

The Dual Cure (UV or Heat or Both) DC Product Line

Our Dual Cure (DC) products find a growing number of applications as adhesives, coatings and sealants. All our Dual Cure materials are one component materials. They are cured by either UV radiation, Heat, or a combination of both. This feature enables curing in partially or fully shaded regions of the device.

The DC line includes both flexible and rigid products with a refractive index from 1.33 to 1.50, with relatively big selection close to the index of silica. These include DC-1455 (flexible, index=1.448 at 950 nm) and DC-1455-HM and (Rigid, index=1.451) The DC line also includes high bond strength products like DC-150 (flexible) and DC-1473 (rigid).

The newest members of the DC line are DC-152 (index=1.52) and DC-157 (index=1.57).

The table below includes some of the members of the DC product line.

Product	RI @ 950nm	Adhesion g/cm	Elastic Modulus MPa	Viscosity CPS
DC-133	1.330	5	3	2200
DC-136	1.366	180	9	600
DC-136-EA	1.363	150	43	1700
DC-140	1.402	270	420	4200
DC-145	1.449	1200	30	1900
DC-1455	1.449	1600	32	1700
DC-1455-HM	1.452	600	400	250
DC-1473-HM	1.470	1700	555	290
DC-150	1.478	>1000	23	1800
DC-152*	1.520	>1000	~60	~800
DC-157*	1.570	>1000	~50	~1000

* Preliminary



Typical applications include:

V-Groove Array: Bonding & cladding the fibers inside the V-Grooves, fixing the fibers externally

For bonding inside the V-grooves array, if a low index is preferred, customers can use DC-136-EA, if not customers can use DC-1455 or DC-150. If a rigid adhesive is preferred, use DC-1455-HM or DC-1473-HM. For fixing the input/output fibers use the versatile DC-150, (or the UV cured MY-150). And for rigid fixing, use DC-1455 or DC-1475.



Sealant for an Optical Component Package

The entry points of an optical fiber into the external package of a component can be sealed using one of our Dual Cured products, such as DC-1455 (when important to keep the index just below that of the silica fiber core) or DC-150. Both are very flexible, and this reduces the stress during thermal cycling or after a thermal shock, enabling higher reliability of the device. The Dual Curing feature can be used for an initial fixing of the external side of the seal. Afterwards, heat curing is used to cure the inner, shaded part of the seal.

