# POLYMERS

**OUR BRANDS**

- **Sabic**

- 
- **tasnee**

- **lyondlbasell**

- **OQ(luban)**



- **innoplus**



- **borouge**



- **reliance**




- **marlex**




- **LG chem**




- **octal**




- **loterene**




- **dow**




- **equate**




- **advance**




- **jade**




- **wankai**

OUR PRODUCTS

## LDPE

LDPE (Low-
Density Polyethylene) is a soft, flexible, and lightweight plastic made from the polymerization of ethylene. It is known for its low density (0.910–
0.940 g/cm³) and high ductility, making it ideal for:
Plastic bags
Film wraps
Squeeze bottles
Wire and cable insulation
Liners and coatings

## GRADES

**sabic 4023**
**sabic 4024**
**sabic 4025**
**sabic 2023**
**tasnee 4025**
**tasnee 1925as**
**borouge FT6236**

## LLDPE

LLDPE stands for Linear Low-
Density Polyethylene, a widely used thermoplastic polymer in the polyethylene family.

### 🔍 Key Characteristics of LLDPE:

Linear structure with significant short-chain branching
Density: Typically ranges from 0.915 to 0.935 g/cm³
Toughness & Flexibility: Excellent impact and puncture resistance

Chemical Resistance: Good resistance to acids, alcohols, and bases
Clarity: Lower than LDPE; can be hazy but srong.

**📦 Common Applications:**

Packaging films (stretch film, shrink wrap)
Liners and bags (trash bags, agricultural films)
Toys and lids
Pipes and tubing
Cable insulation

## GRADES

Sabic 218wj
Sabic 118wj
Sabic 222wj

## HDPE INJECTION

HDPE Injection refers to High-
Density Polyethylene (HDPE) resin that is specifically formulated for injection molding applications. It's a widely used thermoplastic due to its high strength-to-density ratio, chemical resistance, and ease of processing.
A type of HDPE resin optimized for injection molding.
It has properties like:
High rigidity
Good dimensional stability
Fast cycle times
Excellent impact resistance
Supplied as pellets for melting and molding into shapes.

GRADES

Sabic 80064s
SABIC 80063s
Tasnee 2050
Innoplus 1010j
Dow kt10000

HDPE BLOW

HDPE Blow refers to High-
Density Polyethylene (HDPE) resin grades that are specifically formulated for bl ow molding applications. This is a key processing method used to manufactur e hollow plastic parts, especially bottles, containers, and tanks.
🧪 What is HDPE Blow Molding Grade?
A type of HDPE with:
High molecular weight (HMW)
Excellent melt strength
Good environmental stress crack resistance (ESCR)
Moderate stiffness and impact balance
These characteristics make it ideal for forming thin-walled, durable, and leak-proof containers.

## GRADES

**Sabic 5429**
**Marlex 5502**
**Lotrene 5502**
**Equate 6200**
**Innoplus 6600**

## HDPE FILM

HDPE Film refers to High-
Density Polyethylene grades designed specifically for film extrusion —
a process used to make thin, strong, and high-
stiffness plastic films. These films are widely used in packaging, agriculture, ret ail bags, and hygiene applications.
🧪 What is HDPE Film Grade?
HDPE film grades are characterized by:
High crystallinity → gives strength and stiffness
Low melt flow index (MFI) → needed for film blowing
Excellent moisture barrier
Good chemical resistance
High tensile strength at low thicknesses
☑ Films made from HDPE are thin but durable, with natural haziness and a "c rinkly" feel.

## GRADES
**Sabic 0952**

### HDPE BLACK

HDPE Black refers to High-
Density Polyethylene resin that has been pigmented with carbon black or othe
r black masterbatch additives. It is used in applications where UV resistance, o
pacity, and durability are essential.
🖍️ What Is HDPE Black?
It is standard HDPE resin blended with:
Carbon black pigment (typically 2–3% by weight)
Optional additives: UV stabilizers, antioxidants, processing aids
☑ Carbon black provides:
Color uniformity
UV protection (absorbs UV rays, preventing polymer degradation)
Improved weatherability
Increased thermal stability

## GRADES
**Borouge p100**

### PP-RAFFIA

PP-RAFFIA (Polypropylene Raffia)
A synthetic fiber made from polypropylene (PP), used in woven sacks, bags, an
d ropes.
🔬 Chemical Properties (Short):
Polymer type: Thermoplastic (polypropylene)
Chemical formula: $(C_3H_6)_n$
Melting point: ~160–170 °C
Density: ~0.90–0.91 g/cm³
Water absorption: Very low
Chemical resistance: Excellent (acids, bases, oils)
UV resistance: Poor without additives (can degrade)
☑ Key Features:
Strong, lightweight, recyclable
Water & chemical resistant

Widely used in packaging and agriculture

## GRADES

Sabic 500p
Advance 1102k
marlex
lyondellBasell
reliance
octal
luban

## PP COOL IMER

PP-Copolymer (Polypropylene Copolymer)
A type of polypropylene made by polymerizing propylene with small amounts of other monomers (usually ethylene) to improve material properties.

🔬 Chemical Properties (Short):

Polymer type: Thermoplastic copolymer
Composition: Mainly propylene with ethylene comonomers
Melting point: ~130–160 °C (lower than homopolymer)
Density: ~0.89–0.91 g/cm³
Impact resistance: Higher than polypropylene homopolymer
Flexibility: More flexible and less brittle
Chemical resistance: Good (similar to homopolymer)

☑ Key Uses:

Flexible packaging films
Automotive parts
Consumer goods
Medical devices

## GRADES

**Sabic 412k**
lyondellBasell 548s
boroge 6561

## PP-LAMINATION

☑ PP Lamination (Polypropylene Lamination)

A process where a thin layer of polypropylene (PP) film is bonded to another material (paper, plastic, fabric) to enhance strength, durability, and moisture re sistance.

◇ Key Features:

Adds waterproofing and tear resistance
Improves surface finish and printability
Lightweight and flexible
Common in packaging, labels, and printed materials

◇ Common Uses:

Food packaging (snack bags, wrappers)
Labels and stickers
Flexible packaging films
Laminated paper products

## GRADES

Sabic 519a
Sabic 520p

## PPR

☑ PPR (Polypropylene Random Copolymer)
A type of polypropylene made by randomly copolymerizing propylene with s
mall amounts of ethylene, giving it improved flexibility and heat resistance.

🔬 Key Properties:

Heat resistance: Up to ~95°C continuous use
Flexibility: More flexible than PP homopolymer
Chemical resistance: Good against many acids, alkalis, and solvents
Durability: High impact resistance, good toughness
Density: ~0.9 g/cm³

🏭 Common Uses:

Hot and cold water pipes (plumbing)
Heating systems
Industrial fluid transport

**GRADES**
**RP 100**
**RP 200**

PET

☑ PET Resin (Polyethylene Terephthalate Resin)
A thermoplastic polymer resin widely used for manufacturing plastic bottles, c
ontainers, and fibers.

🔬 Chemical Properties (Short):

Polymer type: Polyester

Chemical formula: $(C_{10}H_8O_4)_n$
Melting point: ~250–260 °C
Density: ~1.38 g/cm³
Strength: High tensile strength and stiffness
Barrier properties: Good resistance to gases and moisture
Recyclability: Highly recyclable (common #1 plastic)

☑ Common Uses:

Beverage bottles (water, soda)
Food packaging trays
Synthetic fibers (clothing, carpets)
Films and sheets

## GRADES

JADE
OCTAL
RELIANCE
WKNI

## FILLER

☑ Filler Masterbatch
A concentrated mixture of fillers (like calcium carbonate, talc, or silica) disperse d in a polymer carrier resin, used to improve properties and reduce the cost of plastic products.

◇ Purpose:

Reduce material costs by replacing some polymer with cheaper fillers
Improve mechanical properties (stiffness, hardness)
Modify processing characteristics (flow, shrinkage)
Enhance surface finish or opacity

- Common Fillers Used:

Calcium Carbonate ($CaCO_3$)
Talc
Wollastonite
Clay

- Applications:

Plastic packaging
Automotive parts
Construction materials
Household goods

## PVC

PVC" typically stands for Polyvinyl Chloride, which is a widely used synthetic pl astic polymer. Here's a quick overview:

Common Uses:

Pipes and fittings (especially in plumbing and construction)
Electrical cable insulation
Window frames and doors
Vinyl flooring
Medical equipment (like IV bags and tubing)
Packaging materials

Types of PVC:

1. Rigid PVC (uPVC) –
Unplasticized, used in construction, pipes, window frames.

1. Flexible PVC – Plasticized, used in electrical cables, clothing, hoses.

Key Properties:

Durable and long-lasting
Chemical and water resistant
Lightweight
Cost-effective
Can be made flexible with plasticizers