

## HI-MACS<sup>®</sup> Chemical Resistance Tests Results

Chemical	Chemical Concentration in %	Time of penetration to surface	Test procedure / Test Norm /	Result	Remarks
Acetic acid	20%	24 hours	LG internal test	<b>No Defect</b>	
Acid alcohol	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
Amyl alcohol	n.i.	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5-4 S002 = 5</b>	Level 5: no visible change Level 4: slight change in gloss
Ketone alcohol	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
Acetone	n.i.	24 hours	LG internal test	<b>No Defect</b>	
Acetone	n.i.		acc. EN ISO 19712-2, part 10 Method A	<b>S028 = 4 G002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss
Ammonia water	n.i.	24 hours	LG internal test	<b>No Defect</b>	
Ammonium hydroxide	20%	24 hours	LG internal test	<b>No Defect</b>	
Ammonium hydroxide	10%	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5-4 S002 = 5</b>	Level 5: no visible change Level 4: slight change in gloss
Benzene	n.i.	24 hours	LG internal test	<b>No Defect</b>	
Bleach (NaOCl, household)	n.i.	24 hours	KS M 3007-95	<b>No Defect</b>	
	10%	24 hours	LG internal test	<b>No Defect</b>	
Blood	n.i.	4 hours	chem test South America	<b>No Defect (5)</b>	
Blood	n.i.	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5-4 S002 = 5</b>	Level 5: no visible change Level 4: slight change in gloss
Bromine	n.i.	24 hours	KS M 3007-95	<b>No Defect</b>	
Citric Acid	10%		acc. EN ISO 19712-2, part 10 Method A	<b>S028 = 4 G002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss

Colouring agents					
<b>Fuchsine (C<sub>20</sub>H<sub>20</sub>CIN<sub>3</sub>)</b>	n.i.	24 hours	chem test South America	<b>No Defect (4)</b>	Cleaning water, soap & sponge
<b>Violet (C<sub>16</sub>H<sub>8</sub>Br<sub>2</sub>N<sub>2</sub>O<sub>2</sub>)</b>	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	cleaning: water & sponge
<b>Safranin (C<sub>20</sub>H<sub>19</sub>CIN<sub>4</sub>)</b>	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
<b>Methylene Blue</b>	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
<b>Methylene Blue Phosphate</b>	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
<b>Ethyl alcohol</b>	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Formaldehyde</b>	37%	24 hours	LG internal test	<b>No Defect</b>	
<b>Formic acid</b>	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Glycerin</b>	n.i.	24 hours	LG internal test	<b>No Defect</b>	
<b>Gasoline</b>	pure	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5 S002 = 5</b>	Level 5: no visible change
<b>Hydrochloric acid</b>	conc	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Hydrochloric acid</b>	20%	24 hours	KS M 3007-95	<b>No Defect</b>	
	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Hydrogen peroxide</b>	3%	24 hours	KS M 3007-95	<b>No Defect</b>	
		24 hours	LG internal test	<b>No Defect</b>	
<b>Hydrogen peroxide</b>	30%	24 hours	LG internal test	<b>No Defect</b>	
<b>Hydrogen peroxide</b>	25%		acc. EN ISO 19712- 2, part 10 Method A	<b>S028 = 4 G002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss
<b>Iodine</b>	3,5%	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Iodine</b>	10%	24 hours	LG internal test	<b>No Defect</b>	
<b>"Lugol"</b>	2% / 5%	24 hours	chem test South America	<b>No Defect (5)</b>	
<b>Lead acetate</b>	n.i.	24 hours	KS M 3007-95	<b>No Defect</b>	
	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Methanol</b>	n.i.	24 hours	LG internal test	<b>No Defect</b>	
<b>Methylethyl keton</b>	n.i.	24 hours	LG internal test	<b>No Defect</b>	
<b>Mineral oil</b>	n.i.	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5 S002 = 5</b>	Level 5: no visible change

<b>Nitric Acid</b>	20%	24 hours	KS M 3007-95	<b>No Defect</b>	
	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Nitric Acid</b>	Conc.	24 hours	KS M 3007-95	<b>light marking</b>	
<b>Perchloric acid</b>	60%	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Phosphoric acid</b>	17%	24 hours	KS M 3007-95	<b>No Defect</b>	
	20%	24 hours	LG internal test	<b>No Defect</b>	
	85%	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Potassium Hydroxide</b>	30%	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Shoe Polish (black)</b>	n.i.		acc. EN ISO 19712-2, part 10 Method A	<b>S028 = 4 G002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss
<b>Shoe Polish (silver soft)</b>	n.i.	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5 S002 = 5</b>	Level 5: no visible change
<b>Silver nitrate</b>	1%	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Silver nitrate</b>	5%	24 hours	KS M 3007-95	<b>No Defect</b>	
<b>Sodium hydroxide</b>	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Sodium hydroxide</b>	25%		acc. EN ISO 19712-2, part 10 Method A	<b>S028 = 4 G002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss
<b>Sodium chloride, saturation</b>	n.i.	24 hours	LG internal test	<b>No Defect</b>	
<b>Soybean oil</b>	n.i.	24 hours	LG internal test	<b>No Defect</b>	
<b>Solution A (?)</b>	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
<b>Solution B (?)</b>	n.i.	24 hours	chem test South America	<b>No Defect (5)</b>	
<b>Sulfuric acid</b>	20%	24 hours	KS M 3007-95	<b>No Defect</b>	
	20%	24 hours	LG internal test	<b>No Defect</b>	
<b>Toluene</b>	n.i.	24 hours	LG internal test	<b>No Defect</b>	
<b>Tartaric acid</b>	10%	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5 S002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss
<b>Urea</b>	n.i.	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 5 S002 = 5-4</b>	Level 5: no visible change Level 4: slight change in gloss

<b>Uric acid</b>	n.i.	16 hours wet 24 hours dry	acc. DIN EN 12720	<b>S006 = 3</b> <b>S002 = 5</b>	Level 5: no visible change Level 3: minor change in gloss
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\*This report details is not available for public share.