

Polymer Add (Thailand) Co.,Ltd.

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TECHNICAL DATA SHEET

HIGH-DENSITY POLYETHYLENE (HDPE)- MICRONISED POLYMER-BASED FUNCTIONAL FILTRATION MEDIA GRADE

1. PRODUCT IDENTIFICATION

Item	Description
Product Name	High-Density Polyethylene (HDPE)- Micronised
Product Group	Polymer-Based Functional Filtration Media
Base Polymer	High-Density Polyethylene
CAS No.	9002-88-4
EC / EINECS No.	618-455-3
HS Code	3901.20.00

2. PRODUCT DESCRIPTION

Micronised High-Density Polyethylene (HDPE) – Functional Filtration Media Grade is a polymer-based filtration material engineered for use as a sacrificial filtration and polishing medium in high-purity liquid processing systems where permeability stability and pressure-drop control are critical.

The product is produced by micronizing HDPE resin into a controlled particle-size powder designed to form a mechanically stable, low-compressibility filtration cake suitable for pressure-leaf, precoat, and body-feed filtration systems.

The chemical identity of polyethylene remains unchanged. Only the physical form and particle-size architecture are modified to achieve predictable filtration performance without introducing inorganic contaminants.

3. BASE POLYMER – KEY CHARACTERISTICS (REFERENCE ONLY)

The following properties describe the parent HDPE resin and are provided solely for material traceability and regulatory reference. They do not represent the functional filtration performance of the micronised material.

Property	Typical Value
Polymer Type	High-Density Polyethylene
Density	~0.95 g/cm ³
Melting Range	~130 – 135 °C
Chemical Nature	Non-ionic, inert thermoplastic
Crystallinity	High
Regulatory Status	REACH compliant; TSCA listed

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4. PHYSICAL PROPERTIES (MICRONISED FILTRATION FORM)

Property	Typical Value / Description	Test Method
Appearance	White to off-white free-flowing powder	Visual
Odor	Odourless	Sensory
Bulk Density	0.40 – 0.60 g/cm ³	Tapped Density
Solubility in Water	Insoluble	Visual Observation
Chemical Nature	Non-ionic, chemically inert	—
Ash Content	Very low (polymeric material)	Furnace Method

5. PARTICLE SIZE DISTRIBUTION

(Laser Diffraction – Micronised Grade)

The particle size distribution is engineered to maintain open cake structure and permeability stability under filtration pressure.

Parameter	Typical Value
D10	~5 – 8 µm
D50	20 – 30 µm
D90	~70 – 100 µm
D99	< 250 – 300 µm
PSD Character	Engineered, unimodal, filtration-optimized

6. FUNCTIONAL PERFORMANCE CHARACTERISTICS

- Forms a rigid, low-compressibility filter cake
- Maintains stable permeability under higher pressure differentials
- Supports longer filtration cycles with controlled ΔP rise
- Suitable for continuous or high-throughput filtration systems
- Introduces no mineral ash or inorganic ionic contaminants
- Fully removed after filtration as a sacrificial process material

7. TYPICAL APPLICATIONS

Industry / Process	Application
Plasticiser Processing	Polishing filtration of DINP, DIDP, DOTP
High-Purity Oils	PAO oils, transformer oils
Electrical & Electronic Fluids	Filtration requiring long cycle stability
Specialty Chemicals	Pressure-leaf filtration of low-viscosity liquids
Continuous Filtration Systems	Applications requiring stable flow and low compaction

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8. THERMAL & PROCESS CONSIDERATIONS

- Stable under typical non-aqueous filtration temperatures
- Higher stiffness and crystallinity reduce cake deformation
- Suitable for higher pressure filtration environments
- Not intended for melt processing or incorporation into final products

9. HEAVY METALS (TYPICAL LIMITS)

Element	Typical Limit
Lead (Pb)	≤ 5 ppm
Cadmium (Cd)	≤ 1 ppm
Mercury (Hg)	≤ 1 ppm
Arsenic (As)	≤ 1 ppm

10. REGULATORY INFORMATION (NON-FOOD USE)

Regulation	Status
REACH (EU)	Polymer – exempt from registration
TSCA (USA)	Listed
RoHS / WEEE	Compliant

11. PACKING & STORAGE

Item	Description
Packing	20–25 kg laminated paper bags with PE liner
Shelf Life	24 months from date of manufacture
Storage	Cool, dry place; sealed packaging

12. PRODUCT DISCLAIMER

This product is intended for **industrial use only** as a polymer-based functional filtration medium. Data presented are typical values and not specifications unless agreed in writing. Filtration performance depends on system design, operating conditions, and dosage. Users are responsible for evaluating suitability for their specific application.

Month of Creation: January 2026

Month of Review: January 2028