

# Resistance Test Results ZK-Ink (ZK-Two-Component Ink)

Test, Testing Medium	Evaluation:	ZK-Ink 312 Red (a)	ZK-Ink 948 Black (a)	ZK-Ink 951 Blending Black (a)	according to DIN	Test parameter	Temp.
<b>Fastness to saliva</b>		– (c)	– (c)	++	53160-1	2 h	37 °C / 99 °F
<b>Fastness to perspiration</b>		– (c)	– (c)	++	53160-2	2 h	37 °C / 99 °F
<b>Water resistance:</b>	Visible change of ink film Coloring of testing medium	≈ (d) ++	≈ (d) ++	≈ (d) ++	ISO 2836	24 h	20 °C / 68 °F
<b>Solvent resistance:</b>					ISO 2836	5 min	20 °C / 68 °F
– Ethanol	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++			
– Test mixture (d)	Visible change of ink film Coloring of testing medium	≈ (d) ++	≈ (d) ++	≈ (d) ++			
<b>Fuel resistance:</b>					ISO 2836	5 min	20 °C / 68 °F
– Premium	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++			
– Regular gas	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++			
– Diesel	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++			
<b>Alkali resistance:</b> – 2.5 % NaOH-solution	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++	ISO 2836	10 min	20 °C / 68 °F
<b>Detergent resistance:</b> – 1 % Persil®-solution	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++	ISO 2836	3 h	20 °C / 68 °F
<b>Resistance to vegetable fat:</b> – Sunflower oil	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++	ISO 2836	24 h	20 °C / 68 °F
<b>Resistance to skin cream:</b> – Nivea®	Visible change of ink film Coloring of testing medium	++ ++	++ ++	++ ++		24 h	20 °C / 68 °F
<b>Conditioning cabinet</b> (95 % humidity)		++	++	++		5 h	80 °C / 176 °F
<b>Heat resistance</b>		++	++	++		30 min	120 °C / 248 °F
<b>Level of gloss (e)</b>		<b>70</b>	<b>93</b>	<b>91</b>			
<b>Acid resistance:</b> – sulfuric acid, $\delta = 1.24$ g/ml	Visible change of ink film	++	++	++		5 min	20 °C / 68 °F
<b>Cross-hatch adhesion test (f)</b>		<b>Gt 0</b>	<b>Gt 1</b>	<b>Gt 0</b>	ISO 2409		

## Mixing ratio:

5 : 1 with Hardener 032

## Thinning:

15 % Thinner M 204

## Printing conditions:

Mesh 120-34 Y

Squeegee 70 Shore A

## Drying conditions:

2 Days 60 °C (140 °F)

## Remarks:

- ++ good, no color-change
- + acceptable
- ≈ poor
- not recommended, resp. coloration

## Printing substrates:

- (a) Aluminium sheets  
alkaline degreased
- (b) Test mixture according to  
DIN ISO 2836  
30 % by volume ethyl acetate  
60 % by volume ethanol  
10 % by volume  
1-methoxy-propanol-2
- (c) Ink film flakes completely
- (d) Ink film redissolved,  
scratch resistant again only  
after longer drying time
- (e) micro-gloss, geometry 60°,  
Manufacturer: Byk Gardner  
average value of 5 measurements
- (f) Cross-hatch adhesion value

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