

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriakiat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250
Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280
Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



HDPE WAX

SPECIFIC BENEFITS OF THIS PRODUCT

High-density polyethylene (HDPE) wax differs structurally from LDPE and LLDPE wax due to its higher crystallinity, linear molecular structure, higher hardness, and higher softening/melting range. These characteristics translate into distinct processing and performance advantages in selected industrial applications.

This article focuses only on the following segments:

Compounding	Inks & Pigments
Masterbatch	Plastics (PVC, PE, PP)
Powder Coatings	Rubber & Elastomers

Plastics

External & Internal Lubricant in PVC, PE, PP

What Makes HDPE Wax Distinct? - Compared to LDPE / LLDPE wax

Higher drop point (100–120°C typical)	Higher hardness
Lower tackiness	Better migration resistance
Stronger metal release behavior	

Unique Advantages of HDPE Wax

In PVC Processing:

- Superior *external lubrication* without excessive plate-out
- Better mold release in rigid PVC profiles
- Reduced die build-up in extrusion
- Higher processing temperature stability

LDPE wax, being softer, may improve fusion but tends to increase surface tack and plate-out under high shear.

In PE & PP Processing:

- More effective slip control without softening the matrix
- Better dimensional stability in injection molded parts
- Reduced sticking in high-speed extrusion lines

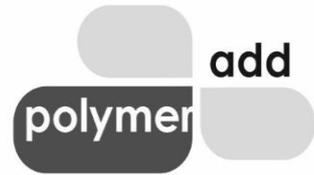
HDPE wax provides lubrication without plasticizing the polymer — a critical distinction.

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriakiat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250

Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280

Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



Masterbatch

Flow Modifier & Carrier for Pigments / Fillers

Structural Benefit

HDPE wax's higher crystallinity provides:

- Better melt strength at elevated temperatures
- Lower bleeding compared to LDPE wax
- Cleaner dispersion profile

Unique Functional Edge

- Superior pigment wetting at high processing temperatures
- Reduced die drool in colour masterbatch extrusion
- Improved pellet hardness
- Better powder flow in micronized grades

LDPE wax improves softness and compatibility, but HDPE wax improves structural stability and dispersion consistency — especially in high filler systems.

Compounding

Processing Aid for Extrusion & Injection Molding

Why HDPE Wax is Preferred in High-Shear Systems

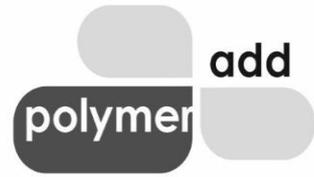
- Higher thermal resistance
- Lower volatility
- More consistent melt viscosity control

Specific Advantages

- Improved torque reduction without excessive melt thinning
- Reduced screw slippage
- Cleaner mold release at higher temperatures
- Reduced surface defects (flow lines, shark skin)

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriakiat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250
Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280
Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



LDPE wax may provide lubrication, but HDPE wax maintains processing window stability at elevated barrel temperatures.

Powder Coatings

Matting & Flow Control Agent

This is one of the most technically distinct applications.

HDPE Wax Performance Edge

- Higher surface hardness
- Controlled surface migration
- Better scratch resistance

Unique Benefits

- Uniform matting without soft gloss variation
- Improved mar resistance
- Reduced blocking during storage
- Enhanced anti-scratch performance

LDPE wax tends to soften coatings; HDPE wax enhances durability.

Inks & Pigments

Surface Modifier & Dispersion Aid

HDPE Wax Contribution

- Hard, crystalline micro-particles
- Controlled surface bloom
- Better abrasion resistance

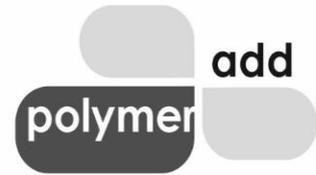
Distinct Performance

- Improved rub resistance in printing inks
- Enhanced scuff resistance in packaging
- Better anti-setoff performance
- Controlled gloss reduction

LDPE wax improves flexibility; HDPE wax improves durability and hardness.

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalaremprikiat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250
Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280
Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



Rubber & Elastomers

Processing Aid & Anti-Blocking Agent

Why HDPE Wax Stands Out

- Higher melting range prevents early softening
- Lower migration at service temperatures
- Improved mold release

Unique Advantages

- Better extrusion stability in EPDM & TPE
- Reduced sticking in compression molding
- Improved surface smoothness
- Controlled anti-blocking without softening the compound

LDPE wax may increase flexibility but can reduce surface hardness in elastomer systems.

Summary Comparison

Property	HDPE Wax	LDPE Wax	LLDPE Wax
Crystallinity	High	Medium	Medium
Hardness	High	Low	Medium
Drop Point	Higher	Lower	Moderate
Tackiness	Low	Higher	Moderate
Thermal Stability	Superior	Moderate	Moderate
Best For	Structural lubrication, durability	Flexibility, compatibility	Balanced applications

Where HDPE Wax is Clearly Superior

- ✓ High-temperature PVC extrusion
- ✓ Rigid masterbatch systems
- ✓ High-speed compounding
- ✓ Scratch-resistant powder coatings
- ✓ Abrasion-resistant inks
- ✓ Anti-blocking in high hardness elastomers