



Linear low density polyethylene (LLDPE) is a thermoplastic used mainly in the film sector. More than 80% of global LLDPE is used as film for food and non-food packaging, shrink/stretch film as well as non-packaging uses. Other uses include injection moulding products and wire and cable.

SUPPLY/DEMAND

LLDPE demand and profitability in Europe have not returned to the heady days of 2007 and polyethylene (PE) production in Europe remains reduced to accommodate lower volumes. Cracker output in Europe has fallen as PE demand has weakened, and is estimated to be running at 80-85%.

Capacity additions in the Middle East over the past three years have exerted more pressure on European producers, who are moving increasingly towards specialties as most imports are focused on commodity grades. Europe remains a net importer of LLDPE.

Upcoming capacities in Asia are also expected to impact Europe as product will need to find a home. ExxonMobil's new 650,000 tonne/year LLDPE plant in Singapore is on line, but Asian demand has been weaker than expected and GDP forecasts for China have been cut to 7.5%. A second 650,000 tonne/year plant for ExxonMobil is also due onstream in 2012.

Metallocene-based LLDPE (MLLDPE) is making more inroads into Europe and South Korean MLLDPE is now being offered. MLLDPE is expected to continue taking volumes from other LLDPE sectors as downgauging - making thinner films with improved strength - becomes increasingly important. Unconfirmed problems at major MLLDPE producer ExxonMobil's plant in France in the second quarter of 2012 have led to MLLDPE availability

remaining balanced in June, but supply of other PE grades is long because of very weak demand based on expectations of lower prices.

In quarter four 2011, LLDPE was oversupplied in Europe, and even specialty grades saw their prices knocked down as sellers scrambled for market share.

PRICES

The weak euro has meant that 2012 has seen record high crude oil and naphtha prices, keeping naphtha-based producers under constant pressure. But, by June, crude oil and naphtha prices had begun to fall.

PE producers' margins have been weak but May's fall in naphtha prices led to a big increase in profitability at crackers and some sources feel that PE production has been too high for the current low level of demand.

By early June, producers were offering lower PE spot prices in line with falling feedstock costs. The June ethylene contract settled down by €120/tonne.

Prices for all LLDPE grades have fallen, as sellers are unwilling to relinquish market share. C8 (octene grade) LLDPE remains in close competition with MLLDPE, and even though Europe's major C8 producer sees a strong market scenario, prices are expected to fall in line with all LLDPE grades, if market share is to be maintained.

TECHNOLOGY

LLDPE is produced by adding alpha-olefins (butene, hexene or octene) during ethylene polymerization to produce a resin with a similar density to low density polyethylene (LDPE), but the linearity of high density polyethylene (HDPE).

Solution, slurry or gas-phase processes are used and many processes can swing between LLDPE and HDPE production, although plants tend to be dedicated to one or the other. The introduction of metallocene catalysts has enabled the production of resins with narrow molecular

weight distribution, offering the product much improved physical properties.

OUTLOOK

The European debt crisis is expected to limit PE demand, and sources do not expect strong growth, particularly for commodity grades. MLLDPE is expected to grow more strongly, as downgauging will remain essential for environmental reasons.

Two very large buyers are warning suppliers that prices of specialty products will have to drop in line with the wider LLDPE market, however, if they are to continue to buy specialty grades. By the end of 2012, INEOS Olefins and Polymers' 230,000 tonne/year plant in Cologne, Germany, will be converted from C4 (butene grade) LLDPE to MLLDPE. Other LLDPE capacity in Europe is expected to be converted to MLLDPE.

By Elaine BurrIDGE and Linda Naylor



Find out more about our polymers coverage, request a sample report >>