

# Silicones and LED's

Silicones that remove  
heat and enhance light...



Now that's a bright idea

Optics and packaging are playing an ever more important role when designing LED's that are both efficient and maintain performance over long periods of time.

Silicone elastomers have proven themselves to be versatile in solving a variety of design and production issues. ACC Silicones is an international silicone manufacturer offering high quality application based technical support with an extensive range of products and chemistry. Please consult our technicians to help with your choice of silicone.

## Optically Clear Encapsulants

ACC have a range of Gels with differing cure cycles, refractive index and physical properties. Together with harder silicone elastomers we can offer a product for most LED potting applications which require optical clarity.

Product Code	Description	Duro Shore A	Refractive Index
QGel300	Tough Silicone Gel	Gel	1.40
QGel301	Fast Cure Silicone Gel	Gel	1.40
QGel310	General Purpose Silicone Gel	Gel	1.40
QGel311	Silicone Gel Encapsulant	Gel	1.40
QGel330	Tough, Low Viscosity Silicone Gel	Gel	1.40
QGel900	Silicone Gel Encapsulant	Gel	1.43
QGel910	Silicone Gel Encapsulant	Gel	1.47
QGel920	Silicone Gel Encapsulant	Gel	1.49
QSi112	Transparent Self Bonding Encapsulant	19	1.40
QSi216	Optically Clear 2-Part Encapsulant	40	1.40
QSi218	Optically Clear 2-Part Encapsulant	59	1.40

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## Thermally Conductive Encapsulants

**Dissipating unwanted heat away from the diode to a suitable heat sink is essential for overall performance and can easily be achieved by selecting a thermally conductive silicone encapsulant.** When selecting a thermally conductive encapsulant there is always a trade off between flexibility and thermal conductivity, due to the nature of the fillers used as you raise the conductivity you will also see a rise in hardness. QSil553 has been proven to provide a good balance offering reasonable conductivity whilst retaining a low modulus and hardness, thus reducing stress during the thermal cycle.

Product Code	Description	Duro Shore A	Colour	Thermal Conductivity W/mK
QSil430	Flame Retardant	33	Grey	0.30
QSil960	Low Temp -155°C	55	Red	0.30
QSil556	2-Part Addition Cure	46	Grey	0.32
QSil550	2-Part Addition Cure	55	Grey	0.37
QSil550SB	2-Part Addition Cure Self Bonding	55	Grey	0.37
Silcoset101	2-Part High Temp Rubber	61	Red	0.37
SE2008	2-Part Addition Cure Low Viscosity	48	Black	0.50
SE2004	Thermally Conductive Silicone Encapsulant	53	Pink	0.62
QSil553	Thermally Conductive Silicone Encapsulant	32	Grey	0.68
QSil573	2-Part Thermally Conductive Encapsulant	65	Grey	0.90
SE2003	Thermally Conductive Silicone Encapsulant	80	Brick Red	1.27
AS1420	1-Part Thermally Conductive Heat Cured	67	Grey	1.38

## General Encapsulants

**For general environmental protection ACC can offer additional encapsulants and coating materials some of which are listed below.** SE 2008 and QSil 556 in the chart above have successfully been used in the manufacture of LED mega screens.

Product Code	Description	Duro Shore A	Colour
QGel331	Flame Retardant Silicone Gel	Gel	Blue
QGel320	High Strength Silicone Gel	Gel	Translucent
QSil940	Low Temp 2-Part Encapsulant	40	White
SE2005	2-Part Silicone Encapsulant	40	White
SE2006	2-Part Black Soft Encapsulant	10	Black
QSil1000	1-Part Heat Cured High Temperature	43	Red
QSil1001	1-Part Heat Cure	35	Beige
QSil550	1:1 Silicone Encapsulant	55	Grey

ACC also have an extensive range of 1-Part sealants which can be used for thin section coating, encapsulation, gasketing and general bonding and sealing applications.



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