

Chemical and Technical Information

Over 20 years research and development by LG engineers, means that we are producing high-tech quality products.

Thanks to the new Thermalcure-technology, developed by LG, HI-MACS® performs better than the standard in Solid Surface.

For example you save precious time because it is easier to sand.

And thanks to the Thermalcure-technology used during production, HI-MACS® has excellent heat-resistance.

Chemical resistance

HI-MACS® is a fully homogenous material with no pores and is thus simple and easy to clean.

CLASS	STAINING AGENT	APPLICATION TIME	EVALUATION OF G002 CHANGES	EVALUATION OF S028 CHANGES
GROUP 1	Water	16h – 24h	5 to 4	5 to 4
	Toothpaste			
	Hand cream			
	Natural fruit and vegetable juice			
	Lemonade and fruit drinks			
	Meats and sausages			
	Animal and vegetable fats and oils			
	Yeast suspension in water			
	Salt (NaCl) solutions			
	Mustard			
	Lyes, soap solutions			
	Cleaning solution			
	Alcoholic beverages			
	Phenol and chloramine-T disinfectants			
Citric acid (10% solution)				
GROUP 2	Coffee (120gr coffee per ltr. water)	16h	5	4 to 5
	Black tea (9gr tea per ltr. water)			
	Milk (all types)			
	Cola beverages			
	Wine vinegar			
	Alkaline-based cleaning agents (10% in water)			
	Hydrogen peroxide (3% solution)			
	Ammonia (10% solution of commercial concentrate)			
	Lipstick			
	Water colours			
	Laundry marking inks			
	Ball point inks			
GROUP 3	Sodium hydroxide (25% solution)	10min.	5 to 4	4 to 5
	Hydrogen peroxide (30% solution)			
	Acetone			
	Trichlorathane			
	Other organic solvents			
	Concentrated vinegar (30% acetic acid)			
	Bleaching agents and sanitary cleaners containing them			
	Hydrochloric acid based cleaning agents			
	Tincture of iodine			
	Boric acid			
	Lacquers and adhesives (except fast-curing materials)			
	Amidosulfonic acid descaling agents ($\leq 10\%$ solution)			
	Nail varnish			
	Nail varnish remover			
Stain or paint remover based on organic solvents				
GROUP 4	Acetic acid (5% solution)	20min.	5	4

Tests carried out in accordance to EN ISO 19712 for Solid Surface material, please see table (left) for results.



Evaluation

RATING LEVEL	DESCRIPTION
Rating 5	No visible change
Rating 4	Slight change in gloss and/or colour, only visible at certain viewing angles
Rating 3	Moderate change in gloss and/or colour
Rating 2	Marked change in gloss and/or colour
Rating 1	Surface distortion and/or blistering

a = Acids and alkalis, in concentrations stronger than those shown in group 3, which can be contained in commercial cleaning agents, can cause surface damage or marking, even with very short contact times. Any spillage of such materials should be washed off immediately.

Technical data sheet

HI-MACS® is extremely resistant to dirt and wear and tear, so that you can enjoy many years' peace of mind with the outstanding quality of your new product.

SPECIFICATION	UNIT	RESULT SOLIDS	RESULT GRANITE	TEST METHODS
Flexural-E-modulus	MPa	8900	7730	DIN EN ISO 178
Flexural strength	MPa	70.1	64.3	ASTM D638
Breaking elongation	%	1	1.1	DIN EN ISO 178
Tensile strength	MPa	69.5	56.3	DIN EN ISO 527
Density	g/cm ³ kg/m ³	1.75 1750	1.65 1650	ISO 1183 ISO 1183
Ball indentation hardness	N/mm ²	257	239	DIN EN ISO 2039-1
Mohs hardness		2 to 3	2 to 3	EN 101
Pencil hardness		>9H	>9H	ISO 15184
Water absorption weight strength/thickness		<0,1% <0,1%	<0,1% <0,1%	DIN EN 438 Part 12
Impact resistance impactor drop ball test (fall height)	N mm	≥25 ≥1500	≥25 ≥1500	E DIN EN 438, 02/02 Part 2/20 E DIN EN 438, 02/02 Part 2/21
Slip resistance		>0,32 – 0,9		GMG100 (replaces R9)
Slip resistance		angle of acceptance of more than 10° to 19° = R10		DIN 51130
Climate change resistance	°C	≥0,05	≥0,05	AMK
Dry heat (pan base)	°C	≥100 (7C)		DIN 68 861, Part 7, 04-'85
Damp heat (pan base)	°C	≥100 (7C)		DIN 68 861, Part 8, 04-'85
Temperature change resistance	°C	no change		UNI 9429
Resistance to cigarette burns		6C	6B	DIN 68 861, Part 6, 11-'82
Scratch resistance		4D	4B	DIN 68 861, Part 4, 11-'81
Electrostatics Conductivity	1 x 10 ¹² Ω	insulating non-conductive		DIN IEC 1340-4-1, 04-'92 EN 61340-5-1
Thermal conductivity	W/mK	0.636	0.55	DIN EN 12664
Thermal resistance	m ² K/W	0.038	0.045	DIN EN 12664
Thermal Expansion Coefficient for Standard HI-MACS® Products	mm/mK m/m/°C	0.045 45 x 10 ⁻⁶	0.055	DIN EN 14581
Water vapor transmission properties – diffusion resistance factor	μ	18607	16150	DIN EN ISO 12572
Dimensional change by change in relative humidity length thickness mass	% % %	-0.03 0.06 0.05	-0.02 0.03 0.05	DIN EN 318, edit. 5, 1998
Resistance to boiling water increase in weight increase in thickness	% %	<0,1 <0,1	>0,1 <0,1	E DIN EN 438, 02/02 Part 2/12
Light fastness (Xenon)	scale 0 – 10	better than 6	better than 6	DIN 53 387, 04-'89
Food tolerance		suitable for all colours		LMBG § 31
Hygiene		suitable	suitable	LGA Hygiene Certificate

HI-MACS® Fire Classification

MATERIAL CATEGORY	MATERIAL THICKNESS	PRODUCT TESTED	TEST METHOD	RESULT
HI-MACS® Standard range	12 mm	HI-MACS® colour range*, M551, G554, Q001, Z005.	DIN 4102	B1
		S028	DIN 4102 / ABP	B1
		S028	DIN 5510	passed (S4 / SR2 / ST2 und FED30 < 1)
		S028, T017, VW01, W001	NF P92-501	M1
		HI-MACS® colour range*	EN 13501-1	B - s1 - d0
	12 mm plus fibre cement board	HI-MACS® colour range*	EN 13501-1	B - s1 - d0
HI-MACS® Special Formulations	12 mm	S728 CE MED	DIN 4102	B1
		S728 CE MED	EN 13501-1 / SBI	B - s1 - d0
		S728 CE MED	EN 45545	passed R1/HZ3
		*IMO S728 CE MED + IMO colour range in Solids	Module B & Module D	IMO certified
		S928 Ultra-Thermoforming	DIN 4102	B1
		S928 Ultra-Thermoforming	EN 13501-1	B - s1 - d0
		S922U Intense Ultra	DIN 4102	B1
HI-MACS Exteria®	12 mm	S728 HI-MACS®-FR	DIBT	ETA
		S828 HI-MACS®-UV+	CSTB	Avis Technique
		S728 HI-MACS®-FR, S828 HI-MACS®-UV+	NF P92-501	M1

* For details of HI-MACS® colour range please contact your sales representative or refer to our reports: 2019-2213, 167467, 347196, MED233220CS