

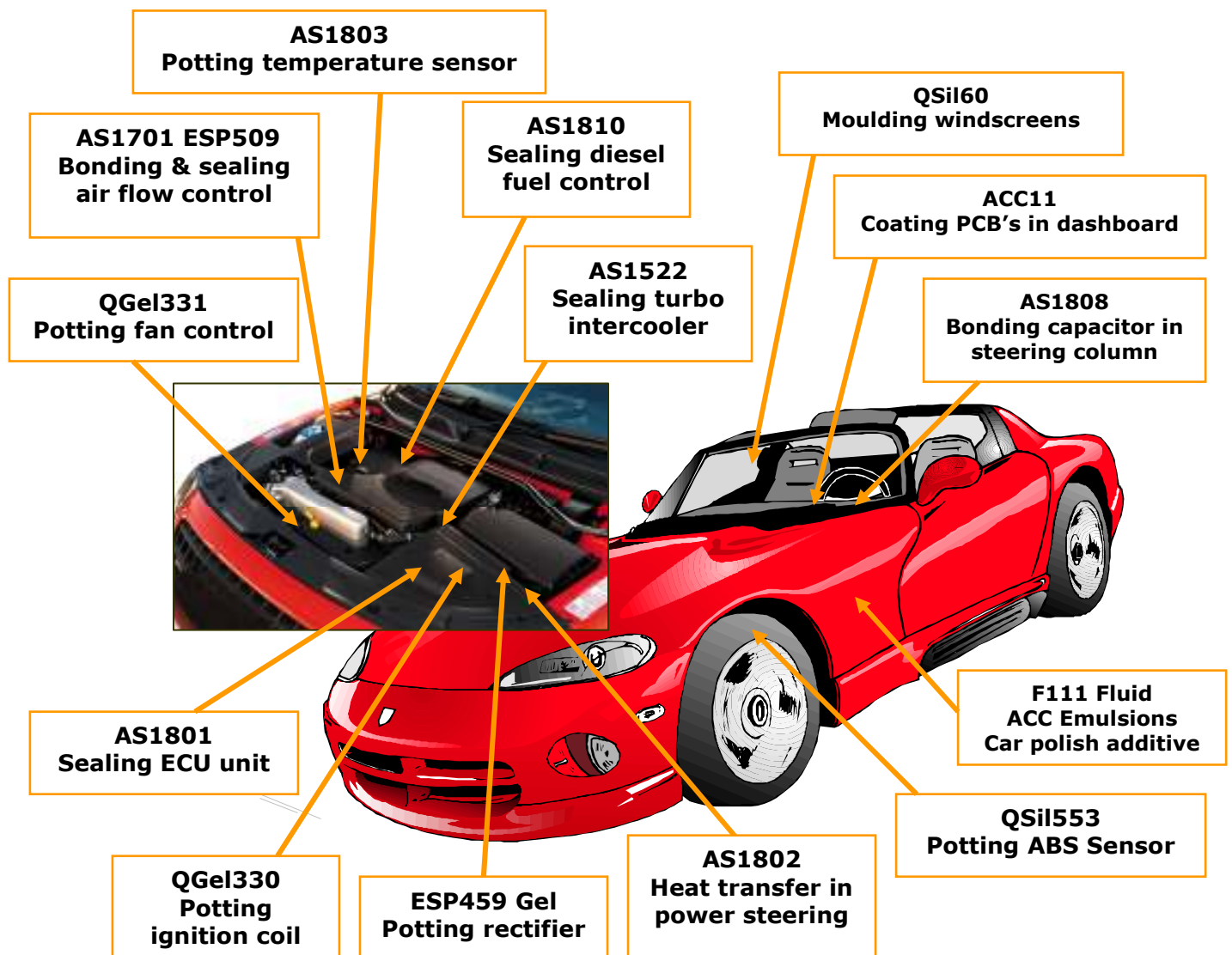
Technical Application Report

Silicones for Automotive Applications



Throughout the automotive industry silicone materials continue to find more and more applications due to their unique properties. ACC Silicones products are now being used by many of the industries leading manufacturers. Our technical teams work closely with design engineers to develop technical solutions that offer improvements in performance and productivity.

Listed below are just some of the key applications that utilise ACC Silicones materials:



There are many more automotive applications and possibilities for help with your project development please contact our technical team for product recommendations. Involving our technicians at an early stage will result in the optimum choice of material, in many occasions one product can be used to perform several functions within a component.

The chart below details the key features and benefits of the products listed above and why they were chosen.

Product	Description	Features	Benefits
AS1801	Silicone RTV black paste	Neutral cure, adhesion to plastic, fast cure	Safe with electronics
AS1802	Silicone RTV grey self levelling	Neutral cure, thermally conductive to 2.3W/mK	Excellent heat transfer
AS1803	Silicone RTV white self levelling	Neutral cure, thermally conductive to 1.55W/mK	Excellent heat transfer flows into sensor
AS1808	Silicone RTV pink paste	Neutral cure, thermally conductive to 1.79W/mK	Safe with electronics, excellent heat transfer, colour aids camera inspection
AS1810	Silicone RTV black paste	Tested for diesel fuel resistance standard and new bio-diesel	Ideal for use on diesel fuel systems
AS1701	Silicone RTV black paste	Neutral cure UL94 V-0 approved	Safe with electronics
QSi1553	Silicone encapsulant	Thermally conductive to 0.68W/mK and UL94 V-0 approved	Seals and transfers heat
QSi160	Silicone moulding rubber	High temperature resistance moderately hard 60° Shore A	Supports glass and withstands temperature
QGel331	Silicone blue gel	Low viscosity low volatile <10ppm Flame retardant UL94 HB	No electrical tracking Colour gives visual test
QGel330	Silicone gel	Low viscosity low volatile flame retardant, good physicals	No electrical tracking strong supportive gel
ESP459	Silicone gel	Balanced viscosity and fast cure speed	Fast degas and cure No bleed in component Improved productivity
ESP509	Silicone encapsulant	Thermally conductive with glass beads	
ACC11	Acrylic conformal coating	Low viscosity with good adhesion	All round protection with excellent adhesion
F111	Silicone PDMS fluid	Wide range of viscosities	Provides gloss and slip

Silicone the benefits

Silicone polymers and elastomers have particular inherent physical properties including:

- Excellent electrical properties
- Flexibility
- UV resistance
- Resistant to humidity and water
- Non-Toxic and inert
- Easy to use
- Good chemical resistance
- Wide temp range

Silicones for performance and productivity

Of particular interest is the new AS1800 series of Acetone cured silicone RTV's. This new patented technology is neutral cure which will not cause corrosion together with fast cure and excellent adhesion. Within the range are several thermally conductive options which can be used to dissipate heat as well as for sealing and bonding.

Many production engineers are able to reduce production time by using our AS1400 series of heat cured silicone adhesives together with our QSi and QGel range of encapsulants. The curing of both the encapsulants and adhesive can take place in one operation both saving time and energy.

Automotive electronics require protection from vibration, humidity and chemicals; unwanted heat needs to be dissipated without damaging the micro electronic circuitry. Careful selection of specialist fillers high purity polymers and specialist chemistry ensure all these requirements are realised.