Manufacture of Plastic Films, HDPE and Thermoset Plastics

Plastic film is a thin continuous polymeric material. Thicker plastic material is often called a “sheet”. These thin plastic membranes are used to separate areas or volumes, to hold items, to act as barriers, or as printable surfaces.

Plastic films are used in a wide variety of applications. These include: packaging, plastic bags, labels, building construction, landscaping, electrical fabrication, photographic film, film stock for movies, video tape, etc.
High-density polyethylene (HDPE) or polyethylene high-density (PEHD) is a polyethylene thermoplastic made from petroleum. It is sometimes called "alkathene" or "polythene" when used for pipes. With a high strength-to-density ratio, HDPE is used in the production of plastic bottles, corrosion-resistant piping, geomembranes, and plastic lumber.
Thermoset, or thermosetting plastics are synthetic materials that strengthen during being heated, but cannot be successfully remolded or reheated after their initial heat forming. This is in contrast to thermoplastics, which soften when heated and harden and strengthen after cooling. Thermoplastics can be heated, shaped and cooled as often as necessary without causing a chemical change, while thermosetting plastics will burn when heated after the initial molding.
Additionally, thermoplastics tend to be easier to mold than thermosetting plastics, which also take a longer time to produce (due to the time it takes to cure the heated material).

Some of the astonishing fundamentals of the book are salient features of contemporary, technology and current research, three basic processes: advances, modern polyethylene, processes using high yield catalysts, solution polymerization processes, polyolefins, low density polyethylene, polyvinylidene chloride (PVDC),
vinyl chloride/vinyl acetate copolymers, polyvinyl acetate, polyvinyl alcohol, physical and chemical properties, manufacturing methods, extrusion of film, slit die extrusion (flat film extrusion), comparison of blow and cast film processes, water cooled polypropylene film, calendaring, solvent, casting, casting of regenerated cellulose film, orientation of film, expanded films, plastics net from film,
unsaturated polyester and vinyl ester resins, thermoset polyurethanes, guidelines and theories in compounding polyurethane elastomers, compounding for thermoset polyurethane elastomers, cellulose and cellulose derivatives, thermoplastic polymers etc.
Market Outlook

the Global Plastic Films and Sheets Packaging Market is valued at $92.4 billion in 2015 and is expected to reach $139.2 billion by 2022 growing at a CAGR of 6% from 2015 to 2022. Rising demand for bi-axially oriented films and increased demand for bio plastic materials are the key drivers of the market.
Total export of plastic and plastic products from India stood at US$ 449.72 million in 2015. The Indian plastic comprises of more than 2,000 exporters. The India plastic industry has grown by 13% annually in the last five years and a similar growth rate is expected to continue in 2016-17.
The size of industry is expected to reach Rs. 1.7 lakh crore from Rs. 1.20 lakh crore last year.

High Density Polyethylene (HDPE) Market size was valued at approximately USD 60 billion in 2015 with gains of over 4% CAGR between 2016 and 2024.
High Density Polyethylene (HDPE) Market

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US demand for plastic film is expected to grow 1.9% pa to 16 billion in 2016, with a market value of US$19 billion. The major trend driving the thermosetting plastics market is the growing demand for Developing countries like India, China and Brazil, and is reflected in growing production of thermosetting plastics: in 2015 production of thermosetting plastics amounted to 34.99 million tonnes. Global thermosetting plastics production is currently estimated to be 34.99 million tonnes in 2015 and is expected to reach 41.96 million tonnes by 2020 showing a compound annual growth rate of 3.7%. 
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