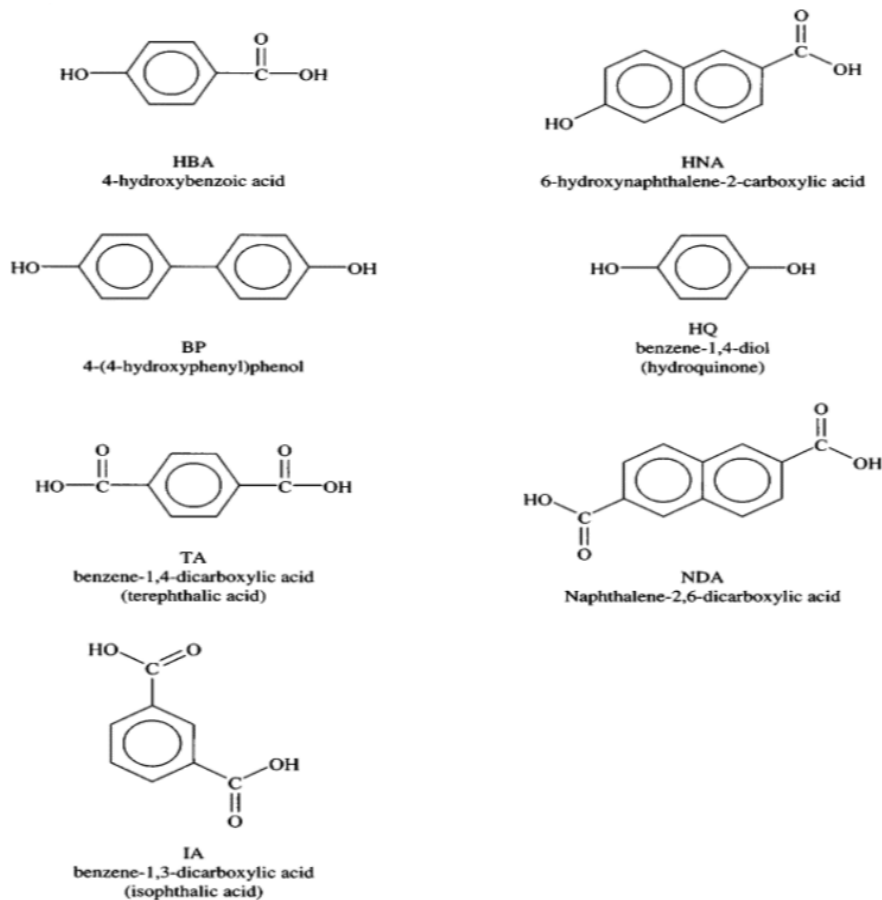


LIQUID CRYSTAL POLYMERS

Liquid crystal polymers are a special class of some crystalline aromatic polyesters based on LCP, 4-hydroxybenzoic acid and other monomers. LCP can form regions with a defined structure when in the liquid phase. However, the resolution is slightly lower than crystal. In general, LCPs have excellent thermal properties, chemical properties, high flame retardant properties and poor air quality. LCP comes in many forms, from sinterable high-temperature compounds to injection moldable compounds.



LCP Features

LCP has high temperature performance and good thermal stability. The low viscosity of sheep makes it a very attractive material for fine fabrics and surfaces. Due to the high solubility in the solid state, they have excellent stability along with high strength and hardness. They also maintain their mechanical properties even at extreme temperatures. LCP has excellent chemical resistance, does not require extraction and is biocompatible. Their flame retardant and dielectric properties make them excellent choices for electrical and electronic applications.

PROPERTIES

LCP is available in a **variety** of **specifications** for textile and composite **material processing**, **offering** new **options** in design and **product** selection. **LCP** has **advantages** in applications requiring high strength, vibration damping, low **water** absorption and low CTE. **LCP** is a high modulus thermoplastic matrix fiber **suitable** for applications requiring **resistance**, **excellent performance** at high **temperatures** and low **water absorption**.

Property	Units	LCP 1	LCP 2
Density	g/cc	1.4	1.6
Water absorption 24h	%	0.01–0.02	<0.1
Glass transition temperature	°C	110	160–90
HDT at (0.46MPa or 66 psi)	°C	—	—
HDT at (1.8MPa or 264 psi)	°C	105–187	270–300
Melting point	°C	212–280	320–360
Tensile strength	MPa	140–182	135
Tensile elongation at break	%	1.7–3.4	1.6
Flexural modulus	GPa	9–12	13.4
Impact strength, notched, 23°C	J/m	3–5	95
Processing temperature	°C	225–295	330–380

Applications

LCP fibers bring unique solutions to industrial applications. **Safety** for chemicals **often** allows the **production** of chemically resistant **products** and **seals**. Users of protective **clothing** such as gloves and **cover-ups** benefit from cut and **puncture** resistance, **heat** resistance, **excellent bend/fold resistance**, and durability **that can withstand** multiple wash/dry **cycles**, even **with** bleach.

Ropes and Rope Cables

LCP is a **solution that delivers** performance in critical military, **military** and rope and cable applications. High strength **and** no **slip ensure that high-performance** ropes are stable **during long transportation**. Superior abrasion resistance, excellent moisture resistance, and **excellent performance in a wide range** of temperature and chemical **environments** provide solutions to industrial wear and degradation problems **encountered in current** fiber products. **LCP** is **the best** candidate **to replace** steel and stainless steel **structures**. Archers **utilize** **bowstrings** made from **LCP** fiber. **Products and Services**

Electronic Support Structures

LCP is **the best material** for printed circuit **board**, fiber optic **reinforcements** and conductor reinforcements. **Its high** dielectric strength **combined** with **high** temperature resistance and **excellent** moisture resistance **provides a** new level of electrical **performance** in current **protection**. This combination **provides** a unique fiber for **electrical applications with excellent stability and low CTE**.