreviation	-	-	PLA/PBAT
Density	kg / m³	ISO 1183	1370
Melt volume rate	MVI (190 °C / 2.16 kg)	ISO 1133	35
E-modulus Strain at break (v = 50 mm / min)	MPa	ISO 527-2	4000
Drying:			
Drying temperature	°C		60
Drying time	h		1
Processing:			
Melt temperature range	°C	-	180 - 210
Melt temperature, ideal	°C	-	195
Tool temperature range	°C	-	10 - 25
Residence time, max.	min.	-	2
Machine settings:			
Temperature flange (hopper)	°C		40
Barrel temperature 1, (feeding zone)	°C		190
Barrel temperature 2, (comp. zone)	°C		210
Barrel temperature 3, (metering zone)	°C		210
Barrel temperature 4, (nozzle)	°C		210
Shrinkage:			
Processing shrink-age, test box, 1 mm	%		0.14

Note

The information submitted in this document is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance for a special purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed. (July 2017).

GAIA BioMaterials AB
Makadamgatan 5, 254 64 Helsingborg
Sweden
+46 (0)42 300 39 99
info@gaiabiomaterials.com