

TECHNICAL DATA SHEET

HI-MACS® ADHESIVE 2-COMPONENT



Photo: JoussemKarliczek, j-k.de

2-COMPONENT

Interior Solid Surface Material

HI-MACS[®]
Natural Acrylic Stone™

1. Features

1.1 Cartridge: For professional use only

1.2 Technical Documents:

- PDF
- Downloads on Website: www.himacs.eu

1.3 15 Years limited Warranty:

In Accordance to its material, fabrication and installation guidelines of interior use.

Description of Adhesive:

- Basis: 2-Component-System
 - Component A: base
 - Component B: hardener
- Delivery: cartridges ready to use
- Mixing: by mixer-tips only (see further instructions) by use of dispenser gun

1.4 Colours: Available Colours according to the overview listed in the Fabrication Manual of latest publishing.

1.5 Applications:

- HI-MACS[®] 2-Component Adhesive is developed to use to glue the thickness of the material and for Interior use only.
- HI-MACS[®] 2-Component Adhesive is NOT developed to glue surface to surface – no full area contact recommended as well as not developed as a gapfiller neither for any Inlay application.

Available Adhesive:

- Cartridge 250ml
- Cartridge 45ml



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1.6 UV resistance:

Internal tests at LG Hausys Ltd. have shown a positive improvement of its Delta E value in comparison with its forma formulation. Due to environmental and climate changes LG Hausys Ltd. will track on the Warranty of internal use.

1.7 Dispenser Gun:

- for 45ml cartridges
- for 250ml cartridges



2. Stock Items / Goods

- 250ml Cartridge with Mixer Tip
- 45ml Cartridge with Mixer Tip
- Labeling & packaging



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Production Date on Label:



Sample here: 28. Feb. 2018 – H16 Alpine White

Store horizontally after partial use.



Dispenser Gun for 45ml cartridge (manual)



Dispenser Gun for 250ml cartridge (manual)



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3. Application / Use & Storage

3.1 Application & Use:

- 1) HI-MACS[®] 2-component adhesive is developed to use the glue material for bonding the thickness of the product.
- 2) HI-MACS[®] 2-component adhesive is not developed to glue surface to surface.
- 3) HI-MACS[®] adhesive is not developed to glue large areas to surfaces or to be used as a filler or inlay application.

3.2 Description

basis: 2 component-System
component A: base
component B: hardner

3.3 Packaging

PACKAGING		BOX	UNITS / PIECES
cartridge	45ml	1	15
mixer tip (for 45ml)	bag	-	100
cartridge	250ml	1	6
mixer tip (for 250ml)	bag	-	100

3.4 Storage

STORAGE		
life time	years	5
1) adhesive cartridges stored best by	+°C	10 to 20
2) stored best in a cool and dry place		
3) cartridges placed not in sunlight neither any heat device		
4) used and non mixed cartridges placed vertically and turned ones in a while		
5) keep adhesive out of reach of children		

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4. Physical Properties / Data

4.1 Physical Properties

PHYSICAL PROPERTIES			COMPONENT A	COMPONENT B
single components	–	–	base	hardner
consistency	–	–	pasty	pasty
specific gravity	ISO 2811-1	–	1,13	1,14
viscosity, +23°C ±1°C	KS M 3705	mPa.s	30 000	21 000
density, +20°C	ISO 2811-1	–	1,11	1,12
mixing ratio	–	–	10	1

4.2 Physical Data

PHYSICAL DATA				
HI-MACS [®] adhesive cured	various		according to stock list	
density	ISO 1183	g/cm ³	1,11	1,12
Rockwell hardness	ISO 2039	M scale	91	
tensile strength	ISO 527	MPa	36,4	
tensile strength	KS M 3015	N/mm ²	29,6	
ultimate elongation	ISO 527	%	none	
flexural strength	KS M 3015	N/mm ²	84,8	
flexural strength	ISO 178	Mpa	68,1	
flexural E-Modulus	ISO 178	Mpa	436,8	
water resistance	–	–	applicable	

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5. Chemical Substances / Component A



HI-MACS [®] ADHESIVE COMPONENT A			
Ingredients	CAS No.	EINECS No.	Conc. %
Methyl methacrylate	80-62-6	201-297-1	50%
PMMA [Polymer]	9011-14-7	618-466-4	34%
Alumina trihydrate	21645-51-2	244-492-7	13%
Additives	-	-	3%

COMPONENTS WITH WORKPLACE CONTROL PARAMETER			
KOSHA:	Chemical Name	TWA	STEL
	Methyl methacrylate	50 ppm	100 ppm
ACGIH:	Chemical Name	TLV	STEL
	Methyl methacrylate	50 ppm	100 ppm
	Alumina trihydrate	1 mg/m ³	-

Appropriate engineering controls: Ventilation, Emergency shower
Personal protective equipment
Respiratory protection: Vapor mask
Eye protection: Protective goggles
Hand protection: Chemical resistant gloves
Skin and body protection: Working clothes

Further information see MSDS Component A.

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6. Chemical Substances / Component B



HI-MACS [®] ADHESIVE COMPONENT B			
Ingredients	CAS No.	EINECS No.	Conc. %
Dipropylene glycol dibenzoate	27138-31-4	248-258-5	94%
Dibenzoyl peroxide	94-36-0	202-327-6	3%
Fumed silica, crystalline-free	112945-52-5	601-216-3	3%

COMPONENTS WITH WORKPLACE CONTROL PARAMETER			
KOSHA:	Chemical Name	TWA	STEL
	Dibenzoyl peroxide	5 mg/m ³	–
	Fumed silica, crystalline-free	0,1 mg/m ³	
ACGIH:	Chemical Name	TLV	STEL
	Dibenzoyl peroxide	5 mg/m ³	–

Appropriate engineering controls: Ventilation, Emergency shower
Personal protective equipment
Respiratory protection: Vapor mask
Eye protection: Protective goggles
Hand protection: Chemical resistant gloves
Skin and body protection: Working clothes

Further information see MSDS Component B.

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7. Fabrication

- 1) HI-MACS[®] Adhesive is manufactured for professional use only and that personnel who have reviewed the MSDS and TDS instructions on use
- 2) wear proper protective equipment
- 3) before fabrication adhesive to be adjusted to room temperature
- 4) use Adhesive in a well ventilated area only
- 5) sheets to be bond must be free of dirt, oil and dust
- 6) cleaning best with a white cloth and clear denatured alcohol or Acetone
- 7) any mark or printed ink must be removed before adhesive applied best by sanding and wipe off with clear denatured alcohol (none colored pigments)
- 8) higher fabrication temperature shorten curing time
- 9) mixing by mixer tips only
- 10) the workpieces needs to be pressed so some adhesive squeezed out and stays with a line on surface
- 11) after curing the adhesive line can be cleaned off by routing or smooth sanding with sandpaper.
- 12) do not greate heat on surface during sanding process and finish surface level

FABRICATION			MIXING
open time, +17°C	-	-	± 5 Minutes
curing time, +17°C	-	-	
earliest to start working	-	-	± 45 Minutes
total curing	-	-	± 2 to 3 days
fixation pressure	-	N/cm ²	49 - 68

FABRICATION				
fabrication temperature best		+ °C	17	25

8. Environment / Disposal / Hazard Warning

8.1 Environmental Issues: Cured HI-MACS[®] Adhesive is "Emission free" according to EN 16000-9 and does not outgassing at any circumstance.

8.2 Disposal

- 1) Not hardened products are usually particularly requiring monitoring hazardous waste and need to be disposed properly according to local legal requirements.
- 2) Cured material can after consultation with the relevant competent Authority or
- 3) landfill as a house / commercial waste disposed.
- 4) The local authorities, such as E.g. District Office, are required to report for proper disposal, Environmental protection agency or regulatory authority.

- 1) HI-MACS[®] adhesive (non mixed)

waste key number	07 02 14
waste key number	14 06 05
- 2) When adhesive is mixed – to be handled as sheet material:

waste key number	17 02 03
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- 3) Packaging adhesive cartridges:

waste key number	15 01 10
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8.3 Hazard Warnings

- Information on the safe handling of chemical products, as well as the essential physical, safety technical, toxicological and ecological data are the current Safety data sheets to remove.
- The relevant provisions, such as E.g. the hazardous substances Ordinance are to be observed.
- For more instructions and informations see data sheets for product safety

9. Data Base / Legal Hints

9.1 Data Base

- 1) All data, dimensions, and technical data in this data sheet are based on laboratory tests.
- 2) Due to circumstances independantly from manufactory-test-laboratory the data may vary while using the material under different temperatur and level of humidity.

9.2 Legal Hints

The information provided in this Technical Data Sheet (TDS) is based on our Knowledge and experience under normal circumstances, when the product is properly stored and used. Due to the different materials, substrates as well as different working conditions, LG Hausys cannot guarantee a work result or liability. The user has to test the product to their suitability for the intended application purpose. LG Hausys reserve the right to change the product specification. The latest product data sheet should be requested from LG Hausys. In addition, all respective terms and conditions apply.

10. Greenguard

10.1 Certificate of Compliance



10.2 Greenguard Certification Criteria for Building Products and Interior Finishes

CRITERIA	CAS NUMBER	MAXIMUM ALLOWABLE PREDICTED CONCENTRATION	UNITS
TVOC ^(A)	–	0.50	mg/m ³
Formaldehyde	50-00-0	61.3 (50ppb)	µg/m ³
Total Aldehyde ^(B)	–	0.10	ppm
4-Phenylcyclohexene	4994-16-5	6.5	µg/m ³
Particle Matter less than 10 µm ^(C)	–	20	µg/m ³
Individual VOC ^(D)	–	1 / 10th TLV	–

(A) Defined to be the total response of measured VOCs falling within the C₆ – C₁₆ range, with responses calibrated to a toluene surrogate. Maximum allowable predicted TVOC concentrations for GREENGUARD (0.50 mg/m³) fall in the range of 0.5 mg/m³ or less, as specified in CDPH Standard Method v1.1.

(B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD / GC / MS analysis and the remaining aldehydes are measured using HPLC / UV analysis.

(C) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.

(D) Allowable levels for chemicals not listed are derived from 1 / 10th of the Threshold Limit Value (TLV) industrial work place standard. (Reference: American Conference of Government industrial Hygienist, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

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11. Colour Use: Sheet Colour vs Adhesive Colour

NO	COLOUR	NAME	DISCLAIMER	RANGE	ADHESIVE
1	G001	Desert Sand		S & P	H04 Peanut
2	G002	Grey Sand		S & P	H03 Grey
3	G004	White Quartz		Quartz	H36 Silver
4	G005	White Granite		Granite	H03 Grey
5	G007	Platinum Granite		Granite	H03 Grey
6	G009	Black Sand		S & P	H42 Merapi
7	G010	Black Pearl	●	S & P	H07 Black
8	G015	Midnight Pearl	●	S & P	H10 Blue
9	G031	Black Granite	●	Granite	H07 Black
10	G034	Arctic Granite		Granite	H36 Silver
11	G038	Sea Oat Quartz		Quartz	H04 Peanut
12	G048	Beach Sand		S & P	H04 Peanut
13	G050	Tapioca Pearl		S & P	H36 Silver
14	G058	Moonscape Quartz		Quartz	H04 Peanut
15	G063	Allspice Quartz		Quartz	H14 Sephia
16	G074	Mocha Granite		Granite	H37 Mocca
17	G100	Peanut Butter		Granite	H04 Peanut
18	G101	Crystal Beige		Quartz	H01 Satin White
19	G102	Grey Crystal		Granite	H03 Grey
20	G105	Brown Pearl	●	S & P	H35 Dark
21	G106	Riviera Sand		S & P	H04 Peanut
22	G107	Pebble Pearl		S & P	H03 Grey
23	G108	Lunar Sand		S & P	H36 Silver
24	G554	Urban Concrete		Concrete	H22 Perna Grey
25	G555	Steel Concrete	●	Concrete	H114 Pantheon
26	M551	Chic Concrete		Concrete	H114 Pantheon
27	M552	Shadow Concrete	●	Concrete	H114 Pantheon
28	M553	Ebony Concrete	●	Concrete	H115 Colosseum
29	M201	Terni		Marmo	H68 Terni
30	M206	Monza	●	Marmo	H07 Black
31	M303	Capri	●	Marmo	H62 Clay
32	M306	Breeze White		Marmo	H02 Arctic White
33	M422	Creamona		Marmo	H36 Silver
34	M426	Laviano		Marmo	H03 Grey
35	M427	Bellizzi		Marmo	H36 Silver



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NO	COLOUR	NAME	DISCLAIMER	RANGE	ADHESIVE
36	M428	Ispani		Marmo	H36 Silver
37	M501	Edessa		Marmo	H02 Arctic White
38	M904	Naples	●	Marmo	H107 Marta Grey
39	S001	Satin White		Solid	H01 Satin White
40	S002	Almond		Solid	H04 Peanut
41	S005	Grey		Solid	H03 Grey
42	S006	Arctic White		Solid	H02 Arctic White
43	S009	Cream		Solid	H20 Cream
44	S022	Black	●	Solid	H07 Black
45	S025	Fiery Red	●	Solid	H18 Red
46	S026	Banana	●	Solid	H17 Banana
47	S027	Orange	●	Solid	H19 Orange
48	S028	Alpine White		Solid	H16 Alpine White
49	S029	Ivory White		Solid	H32 Ivory
50	S033	Nordic White		Solid	H16 Alpine White
51	S034	Diamond White		Solid	H113 Diamond White
52	S100	Coffee Brown	●	Solid	H37 Mocca
53	S102	Babylon Beige	●	Solid	H52 Babylon Beige
54	S103	Concrete Grey	●	Solid	H53 Concrete Grey
55	S104	Toffee Brown	●	Solid	H54 Toffee Brown
56	S106	Lemon Squash	●	Solid	H104 Lemon Squash
57	S108	Marta Grey	●	Solid	H107 Marta Grey
58	S109	Steel Grey	●	Solid	H101 Steel Grey
59	S111	Dark Night	●	Solid	T09 Dark Night
60	S115	Deep Indigo	●	Solid	T08 Deep Indigo
61	S116	Festival Pink	●	Solid	H106 Festival Pink
62	S117	Midnight Grey	●	Solid	H35 Dark
63	S118	Mink	●	Solid	H128 Grey
64	S119	Evergreen	●	Solid	H125 Green
65	S120	Cosmic Blue	●	Solid	H127 Navy
66	S121	Suede		Solid	H126 Beige
67	S201	Nougat Cream		Solid	H04 Peanut
68	S203	Sky Blue		Solid	H30 Dawn Misty
69	S212	Light Green	●	Solid	H56 Light Green
70	S302	Opal		Lucent	T02 Opal



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NO	COLOUR	NAME	DISCLAIMER	RANGE	ADHESIVE
71	S303	Sapphire		Lucent	T03 Sapphire
72	S304	Ruby		Lucent	T04 Ruby
73	S305	Emerald		Lucent	T05 Emerald
74	VA01	Santa Ana		Volcanics	H03 Grey
75	VE01	Tambora		Volcanics	H20 Cream
76	VB02	Cima	●	Volcanics	H45 V/Black
77	VA22	Frosty		Volcanics	H03 Grey
78	VG21	Maui		Volcanics	H49 Maui
79	VW01	Gemini		Volcanics	H36 Silver
80	T010	Nebula		Aster	H02 Arctic White
81	T011	Venus		Aster	H01 Satin White
82	T017	Andromeda		Aster	H16 Alpine White
83	T018	Carina		Aster	H02 Arctic White
84	T019	New Moon		Aster	H01 Satin White
85	T020	Hercules	●	Aster	H22 Perna Grey
86	P102	Kold Silver		Sparkle	H111 Kold Silver
87	W001	Ice Queen		Lucia	H16 AL/White
88	W003	Shadow Queen		Lucia	H58 Pebble Pearl
89	W004	Star Queen	●	Lucia	H42 Merapi
90	W007	Lentil		Lucia	H20 Cream
91	W010	Red Quinoa	●	Lucia	H39 Latte

■ 12. Disclaimer

The information provided in this specific technical bulletin corresponds to our best knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relates only to specific material designated. These data may not be valid for such material in combination with other materials or in any process, unless expressly indicated otherwise. It is offered exclusively to provide possible suggestions for your own experiments and needs approval from LG Hausys Europe GmbH, for Warranty. This bulletin is not intended to replace for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purpose. Since LG Hausys Europe GmbH cannot anticipate all variations in actual end-use conditions, LG Hausys Europe GmbH makes no warranties and assumes no liability in connections with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

■ 13. Warranty

The 15-year limited Warranty for HI-MACS[®] where offered, does not cover damage caused by failure to follow proper fabrication and installation procedures and maintenance care, for which LG Hausys Europe GmbH does not have published procedures, or damages caused by customer abuse. The above Technical description shows mandatory procedures – for complete details, refer to HI-MACS[®] Fabrication Guidelines and/or additional Technical Bulletins of latest relevant updates

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