FOOD Forum

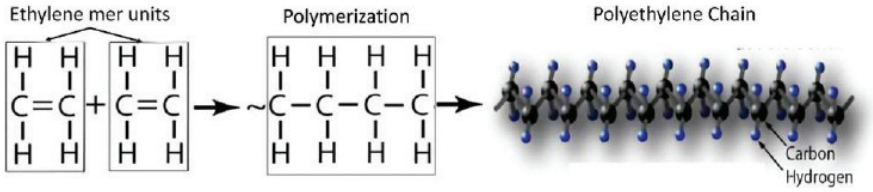
PORT PLASTICS

POLYETHYLENE
THE THERMOPLASTICS WORKHORSE

Polyethylene (PE) is the most commonly used thermoplastic for **FOOD PROCESSING AND CONVEYANCE EQUIPMENT**, and is most diverse by application usage

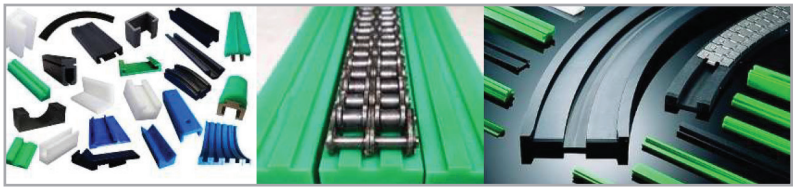
Polyethylene,® (PE) is an organic polymer made by the polymerization of monomer subunits $(C_2H_4)_n$. Essentially it's mixture of similar polymers of ethylene, with various values of n. The values of (n) create avariety of formulations to suit many applications within Food and Conveyance Equipment. PE properties uniquely align to check all performance criteria required for dynamic and static components. Commonly specified grades are Low Density (LDPE), High Density (HDPE), and Ultra High (UHMW-PE)

POLYETHYLENE PROCESS



Three key chemical characteristics that define PE formulations are molecular weight, the type of chemical chain, and the length of chemical chain. For example LDPE is a branch chain with a molecular weight of 500K/Amu. HDPE is a linear chain with a molecular weight >2M/Amu, and UHMW-PE is a long linear chain ranging 3.5M – 7.5M/Amu.

TYPICAL COMPONENTS



Polyethylene (PE) grades deliver big performance on a small budget. Providing excellent chemical and impact resistance, low coefficient of friction, lightweight, extreme abrasion resistance, weldable, and offer near-zero moisture absorption. These properties are why Polyethylene is universally used for fabricated parts and components, and specified for use within Food and Conveyance Industry.

SEE DETAILS IN THE CHART BELOW.

	Heat Deflection @264psi	Chemical Resistance	Impact Resistance	Thermoformable	Abrasion Resistance	Staic COF	Crystallinity	Density g/cm3
LDPE	160	Excellent	N/A	Superior	Poor	N/A	Poor	0.910-0.925
LLPE	170	Excellent	No break	Excellent	Moderate	>.3	Moderate	0.91-0.94
HDPE	176	Superior	1.3	Good	Good	.20 - .29	Good	0.941-0.965
HMWPE	178	Superior	1.3	Moderate	Excellent	.20 - 27	Excellent	0.941-0.965
UHMW-PE	180	Superior	No Break	Poor	Superior	.15-.20	Superior	0.95 Min

CHART BY DS

CONTACT YOUR NEAREST PORT PLASTICS SALES OFFICE FOR ALL FOOD PROCESSING OR CONVEYANCE RELATED PLASTICS!