

# PHAs

## General Properties

PHA-type polymers (Polyhydroxyalcanoates) are thermoplastic resins made from renewable vegetal resources, produced by bacterial sugar fermentation.

PHA can be processed on standard equipments.

PHA materials are biodegradable and compostable in agreement with standards in use.



# NaturePlast

The natural evolution of plastic



## Applications

**Processing:** extrusion (film, sheet, profile...), calendering, thermoforming, injection molding.

**Markets:** food packaging, horticulture, technical parts ...



## Properties

- Thermal resistance, flexibility and barrier properties higher than PLA. Opaque material.
- PHAs are quickly biodegradable.

Grade	Properties	Density	MFI (g/10min)	Optical property	Tensile Modulus (MPa)	Tensile elongation at break (%)	Unnotched Charpy Impact resistance (kJ/m <sup>2</sup> )	Thermal resistance (°C)
<b>ISO</b>		<b>1183</b>	<b>1133</b>		<b>527</b>	<b>527</b>	<b>179</b>	<b>75-2</b>
<b><i>Extrusion</i></b>								
<b>PHE 001</b>	Additived	1,25	5 (170°C)	opaque	855	146	101	47 (HDT B)
<b><i>Injection</i></b>								
<b>PHI 001</b>	Additived	1,25	15 (170°C)	opaque	860	4	45	45 (HDT B)
<b>PHI 002</b>	Standard	1,23	5 – 10	opaque	4200	3	5	134 (HDT B)
<b>PHI 008</b>	Standard	1,40	30	opaque	2800	4	17	137 (Vicat A)