

A new generation of fluorinated
water/oil/alcohol repellent



FLUOROTELOMER BASED C6 TECHNOLOGY

AsahiGuard® E-Series is a fluorinated water and oil repellent providing sustainable alternatives for many applications, including paper packaging, textiles, apparel, non-wovens, natural and synthetic leathers and home furnishings based on proven AGC C6 chemistry.

AsahiGuard® E-Series offers high performance properties with improved environmental and biological profiles.

What is C6?

Alternative short-chain C6 PFC versus long chain C8 PFC

C6 fluorinated polymers are proven safe for their intended use.

They have been evaluated by industry and regulators who provide data showing that they are safe and effective.

C6 fluorinated polymers cannot break down to form PFOA or PFOS.

AGC switched entirely to C6 based fluorochemistry from C8 fluorochemistry in 2012, which was 3 years ahead of the Environmental Protection Agency's 2010/2015 PFOA Stewardship Programme's timetable for the phase-out.

AsahiGuard® E-Series uses innovative AGC C6 WOR technology.

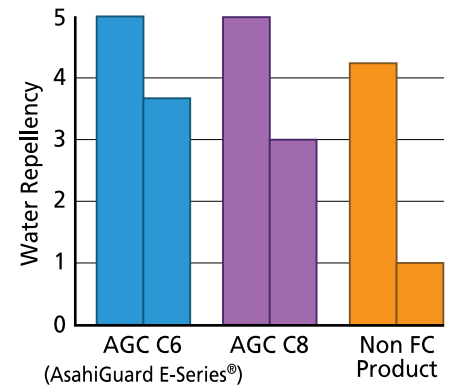
A full product range is available to meet all performance demands.

AGC carries out continuous C6 based product development and performance innovation.

AsahiGuard® E-Series ensures value and outstanding performance when used on advanced textiles.

C6 from AGC outperforms other technology

Polyamide rip-stop taffeta
LEFT BAR: HL=0 (0 washes)
RIGHT BAR: HL=20 (20 washes)



Conditions:

Fluorocarbon 12% solid with block isocyanate, melamine resin and catalyst 1d-1n, drying 120 seconds at 110°C, curing 60 seconds at 170°C

Evaluation:

Water Repellency ISO 4920:2012 (Spray Test)
Home Laundry (HL) JIS L 1092:2009 6.2.1(c)
C method, line drying before evaluation



Industrial Workwear



AsahiGuard® E-Series is ideal for tough and durable coatings for workwear in contact with oil and dirt such as in the automotive and chemical industries. Fabrics made using AsahiGuard® E-Series are comfortable to wear and highly durable for industrial laundering. Not only clothing but also accessories such as gloves, work boots and shoes can be protected with AsahiGuard® E-Series.

AsahiGuard® E-Series is not only used for technical textiles in applications like automotive noise insulation and the interior of car roofs, but also for automotive and industrial parts, as well as air and oil filters.

Outdoor Leisure & Sportswear



AsahiGuard® E-Series provides a waterproof coating for outerwear and footwear designed for activities such as skiing, rambling, mountaineering and sailing.

These waterproof characteristics mean it is widely used on tents, awnings and canopies to give protection from the elements.

Medical, Emergency Services, Police and Army



Offering water, oil and alcohol repellency AsahiGuard® E-Series is suitable for use on operation scrubs, medical gowns, surgical drapes, surgical face masks, laboratory wear and items that have to be sterilised in the medical industry.

AsahiGuard® E-Series is used on durable yet lightweight fabrics in the emergency response and military sectors.

Those working in demanding environments need the protection of tough durable, waterproof fabrics and AsahiGuard® E-Series fits the bill.

Food Packaging



AsahiGuard® E-Series can be used either at the wet end or the size press end in paper production for imparting grease proof performance to paper products. It is used in many applications in the food and drinks packaging industry. It is unscented and gives a high quality, food contact use approved, non-stick, breathable barrier to water, oil and grease and offers added durability to paper, board and moulded fibre products.

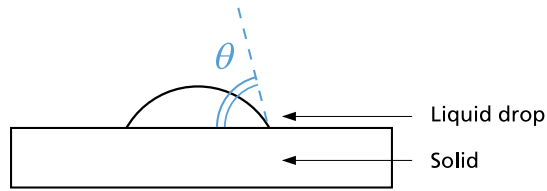
Typical applications include fast food boxes, bags and wrappers, paper tableware, dry pet food packaging, paper trays and containers.

Grade Range

Textile/Non-Woven Products			
Product	Solid Content	Ionic Character	Product Properties
AG-E061	20%	Mildly Cationic	AG-E061 is suitable for a broad range of different applications and is appropriate for synthetic fibres or natural fibres.
AG-E081	30%	Mildly Cationic	AG-E081 offers outstanding, long-lasting and durable water and oil repellency on synthetic and natural fibres as well as for blended yarns and wovens.
AG-E082	20%	Mildly Cationic	AG-E082 yields excellent water and oil repellency as well as a stain removability on a wide range of fabrics.
AG-E400	20%	Mildly Cationic	AG-E400 gives a moderate water repellency to natural and/or synthetic fibres.
AG-E500D	30%	Mildly Cationic	AG-E500D yields excellent water repellency and gives a soft texture to synthetic fibres - even under adverse conditions such as heavy rain.
AG-E550D	30%	Non-ionic	AG-E550D has better compatibility with a variety of additives and offers excellent and durable water and oil repellency on various types of textiles, particularly those made of synthetic fibres. AG-E550D also imparts excellent liquid repellency to various types of non-wovens.
AG-E300D	30%	Non-ionic	AG-E300D is compatible with a variety of waterborne dispersion resins and other additives, so is suited to a wide range of applications.
AG-E600	25%	Amphoteric	AG-E600 can impart superior alcohol/water repellency and hydrostatic head performance to polyolefin non-wovens.
AG-E800D	30%	Mildly Cationic	AG-E800D yields excellent water and oil repellency on a wide range of fabrics with good pad bath stability.
AG-E1001	27.5%	Mildly Cationic	AG-E 1001 provides the strongest water and oil repellency on a cotton and cotton blended fabrics with excellent wash durability.
AG-E1002	27.5%	Mildly Cationic	AG-E 1002 provides strong water and oil repellency on a variety of fabrics with good durability and stability.
AG-E100	20%	Mildly Cationic	A "next generation" product that imparts good oil repellency and stain release properties in conjunction with machine washing. May be used for polyester, cotton or cotton/poly blends.

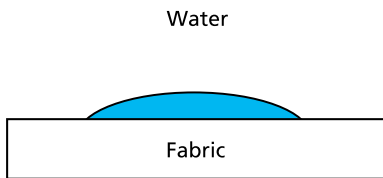
Paper Products			
AG-E060	20%	Mildly Cationic	AG-E060, E070, E080 can give fabulous water and oil proof properties on paper, paperboard and molded products in various papermaking conditions. Thanks to food contact registration of FDA and BfR it can be available in many applications.
AG-E070	25%	Mildly Cationic	
AG-E080	15%	Anionic	
AG-E090	25%	Anionic	AG-E090 imparts superior water and oil proof properties on paper, paperboard and molded products in various papermaking conditions. Because the product is registered for food contact by the FDA, it can be utilised for many applications.

Surface Tension - Water and Oil Repellency



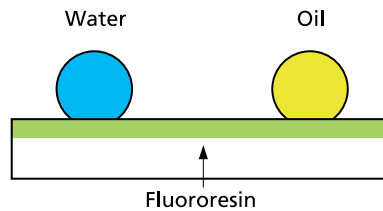
Whether an object tends to become wet or not is determined by its surface tension. When a liquid touches a solid surface it is repelled to form beads if the surface tension of the liquid is larger than the surface tension of the solid. The solid becomes wet if its surface tension is larger than the surface tension of the liquid.

Surface Tension of Fabric >
Surface Tension of Water



Fabric becomes wet because its surface tension is higher than that of water.

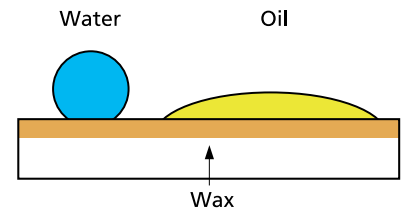
Surface Tension of Water >
Surface Tension of Oil >
Surface Tension of Fluororesin



The surface tension of fluororesin is very low, therefore fluororesin repels water and oil.

AsahiGuard® E-Series has particularly low surface tension.

Surface Tension of Water >
Surface Tension of Wax >
Surface Tension of Oil



Wax is used as a water repellent because of its low surface tension, however wax does not repel oil, since oil has a lower surface tension.

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