Polymer modification – GPO Business Model

STEP 1: INPUT RAW MATERIALS

GRAFTING MONOMERS
- MALEIC ANHYDRIDE (MAH)
- GLYCIDYL METHACRYLATE (GMA)
- METHYL METHACRYLATE (MMA)
- ACRYLIC ACID (AAc)
- BUTYL ACRYLATE (BA)
- VINYL ACETATE (VA)
- DIETHYL MALEATE (DEM)
- ACRYLAMIDE (AAm)
- ACRYLONITRILE (ACN)

VIRGIN POLYMERS (GRANULES / POWDER) - NATURAL COLOR
- All types - different MFI / natural postindustrial scrap (no pigments)
- We are using different type of MFI according to the client request and need.
  - LDPE
  - HDPE
  - LLDPE
  - PP
  - EVA
  - EBA
  - POE
  - SAN
  - OTHERS.

WAXES (GRANULES)
- Variety of monomers can be grafted on any kinds of polyolefin waxes, low molecular weight (including microcrystalline, fisher tropsch etc.)
### Step 2: Graft Polymer Form of Products

**Grafting**
- High grafting degree, up to 3%
- Lower VOC
- Blocked grafting (The material can be safely stored for at least 36 months)

**Alloying**
- Co-continuous nano-structured polymeric alloys.
  - Can be used as additive or standalone composite.

**Crosslinking**
- Irreversible
  - PEX-a (peroxide)
  - PEX-b (Silanole)
  - PEX-d (Azo)
- Thermoreversible
  - Ionic crosslinking
  - Covalent bonding
  - Diels – Alder reaction

**Synthesis**
- HFFR (based on Boron Chemistry)
  - Product form available: Liquid & On Polymer Carrier
- HBP (hyper branched polymers - Dendrimers)
  - Product form available: Liquid & On Polymer Carrier
- Oxazolines (development stage)
- Poss (development stage)
- Free stable radical (TEMPO)
  - Product form available: Liquid & On Polymer Carrier

**Porous**
- Porous Polymer Carrier Graftapor™
  - Porous 70% porosity
  - No traces of blowing agents

Product forms available:
- LLDPE 02070
- PP 02070
- EVA 00270
- EBA 15070
- PS 01070
- SEBS 02070
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FINAL FORM OF OUR PRODUCTS

TRADE MARKS

GRAFTABOND™ (Graft-Polymer)

GRAFTALEN™ (MB, X-link)

GRAFTALOY™ (Block-copolymers)

GRAFTAMID™ (Block-copolymers PO-PA)