List of factors to be considered in selecting polymeric materials

**Mechanical**
- Type and magnitude of normal service stresses
- Loading pattern and time under load
- Fatigue resistance
- Allowable deflections
- Overloads and abuse; impact resistance

**Thermal**
- Normal range of operating temperatures
- Maximum and minimum service temperatures

**Environmental**
- Solvent and vapor attack
- Reactions with acids, alkalis water, etc.
- Water absorption effects
- Ultraviolet light exposure and weathering; oxidation
- Erosion by sand, rain, etc.
- Attack by fungi, bacteria, or Insects

**Electrical**
- Resistivity
- Dielectric loss
- Antistatic properties
- Tracking resistance
- Flammability
- Toxicity of additives or degradation products

**Appearance**
- Transparency
- Surface finish
- Color matching and color retention

**General**
- Tolerances and dimensional stability
- Weight factors
- Space limitations
- Expected service life
- Acceptance codes and specifications
- Environmental acceptability
- Leaching of additives
- Permeability to vapors and gases
- Wear resistance

**Manufacturing**
- Choice of process
- Method of assembly
- Finishing and decoration
- Quality control and inspection

**Economics**
- Materials costs
- Cost of capital plant: moulds, and processing machines
- Speed of production
- Number of moldings/units required
- Operating costs of component, including maintenance and fuel consumption