

## Technical Data of 【 Silkware ES 】

Grade ★★★

### 1) Film properties

Item	Test method	Result
<b>Adhesion</b>	Cross cut adhesion test 【JIS K5600-5-6】	100/100
<b>Hardness</b>	Pencil hardness (rt.) 【JIS K5600-5-4】	Over 2H
<b>Hardness</b>	Pencil hardness (200°C) 【JIS K5600-5-4】	Over HB
<b>Heat resistance</b>	Heat at 250 °C for 100Hrs, followed by cross cut adhesion test 【JIS K5600-5-6】	100/100
<b>Boiling water resistance</b>	Immersion into boiling water at over 90 °C for 100Hrs 【Daikin standard】	No defect
<b>Boiling salt water resistance</b>	To put 5% salt water into a pot (aluminum or aluminum die-cast) and cover it, leaving it in a thermo-hygrostat bath at 80 °C 【JIS S2010】	Over 72Hrs
<b>Acid resistance</b>	To drop acetate solution in 5% concentration on the coating film and leave it for 16Hrs at a room temperature. 【Daikin standard】	No defect
<b>Alkaline resistance</b>	To drop sodium carbonate solution in 5% concentration on the coating film and leave it for 16Hrs at a room temperature. 【Daikin standard】	No defect
<b>Metal spatula abrasion resistance test</b>	To slide a metal spatula with the load of 280±20g on the coating film, after heating the film at 200 ±°C.	Over 300,000times
<b>Scotch-Brite abrasion resistance test</b>	To slide a Scotch-Brite (8x4cm) with 5% detergent solution on the coating film with the load of 4.5kg.(Scotch-Brite is changed at every 1000 times.)	Over 12000times
<b>Contact angle test</b>	Distilled water 【Daikin standard】	Over 110°
<b>Releasing property test</b>	-Mix eggs, soy sauce, sugar and place on the coating film. -Heat the film at 260°C for 20Min. -Wipe the stain with a wet cloth, followed by cleaning it with sponge and detergent. 【Daikin standard】	No defect

### 2) Coating properties

	Primer	Middle Coat	Topcoat	Comments
<b>Solid content (mass%)</b>	30-36	40-46	40-46	230°C30min→380°C30min
<b>Viscosity (cP)</b>	200-400	200-400	200-400	Rotating viscosimeter
<b>pH</b>	8-10	8-10	8-10	pH meter
<b>Shelf life</b>	6 months	6 months	6 months	—

### 3) Test panel condition

<b>Substrate</b>	Aluminum plates, aluminum die-casts
<b>Pretreatment of workpiece</b>	After baking workpiece 10min above 380°C, Sandblasting
<b>Application method</b>	Air spray
<b>Application process</b> <b>3C2B</b>	Coating (Primer) → Drying (100°C for 10 Min.) → Cooling at room temp. → Coating (Middlecoat) → Coating (Topcoat) <Wet-on-wet> → Drying (100°C for 10 Min.) → Baking (380 °C for 20 Min.)
<b>Film thickness</b>	Primer : 10-15 μm / Middle Coating : 15-25 μm / Top Coating : 10-15 μm