



GLASS COATINGS



A NEW DIMENSION OF GLASS COATING SOLUTIONS

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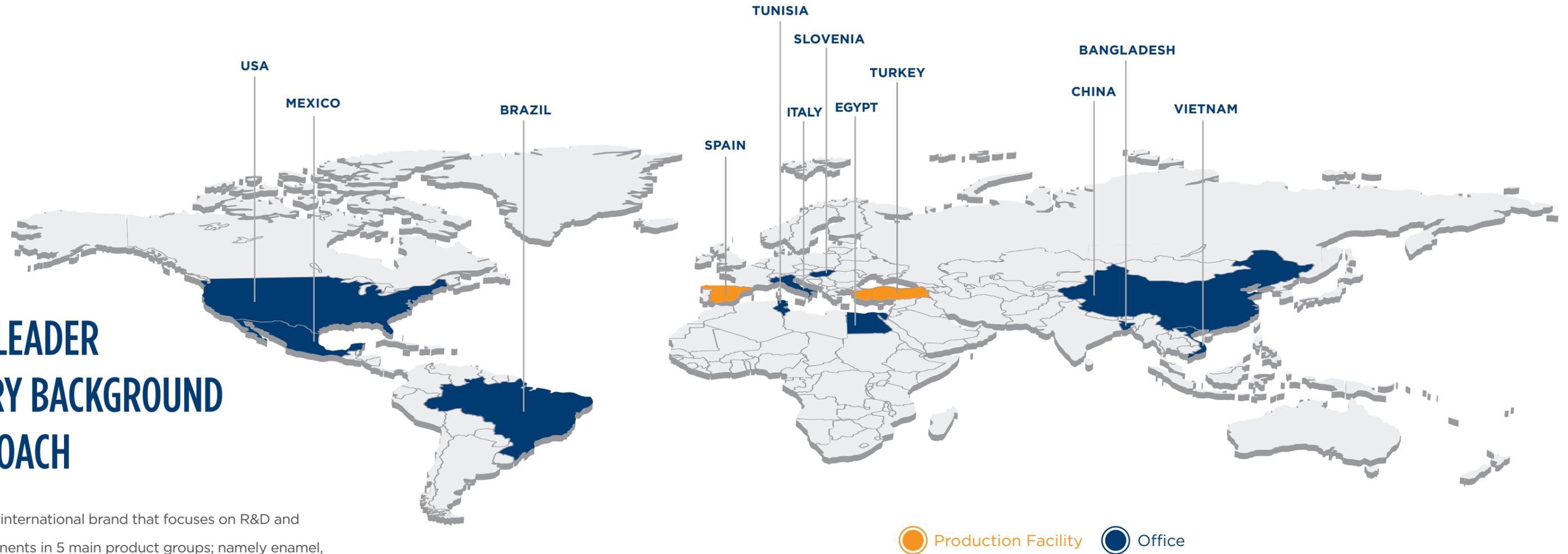


AKCOAT, AN INDUSTRY LEADER WITH A ROOTED HISTORY BACKGROUND AND INNOVATIVE APPROACH

Operating for nearly half a century, Akcoat is an international brand that focuses on R&D and customer satisfaction and produces in two continents in 5 main product groups; namely enamel, ceramic, non-stick & decorative coatings, pigment, and glass coatings. Akcoat, with its (wide) range of chemical coating material solutions... Is the global solution partner of numerous of manufacturers from various sectors including telecommunication, industrial and household goods such as white goods, small household appliances, building materials, architectural solutions, and kitchenware.

Akcoat actively serves its customers with its production facilities in Turkey and Spain, offices in the USA and China, sales offices and technical services in various regions such as Europe, South America, Asia, and Africa.

With its enamel and ceramic coating solutions, Akcoat is the market leader in Turkey and the second largest enamel coating manufacturer in the world.



Akcoat Glass Coating Materials Department has multi sector service discipline. It provides service to global and local manufacturers mainly in household appliances, construction, automotive, glass packaging and glassware sectors by developing innovative, eco-friendly, high chemical and physical resistant products.

R&D AND INNOVATION

Akcoat's innovative R&D force, which represents its global brand value at the highest level, and its innovative approach to continuous research and development, are reflected in its glass coating range. In addition to international publications, bulletins and academic articles, Akcoat R&D center receives awards according to the number of patents and registrations it holds in Turkey.

- Extremely high stability and durability achieved with perfect combinations of organic and inorganic components as a result of R&D studies.
- Layer, color, surface gloss options covering different needs
- Eco-friendly products
- Development of solutions with new applications and products by foreseeing customer needs
- Comprehensive quality control to ensure customer product quality continuity control and technical service support

TESTS

 PHYSICAL TESTS	 MECHANICAL TESTS	 CHEMICAL TESTS	 INSTRUMENTAL TESTS
COLOR TEST ASTM D 2244	BALL TEST ASTM C 149-14	CITRIC ACID EXPOSURE TS EN 14483	AAS FOR LITHIUM
GLOSS ASTM D 523	THERMAL SHOCK ASTM C 149-14	ACETIC ACID EXPOSURE TS EN 14483	SEM-EDX
OPACITY ASTM D 2805	FRAGMENTATION ASTM C 149-14	SOLV. RESISTANCE TS EN 14483	HOT STAGE
DENSITY ASTM D 1475	ABRASION TEST ASTM D 4213	FOOD CONTACT TÜV	PSD / XRD / XRF
VISCOSITY ASTM D 2196	STRETCH TEST ASTM D 3363		DSC DTA TG
	REFRACTORY CORROSION TEST TG-DTA		THERMAL COEFFICIENT

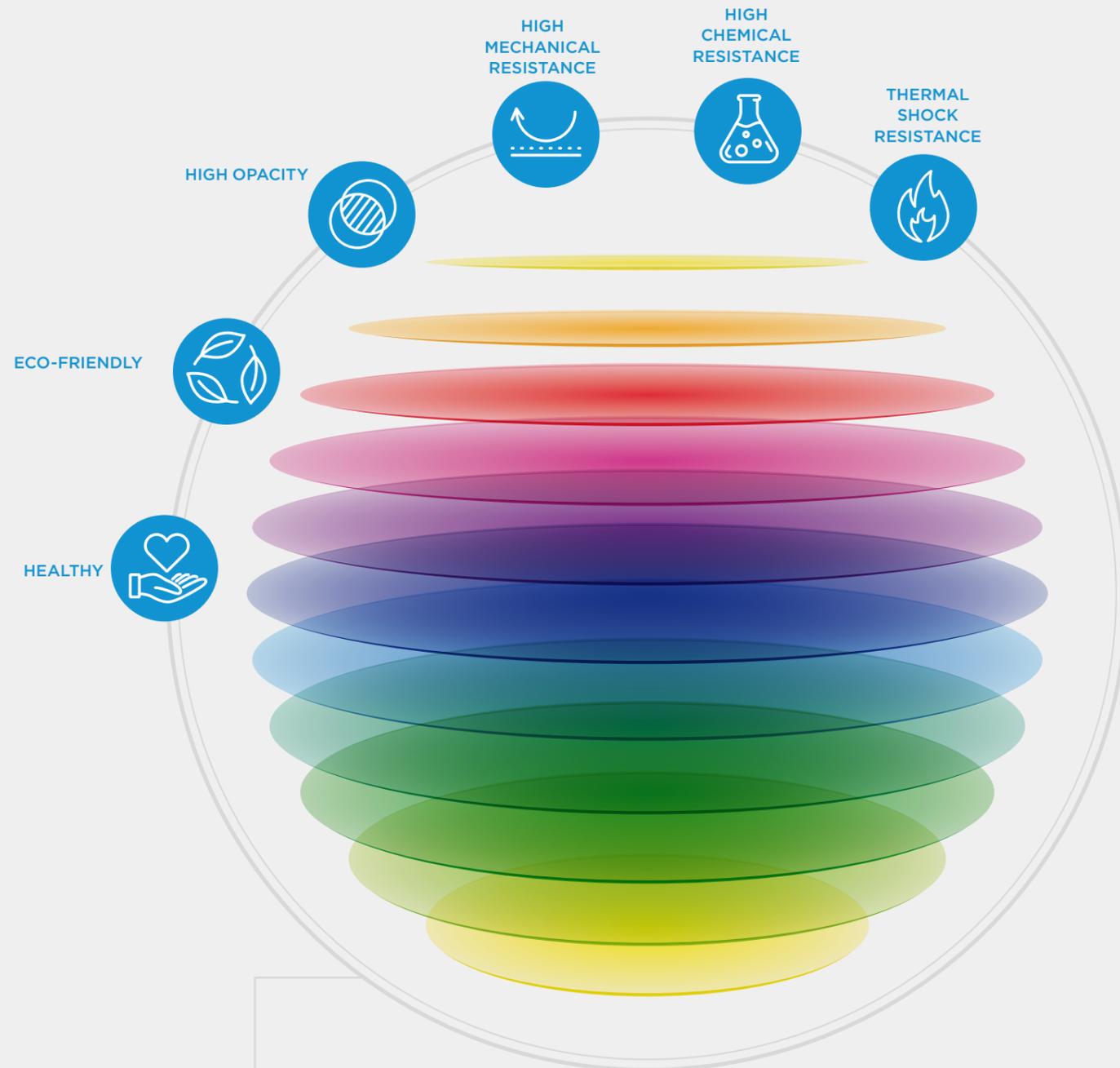
CERTIFICATES

CERTIFICATES		ALL PRODUCTS	FRITS	SHATTER PROOF-FLUX
	REACH	●		
	PB FREE	●		
	CD FREE	●		
	CR FREE	●		
	ROHS		●	
	TÜV / DISH WASHER SAFE			●



GLASS COATINGS





- ENVIROMENTALLY FRIENDLY INORGANIC GLASS ENAMEL COATING
- MULTI LAYER COATING REDUNDANT
- 600 TO 700°C APPLICATION TEMPERATURE
- PERFECT BOND WITH GLASS SURFACE
- WIDE RANGE OF COLORS

HOUSEHOLD APPLIANCES PAINTS

Inorganic glass paint coatings, containing high zinc and bismuth, form a strong integrated structure by establishing a one-to-one bond with the silica and oxygen atoms of the glass surface on which they are applied. Thanks to this integrated structure, they help achieve long-lasting superior chemical resistance, high mechanical strengt, and color quality coatings on the applied surface. Glass coating materials and paints used in industrial and household kitchen equipment are produced in accordance with inter-

national standards and demands. standards and demands, used in industrial and household kitchen equipment. Glass Paints can be applied with multiple methods. The paint is fired in ovens at high temperatures to ensure that the coating bonds with the surface. After firing, the surface and glass paint provide an inert structure with high chemical and mechanical resistance and durability, thanks to the chemical bond formed between the two.

GA1 TECHNOLOGY

- Suitable for household and industrial use
- Chemical and mechanical resistance
- Easy to clean
- Stable colors

<i>Application Method</i>	Serigraphy
<i>Wet Film Thickness</i>	28-40 µm
<i>Chemical&Mechanical Resistance</i>	●●●●○
<i>High Temperature Resistance</i>	●●●●○
<i>Energy Saving</i>	●●●○
Performance	○●○●○

GA1+ TECHNOLOGY

- High chemical and mechanical resistance
- Suitable for household and industrial use
- Easy to clean
- High covering
- High energy efficiency

<i>Application Method</i>	Serigraphy
<i>Wet Film Thickness</i>	28-40 µm
<i>Chemical&Mechanical Resistance</i>	●●●●●
<i>High Temperature Resistance</i>	●●●●●
<i>Energy Saving</i>	●●●●○
Performance	○●○●○



GA2 TECHNOLOGY

- Ultimate chemical and mechanical resistance
- Suitable for household and industrial use
- Easy to clean
- Ultimate covering
- Ultimate energy efficiency

<i>Application Method</i>	Serigraphy
<i>Wet Film Thickness</i>	35-40 µm
<i>Chemical&Mechanical Resistance</i>	●●●●●
<i>High Temperature Resistance</i>	●●●●●
<i>Energy Saving</i>	●●●●●
Performance	○●○●○

DECORATIVE GLASS PAINTS

Decorative glass paints are predominantly applied with screen printing and roller coating methods. Akcoat's products are suitable with both methods. In addition to the existing colors, new colors are developed in accordance with RAL and Pantone catalogs taking into account the demands of Akcoat's business partners.

GD1+ TECHNOLOGY

- Suitable with RAL and Pantone catalogs
- Standard and stable color matching
- Suitable for architectural and decorative uses
- Easy to clean

<i>Application Method</i>	Serigraphy, Roller
<i>Wet Film Thickness</i>	28-40 µm
<i>Chemical & Mech. Resistance</i>	●●●○○
<i>Energy Saving</i>	●●●○○

Performance
○○○○○



AUTOMOTIVE GLASS PAINTS

Akcoat also operates in the development and supply of coatings for laminated windshields for which customer expectations are fairly high. Akcoat GAT SBL4 series paints have passed OEM, which require high-standard criteria, and received technical approvals.

At the Akcoat R&D center, after-market segment paints that can be applied at low temperatures are also under development.

GAT AFM TECHNOLOGY

- High quality surface & stable color
- Low curing temperature
- High chemical & mechanical resistance

<i>Application Method</i>	Serigraphy
<i>Wet Film Thickness</i>	28-35 µm
<i>Chemical & Mechanical Resistance</i>	●●●●○
<i>Temperature Resistance</i>	●●●●○
<i>Energy Saving</i>	●●●●●

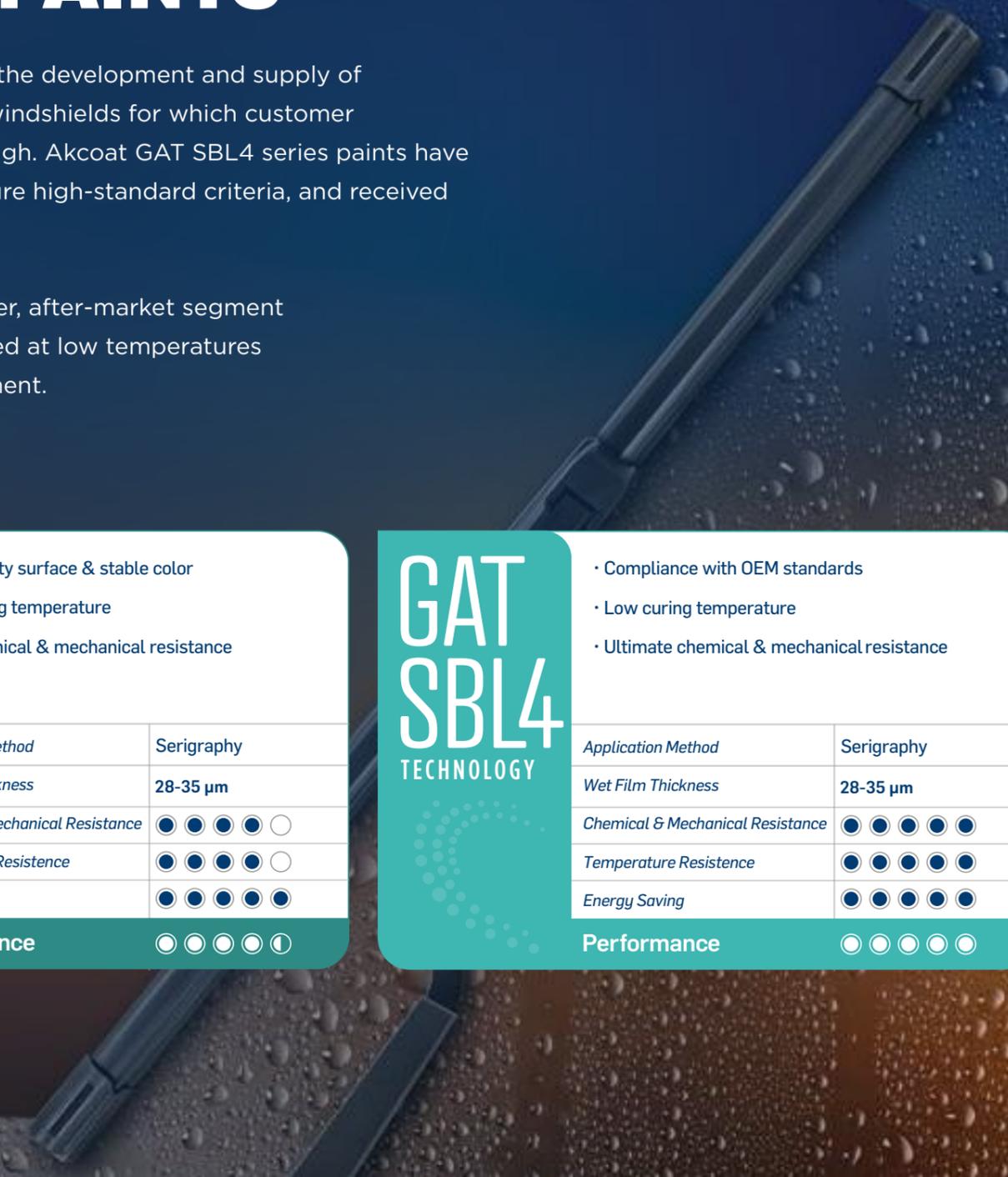
Performance
○○○○○

GAT SBL4 TECHNOLOGY

- Compliance with OEM standards
- Low curing temperature
- Ultimate chemical & mechanical resistance

<i>Application Method</i>	Serigraphy
<i>Wet Film Thickness</i>	28-35 µm
<i>Chemical & Mechanical Resistance</i>	●●●●●
<i>Temperature Resistance</i>	●●●●●
<i>Energy Saving</i>	●●●●●

Performance
○○○○○



GLASS PACKAGING COLORINGS



Glass Container Colorings

Forehearth frits are used all over the world in the glass industry as an effective coloring method instead of blending. Forehearth colorants are used in products developed for all aspects of daily life from cosmetics, pharmaceutical and glassware industries, by coloring the glass itself. Accordingly, Akcoat's superior technology forehearth frits bring following advantages;

- Small quantities of glass products can be produced in different colors.
- More efficient and energy-saving redundant.
- Refractory friendly, "little amount needed for coloring".
- Coloring at the molecular level, no additional outer coating required.
- Higher mechanical strength compared to organic coatings.

GFH

SERIES

<ul style="list-style-type: none"> · GFH 2000 Selenium Pink · GFH 3000 Nickel Brown · GFH 3100 Light Nickel Brown · GFH 6000 Cobalt Blue · GFH 6100 Dark Cobalt Blue · GFH 6200 Lighter Cobalt Blue · GFH 6300 Light Cobalt Blue · GFH 6400 Dark Copper Turquoise · GFH 6500 Darker Copper Turquoise · GFH 6600 Copper Turquoise 	<ul style="list-style-type: none"> · GFH 6700 London Topaz · GFH 7000 Georgia Green · GFH 7100 Iron Green · GFH 7200 Manganese Green · GFH 8100 Manganese Lilac · GFH 8200 Dark Manganese Black · GFH 8300 Manganese Black · GFH 8500 Manganese Purple · GFH 9000 Amber Brown
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<i>Superior refractory protection</i>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
<i>Anti-dust</i>	<input checked="" type="checkbox"/>
<i>Homogeneous coloring</i>	<input checked="" type="checkbox"/>
Performance	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

GLASSWARE PAINTS

Akcoat pad printing paints save energy in production and easily applied with low curing temperatures. In the outermost coating, TÜV certified GWF (Flux) technology is used and the lower coatings are durable up to at least 300 washes.

- Low firing temperature
- Energy saving
- Superior wash resistance
- Vibrant colors
- Ease to reapplication on cured coating



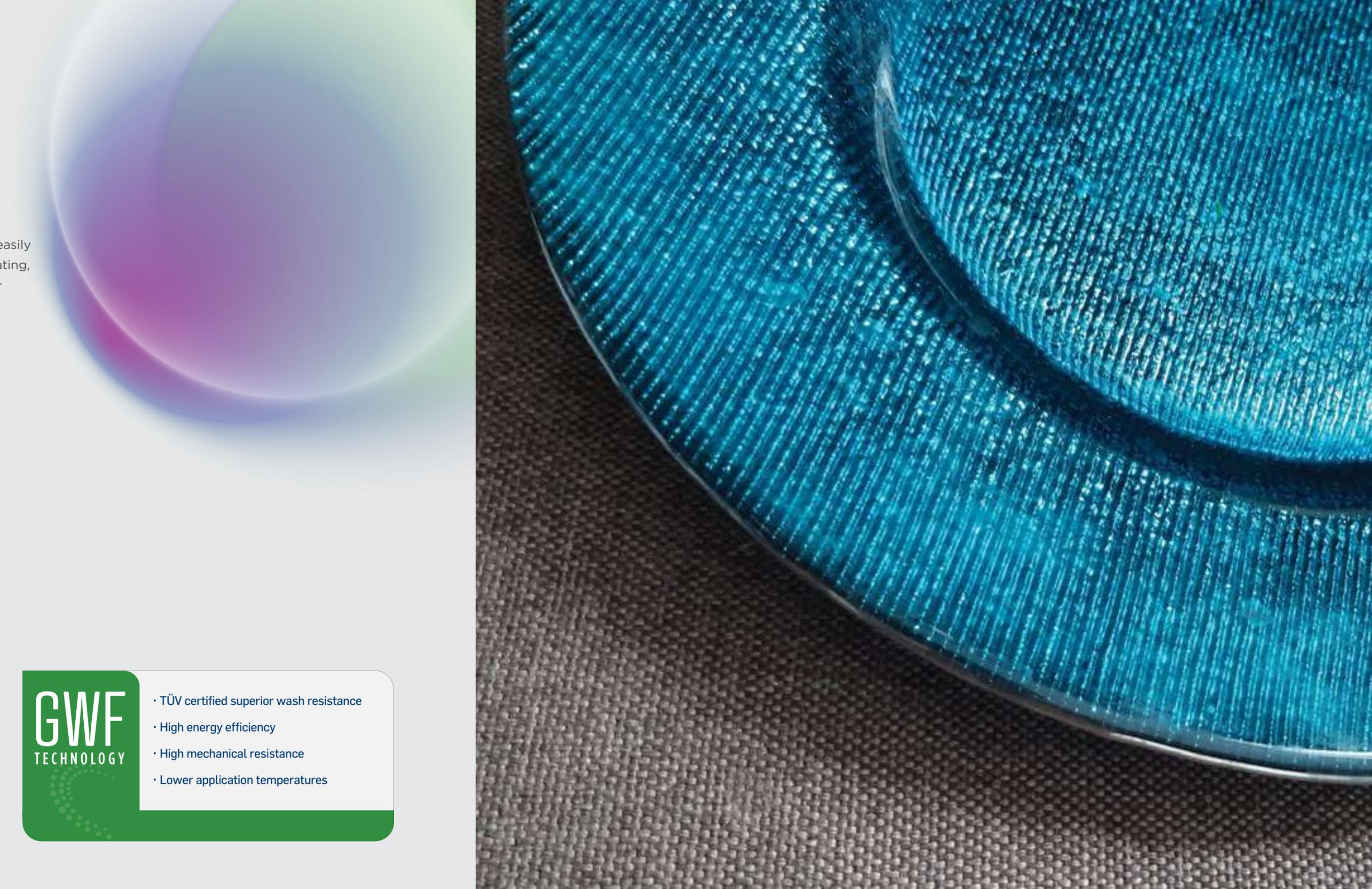
- Homogeneous surface distribution
- Easy to apply
- Suitable viscosity for all GWP Series



- Wide range of colors
- Easy to apply
- Vibrant colors which don't include: Pb / Cd / Cr
- Highly aesthetic appearance



- TÜV certified superior wash resistance
- High energy efficiency
- High mechanical resistance
- Lower application temperatures



SPECIAL COATINGS

Akcoat develops special products upon requests of business partners thanks to R&D center redundant the largest and best-equipped in the field of coating in Turkey.

In addition to offering design richness on glass surfaces it also develops different functional properties according to the usage expectation, such as creating a protective layer not falling apart when broken, changing color according to temperature, soft touch feature, and non-slip.



- Soft surface feel
- High resistance to chemicals
- Long-term flexibility between -20 °C ↔ +200 °C
- Shatterproof anti-slip
- Certificated by globally acknowledged - German TÜV laboratories (+200 washing resistance)

Application Method: Spray

GLASS FRITS & POWDERS

► Zinc Based Frits

- Advantages**
- Wide tempering range
 - Glossy and matte choices

- Area of Use**
- Household appliances paints
 - Decorative paints
 - Glassware paints

► Bismuth Based Frits

- Advantages**
- High chemical resistance
 - High UV stability and opacity

- Area of use**
- Household appliances paints
 - Automotive glass paints
 - Digital printing paints

► Forehearth Coloring Frits

- Advantages**
- Wide range of melting temperature
 - Stable coloring

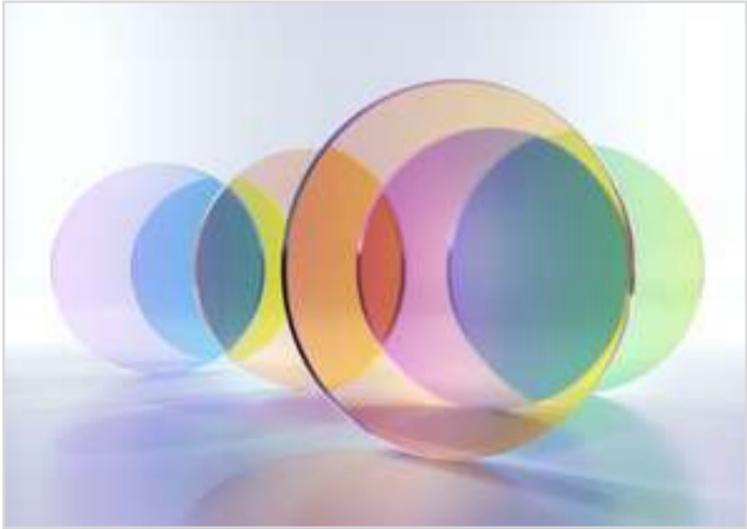
- Area of use**
- Glass container colorings
 - Glassware colorings



DESIGN TRENDS

Akcoat participates in international glass fairs, festivals and events every year to follow the latest trends in tones, textures and formats of various surfaces.

Moreover, Akcoat provides solutions to its customers taking into account their expectations in terms of colors, surface designs and functions.



**Akcoat glass coating materials department,
with focused sales team and strong R&D structure;
ready to develop eco-friendly and
sustainable projects to satisfy intricate
demands of Akcoat's global partners.**



CONTACT

AKCOAT TÜRKİYE

Sakarya 2.OSB 1 nolu yol
No: 18 54300
Hendek Sakarya Türkiye
Tel. +90 264 323 30 31
Fax. +90 264 323 39 32
glass@akcoat.com
www.akcoat.com

İSTANBUL OFFICE

Akasya AVM Kent Etabı
A3 Blok Kat: 7/9
Üsküdar / İstanbul

AKCOAT SPAIN

C/ Ceuta, 13 · Pol. Ind.
El Colomer P.O. Box 375
12200 Onda · Castellón · SPAIN
Tel. +34 964 776.629
Fax. +34 964 776 634
info@akcoatspain.com

AKCOAT CHINA

Room 101, Unit 1, Building 11,
North Area of Ruidu Gongyuan Shijia,
101121, Liyuan area,
Tongzhou District, Beijing, China
Tel: +86 10 6054 1337
douam@akcoat.com



*Metallic/silvery appearance can optionally be achieved in decorative and glassware coatings.

*Colors in all coating solutions can be applied to the extent allowed by the segment.

*Color shade may differ depending on application conditions.

*The product colors in the catalog may not exactly reflect the final product colors.

*To see the colors in factory conditions, please request a sample from the relevant sales representative.





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