



INEOS

Olefins & Polymers Europe

Your partner in

**POLYOLEFIN  
POWDERS**

When powder  
becomes power

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INEOS

## Eltex® HDPE Powders

INEOS O&P Europe is offering a wide range of HDPE materials in powder form for a wide variety of applications.

Eltex® HDPE powders are particularly suited for:


- / **Highly loaded colour master-batches**
- / **Higher quality compounds**
- / **Base material for chlorinated PE**
- / **Organoleptic applications**
- / **Superior Wood Plastic Composite (WPC)**

## Commercial Product Range

### HDPE powders

Eltex®	Av Particle Size µm	MFR g/10 min 190°C/2.16kg ISO 1133	Density @23°C kg/m³ ISO 1183-1	Melting Temperature °C ISO 11357-3
<b>A3180PN1852</b>	300	21.5	957	131
<b>A4009PFN1324</b>	380	0.85	959	136
<b>A4040P</b>	400	3.5	943.5	128
<b>A4090P</b>	400	11	951	130
<b>A5006PFN1281</b>	350	0.6	943.5	131
<b>B4002P</b>	400	0.3	949	130

These products are available under various packaging forms: bags, big bags, IBC. Please contact your sales representative for more details.



We offer a full range of high value polyolefins solutions for all kind of market applications.

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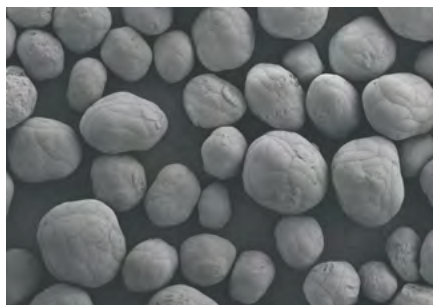
## Eltex® P PP Powders

### A unique morphology for dedicated usage

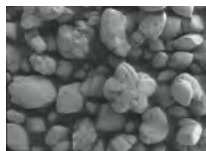
A unique proprietary catalyst allows the production of powders with unique characteristics.

Compared to competitive PP powders (samples A and B) or to ground PP pellets, they exhibit the following advantages for the user:

- / **Very regular and spherical particles**
- / **A more regular size and shape than standard powders or ground pellets**
- / **Narrow particle size distribution mostly between 300 and 800  $\mu\text{m}$**
- / **Very little amount of fines below 200  $\mu\text{m}$**



Eltex® P HV001PF



Powder sample A

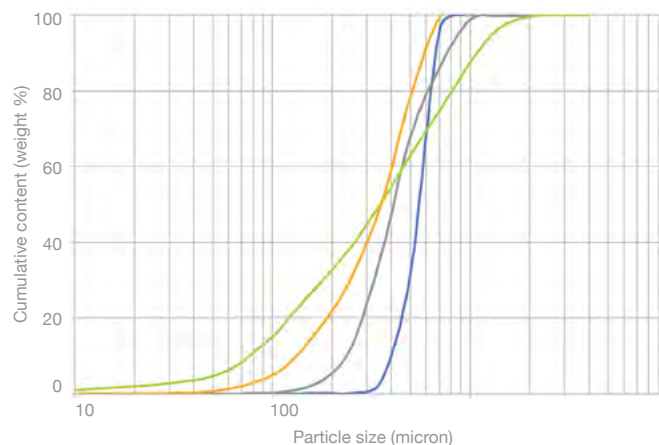


Powder sample B



Ground PP pellets

## Comparative Particle Size Distribution



- Ground PP Pellets
- Powder Sample A
- Powder Sample B
- Eltex® P HV001PF





## Uses of Eltex® P Powders and Grade Range

INEOS Eltex® P powders allow a very good dispersion of additives, pigments or fillers. For this reason they are specifically recommended for the production of concentrates and MB. They also constitute a material of choice for the production of Wood Plastic Composites (WPC) of superior quality.


Easy dispersion of elastomers and good wettability when blended with liquids are other specific advantages of Eltex® P powders.

Grade range: homopolymers of various fluidity and a highly modified random copolymer featuring a very low melting temperature.

Eltex®		MFR	Density @23°C	Melting Temperature
		g/10 min 230°C/2.16kg ISO 1133	kg/m <sup>3</sup> ISO 1183-1	°C ISO 11357-3
<b>HL001PF (*)</b>	HPP	2.15	1600	161
<b>HV001PF (*)</b>	HPP	10	1600	161
<b>HW001P</b>	HPP	25	1700	161
<b>HY001P</b>	HPP	45	1700	161
<b>KS001PF (*)</b>	RCP	4.5	700	134

(\*) F = low gels

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The choice for the production of Wood Plastic Composites (WPC) of superior quality.

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## PE and PP Powders Handling and Processing

### Bulk handling

Conventional silos, pumps and transfer lines can be used for Eltex<sup>®</sup> and Eltex<sup>®</sup> P powders with only minor modifications. The relatively high bulk density of INEOS powders leads to an enhanced flowability in the transfer lines that must be carefully sealed to avoid losses.

### Processing

All Eltex<sup>®</sup> and Eltex<sup>®</sup> P powders have to be stabilised via addition of primary and secondary antioxidants. Eltex<sup>®</sup> P powders also need the addition of an acid scavenger prior to processing.

Given the smaller particle size of powders versus pellets, it may be necessary to adopt different processing conditions, depending on the equipment: throat cooling, lower first zone temperature and grooved barrel are advisable.

### Melt flow index measurement of Eltex<sup>®</sup> P powders

Although Eltex<sup>®</sup> P powders can be stored for months under normal temperature conditions, they may show some degradation when molten in the melt flow indexer at 230°C. We recommend over-stabilisation of the sample to be tested by premixing the powder with the following types of antioxidants.

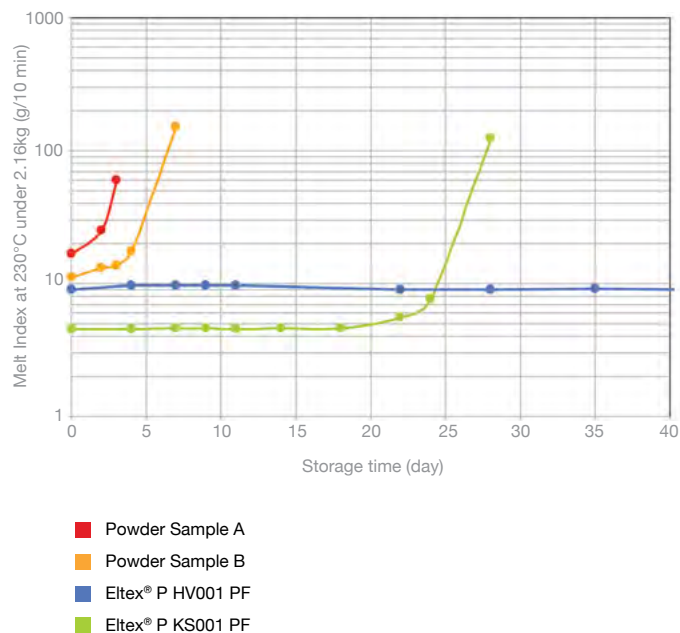
Additive	Type	Dose (weight %)
Primary AOx	Phenolic	0.25 - 0.5
Secondary AOx	Phosphite	0.25 - 0.5
Acid scavenger	Calcium stearate	0.05 - 0.1

## Thermal Stability and Storage of Eltex<sup>®</sup> P Powders

Due to our specific manufacturing process, Eltex<sup>®</sup> P powders demonstrate good stability under normal storage conditions. The graph below shows the stability of homopolymer and ethylene random copolymer Eltex<sup>®</sup> P powders at 70°C. There is no change in the melt flow index of the powder after more than 20 days for Eltex<sup>®</sup> P KS001PF and after more than 50 days for Eltex<sup>®</sup> P HV001PF.

This is generally not the case with competitive powders produced with standard catalysts.

### Thermal stability of powder at 70°C



## Special Care

Powders should be stored either in their original bags in an area with normal ventilation and protected from excessive sunlight exposure or in silos with vents. The maximum recommended temperature is 50°C.

Although Eltex® and Eltex®P powders are non-explosive as received, this does not rule out a potential explosion hazard. An explosion can occur if fines are left to accumulate over long periods of time and are exposed to an ignition source. Therefore, good housekeeping is mandatory for the safest product utilization.

All leaks in conveying equipment must be sealed and areas above and around extrusion equipment should be swept and cleaned as needed.

If the powders are conveyed pneumatically, special care should be taken to prevent dust explosion or ignition from static electricity. Silos and transport equipment should be earthed and no pipe should be made of non-conductive material. The rate of pneumatic conveying should be maintained inferior to 25 m/s. Powder concentration in air should not exceed 10g/m<sup>3</sup> air. Storage and handling systems should be inspected regularly for possible accumulation of fines.



INEOS O&P Europe Sarralbe site

## About us

INEOS is one of the world's largest chemical companies, founded in 1998. INEOS Olefins & Polymers Europe is a leading producer of olefins and polyolefins.

**INEOS Olefins & Polymers Europe** offers a full range of high value polyolefins solutions for market applications such as food and industrial packaging, pipe and automotive through dedicated sales, and technical service teams.

INEOS is a safe and environmentally responsible company. We are engaged in developing our sustainable agenda to improve our operations and to implement sustainable solutions for our customers. This includes products that offer lightweighting, energy efficiency, durability (extended lifetime) or conservation of resources. We care.



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