

Techno-UMG

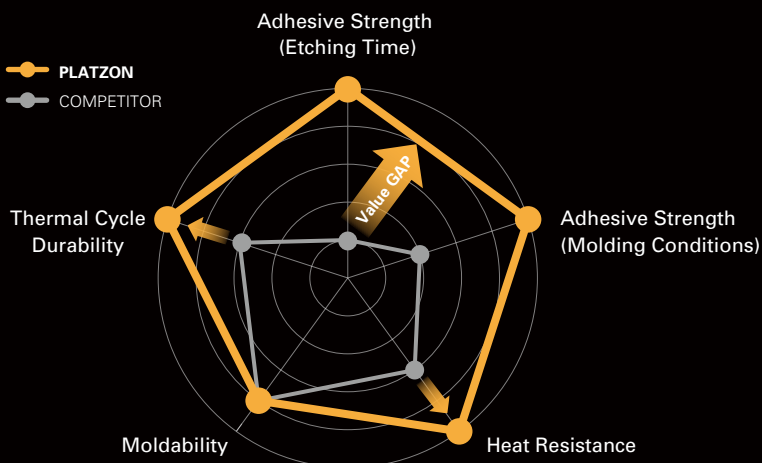
# PLATZON



**High Plating Quality !**  
**Wide Processing Window !**  
**ULTRA High Yield !**

- High thermal cycle durability. (90~110°C)
- Reduces processing costs—platable under various etching conditions.  
>Increases production rates via plating process flexibility.
- The only PC/ABS product on the market, specifically developed for exceptional plating adhesion and processing flexibility.

## Key Performance Properties



## PC/ABS Type

High Heat	TC-45M PZ850
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## ABS Type

Standard	3001M
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## Etching Temperature

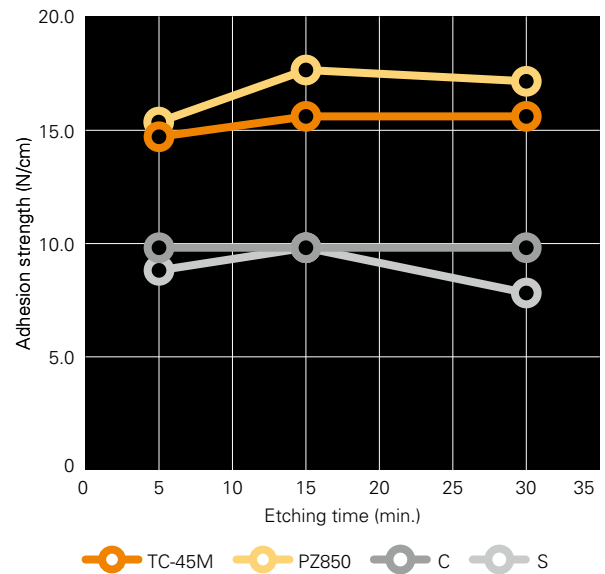
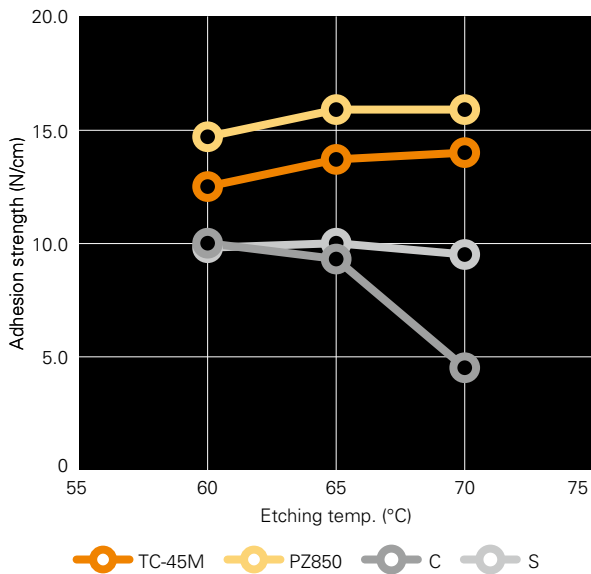
Allows for a wide range of etching temperature while maintaining better adhesion compared to other materials.

## Etching Time

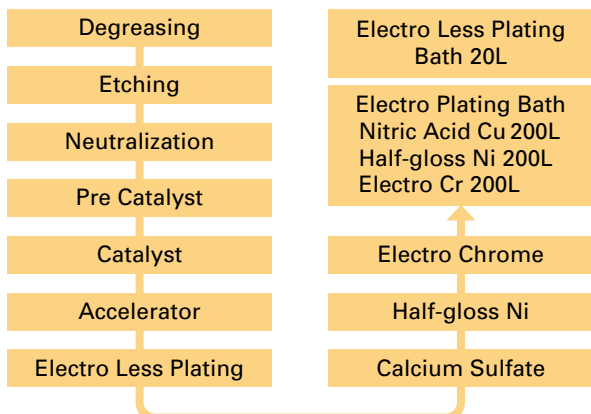
Allows for a wide range of etching time while maintaining better adhesion compared to other materials.

Larger processing "window" allows process engineering to develop specific processing conditions that are most efficient for your plant.

### Technical data to support wide etching conditions



### Techno-UMG Internal Plating Line Process



# Molding Condition

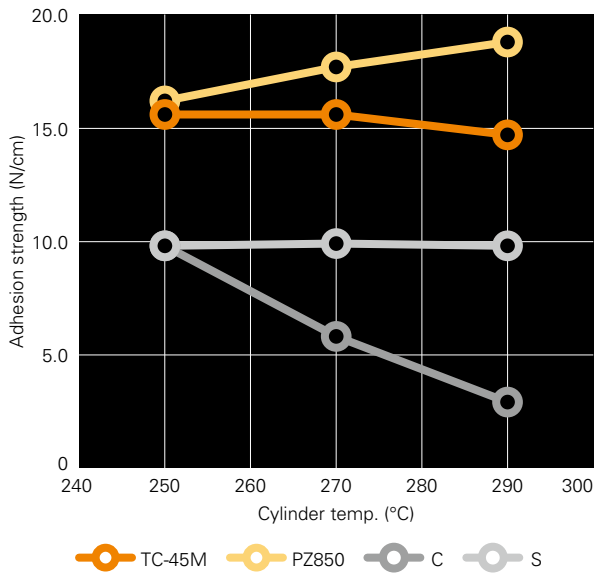
- 1. Larger allowable range of part molding conditions that do not affect etching performance.
- 2. Result: consistent high plating adhesion.

# Thermal Cycle Resistance

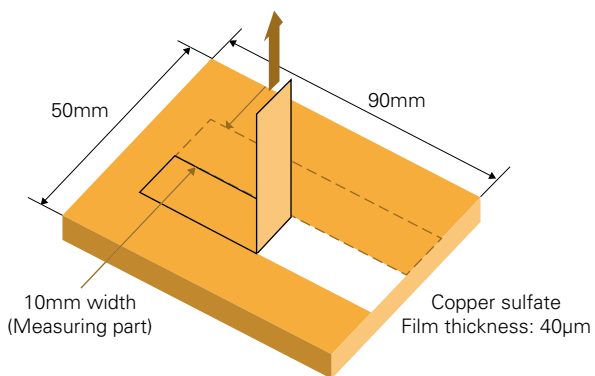
- 1. Plated parts tolerate the most severe thermal cycle testing.
- 2. Meets the strictest OEM's quality specifications with high productivity.
- 3. Result: reduction in part reject rates.

INCREASED YIELD

## Cylinder temp VS Plating adhesion strength



## Measurement Specimen

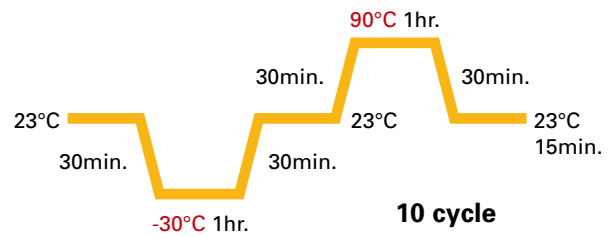


## Comparison-thermal cycle durability

	Etching (65°Cx10min.)	
	Crack	Blister
<b>PLATZON TC-45M</b>	<b>5</b>	<b>5</b>
<b>PLATZON PZ850</b>	<b>5</b>	<b>5</b>
C company	2	4
S company	3	3

<b>Molding condition</b>	<b>Plating condition</b>
Machine: JSW-75E II P	Cr acid: 400g/l
Mold: Door handle cover	Sulfuric acid: 200cc/l
Cylinder temp.: 260°C	Plating layer: Cu 20µm
Injection speed: 30mm/sec.	Ni 10µm
	Cr 0.3µm

## Thermal Cycle Test



# Physical Property

## PC/ABS resin

Item	Test method	Condition	Unit	PLATZON		Other company materials	
				TC-45M	PZ850	C company	S company
				High heat	High heat & High flow	PC/ABS	PC/ABS
Charpy Impact Strength (Notched)	ISO 179	23°C	kJ/m <sup>2</sup>	<b>52</b>	<b>45</b>	40	42
		-30°C		<b>25</b>	<b>25</b>	18	27
Tensile Strength	ISO 527	23°C	MPa	<b>45</b>	<b>42</b>	47	49
Tensile Modulus				<b>1,750</b>	<b>1,800</b>	1,950	2,050
Flexural Strength	ISO 178	23°C	MPa	<b>68</b>	<b>65</b>	70	74
Flexural Modulus				<b>1,900</b>	<b>1,900</b>	2,100	2,200
Rockwell Hardness	ISO 2039	23°C	R-Scale	<b>104</b>	<b>102</b>	103	106
TDUL	ISO 75	1.8MPa	°C	<b>106</b>	<b>103</b>	90	96
Vicat	ISO 306	50N	°C	<b>127</b>	<b>124</b>	107	112
Density	ISO 1183	—	g/cm <sup>3</sup>	<b>1.12</b>	<b>1.12</b>	1.09	1.10
Melt Volume Rate	ISO 1133	220°C, 98N	cm <sup>3</sup> /10min.	<b>3</b>	<b>8</b>	13	11
		240°C, 98N	cm <sup>3</sup> /10min.	<b>10</b>	<b>24</b>	31	27
Mold Shrinkage	ISO 294-4	—	%	<b>0.5-0.7</b>	<b>0.5-0.7</b>	—	—

## ABS resin

Item	Test method	Condition	Unit	PLATZON			
				3001M	3001MV2A	25	TM-25M
				Standard	High adhesive	Plating & Painting	Middle heat
Charpy Impact Strength (Notched)	ISO 179	23°C	kJ/m <sup>2</sup>	<b>27</b>	<b>26</b>	<b>31</b>	<b>17</b>
		-30°C		<b>11</b>	<b>16</b>	<b>11</b>	<b>11</b>
Tensile Strength	ISO 527	23°C	MPa	<b>42</b>	<b>40</b>	<b>42</b>	<b>45</b>
Tensile Modulus				<b>2,350</b>	<b>2,250</b>	<b>2,290</b>	<b>2,400</b>
Flexural Strength	ISO 178	23°C	MPa	<b>66</b>	<b>66</b>	<b>65</b>	<b>66</b>
Flexural Modulus				<b>2,500</b>	<b>2,350</b>	<b>2,150</b>	<b>2,500</b>
Rockwell Hardness	ISO 2039	23°C	R-Scale	<b>109</b>	<b>108</b>	<b>105</b>	<b>113</b>
TDUL	ISO 75	1.8MPa	°C	<b>81</b>	<b>80</b>	<b>79</b>	<b>98</b>
Density	ISO 1183	—	g/cm <sup>3</sup>	<b>1.05</b>	<b>1.05</b>	<b>1.04</b>	<b>1.06</b>
Melt Volume Rate	ISO 1133	220°C, 98N	cm <sup>3</sup> /10min.	<b>21</b>	<b>30</b>	—	<b>4</b>
Mold Shrinkage	ISO 294-4	—	%	<b>0.4-0.6</b>	<b>0.4-0.6</b>	<b>0.4-0.6</b>	<b>0.4-0.6</b>
Coefficient of Linear Thermal Expansion	ISO 11359-2	—	cm/cm/°C (*10 <sup>-5</sup> )	<b>8.5</b>	<b>8.5</b>	<b>8.6</b>	<b>9.0</b>