Greenlam Industries Limited

Greenlam LAB GUARDIAN
CHEMICAL RESISTANT HPL & COMPACT

Technical Data Sheet

LAB GUARDIAN

S. NO.	PROPERTIES	UNIT	TEST METHOD AS PER EN 438 Part 2 & 4 : 2016	SPECIFIED VALUES	TYPICAL GREENLAM RESULTS	SPECIFIED VALUES	TYPICAL GREENLAM RESULTS
1	CLASSIFICATION		EN 438-4-4	COMPACT GENERAL PURPOSE STANDARD, CGS		COMPACT GENERAL PURPOSE FLAME-RETARDANT, CGF	
	Surface Coating		--	ELECTRON BEAM CURED CHEMICAL RESISTANT RESIN			
			--	Available in black and brown colour cores. Unicore optional.			
	Size Offered	mm	--	1525mm x 3660mm - Single size to suit multiple cut sizes			
2	Surface Quality	mm^2/M^2	EN 438-4, 6.2.4.2	1.0 (max.)	Complies	1.0 (max.)	Complies
3	Fibers, Hairs & Scratches	mm/M^2		10.0 (max.)	Complies	10.0 (max.)	Complies
4	Thickness & Maximum Variation	mm	EN 438-2–5	8.0 ± 0.50	8.0 ± 0.35	8.0 ± 0.50	8.0 ± 0.35
				13.0 to 16.0 ± 0.60	13.0 to 16.0 ± 0.40	13.0 to 16.0 ± 0.60	13.0 to 16.0 ± 0.40
5	Length & Width	mm	EN 438-2–6	+10mm /-0mm	+5mm /-0mm	+10mm /-0mm	+5mm /-0mm
6	Flatness	mm/M	EN 438-2–9	5.0 (max.)	**Complies**	5.0 (max.)	**Complies**
7	Edges Straightness	mm/M	EN 438-2–7	1.5 (max.)	**≤ 1**	1.5 (max.)	**≤ 1**
8	Edges Squareness	mm/M	EN 438-2–8	1.5 (max.)	**Complies**	1.5 (max.)	**Complies**
9	Resistance to Dry Heat at 160° C	Rating	EN 438-2-16	4 (min.)	**5**	4 (min.)	**5**
10	Resistance to Surface Wear, Initial point	Rev.	EN 438-2-10	150 (min.)	**450 (min.)**	150 (min.)	**450 (min.)**
11	Resistance to Water Vapour, Appearance	Rating	EN 438-2-14	4 (min.)	**5**	4 (min.)	**5**
12	Resistance to Immersion in Boiling Water (2 hours)		EN 438-2-12				
	a) Mass Increase	%		2.0 (max.)	**0.62**	3.0 (max.)	**1.10**
	b) Thickness	%		2.0 (max.)	**0.92**	6.0 (max.)	**1.86**
	c) Surface appearance	Rating		4 (min.)	**5**	4 (min.)	**5**
	d) Edge appearance			3 (min.)	**4**	3 (min.)	**4**
13	Dimensional Stability at Elevated Temperature		EN 438-2–17				
	a) Longitudinal	%		0.30(max.)	**0.10**	0.30 (max.)	**0.18**
	b) Transverse	%		0.60 (max)	**0.21**	0.60 (max)	**0.38**
14	Resistance to Impact by Large Diameter Ball		EN 438-2–21				
	a) Drop Height	mm		1800	**2000**	1800	**2000**
	b) Diameter of Indentation	mm		10 (max.)	**7**	10 (max.)	**7**
15	Resistance to Scratching, Force	Rating	EN 438-2-25	3 (min.)	**4**	3 (min.)	**4**
16	Resistance to Staining Group 1 & 2	Rating	EN 438-2–26	5	**5**	5	**5**
	Group 3	Rating		4	**≥ 4**	4	**≥ 4**
	Chemical & Stain Resistance		SEFA 8.1-PL-2010	Not more than rating 3 against 4 chemicals	Complies	Not more than rating 3 against 4 chemicals	Complies
17	Resistance to Wet Heat (100°C), Appearance	Rating	EN 438-2–18	4 (min.)	**5**	4 (min.)	**5**
18	Resistance to Crazing, Appearance	Rating	EN 438-2–24	4 (min.)	**5**	4 (min.)	**5**
19	Resistance to Cigarette Burns	Rating	--		**No requirement in the latest specification**		
20	Flexural Modulus	Mpa	EN ISO 178:2003	9000 (min.)	**11000**	9000 (min.)	**10700**
21	Flexural Strength	Mpa	EN ISO 178:2003	80 (min.)	**100**	80 (min.)	**100**
22	Tensile Strength	Mpa	EN ISO 527-2:1996		**No requirement in the latest specification**		
23	Light Fastness (Xenon Arc), Grey Scale	Rating	EN 438-2 - 27	4 to 5	**Complies**	4 to 5	**Complies**
24	Density	g/cm3	EN ISO 1183 -1 :2004	1.35	**1.38**	1.35	**1.38**
25	Resistance to fixing (Screw pull out strength) - 8.0mm thick board	N	ISO 13894 -1; 9	3000 (min.)	**>3000**	3000 (min.)	**≥3000**
	- 10.0mm thick board & above			4000 (min.)	**>4000**	4000 (min.)	**>4000**
26	Thermal Conductivity/ Resistance	W/m°K	EN-12524:2000, EN-12664:2001		**0.24**		**0.24**
27	Formaldehyde Release, Greenguard Gold standards		UL-2818:2013		**7.3 ppb**		**7.3 ppb**
28	Reaction to Fire (Tested according to EN 13823:2010 & EN 11925 - 2 :2010)*	Euro class	EN 438-7 & EN 13501-1: 2007+ A1:2009	D-s2,d0 or better	**C-S2, d0 Superior, better**	B-s2,d0	**B-S1, d0, Superior, better**

BIO-CHEMICAL PROPERTY	STANDARD	UNIT	REQUIREMENT	TEST RESULT
Antiviral Efficacy & Activity	ISO 21702-2019	% Reduction in10 minutes % Reduction in 30 minutes	No Requirement No Requirement	90.0% (Min.) 99.0% (Min.)
Virus tested		**SARS CoV-2**		
Antibacterial Efficacy & Activity	ISO 21702-2019	% Reduction in 2 hours % Reduction in 24 hours	No Requirement 95.0 (Min.)	90% (Min.) 99.9% (Min.)
		Activity after 24 hours	2.0 (Min .)	Exceeds
Virus tested		**MS2 Bacteriophage**		
Antibacterial Efficacy & Activity	JIS 2801-2012	% Reduction in 24 hours Activity after 24 hours	95.0 minimum 2.0 (Min.)	99.99 Exceeds
Bacteria tested		**1. Pseudomonas Aeruginosa, 2. Enterococcus Faecalis, 3. Candida Albicans, 4. Pseudomonas Aeruginosa, 5. Escherichia Coli, 6. Klebsiella Pneumoniae, 7. MRSA (Methicillin Resistant Staphylococcus Aureus), 8. Salmonella Enterica**		
Antifungal Efficacy	ASTM G-21-2015	Growth after 28 days	Rating 1	Rating 0 (No Growth)
Fungus tested		**1. Aspergillus niger, 2. Penicillium funicolosum, 3. Gliocladium virens, 4. Chaetobium globosum, 5. Aurobasidium pullulans**		

Greenlam Lab Guardian's surface is best suitable for stains caused by:

General purpose chemicals	Biomedical reagents	Biological spills and wastes	Petrochemical products	Food items and edible oils	All beverages	Dairy products

Note: Whereas Greenlam products are manufactured thoroughly to standards, the nature of the application procedure is beyond our control. The values given above are to the best of knowledge but without liability/warranty, expressed or implied.

Greenlam LabGuardian Chemical Spot Test – Test Protocol: SEFA PL 2010-Clause 8.1

S.NO.	CHEMICAL	TEST METHOD	RATINGS	TYPICAL VALUES – LABGUARDIAN
1	Acetate, Amyl	A	0-1	0
2	Acetate, Ethyl	A	0-2	0
3	Acetic Acid 98%	B	0-3	0
4	Acetone	A	0-1	0
5	Acid Dichromate 5%	B	0-1	0
6	Alcohol, Butyl	A	0-1	0
7	Alcohol, Ethyl	A	0	0
8	Alcohol, Methyl	A	0-1	0
9	Ammonium Hydroxide 28%	B	0	0
10	Benzene	A	0-2	0
11	Carbon Tetrachloride	A	0-1	0
12	Chloroform	A	0-2	0
13	Chromic Acid 60%	B	0-2	0
14	Cresol	A	0-2	0
15	Dichloroacetic Acid	A	0-3	0
16	Dimethylformamide	A	0-2	0
17	Dioxane	A	0-2	0
18	Ethyl Ether	A	0-1	0
19	Formaldehyde 37%	A	0-1	0
20	Formic Acid 90%	B	0-3	0
21	Furfural	A	0-3	0
22	Gasoline	A	0	0
23	Hydrofluoric Acid 37%	B	0-2	0
24	Hydrofluoric Acid 48%	B	0-3	0
25	Hydrogen Peroxide 30%	B	0-1	0
26	Iodine, Tincture of	B	0-2	2
27	Methyl Ethyl Ketone	A	0-2	0
28	Methylene Chloride	A	0-2	0
29	Monochlorobenzene	A	0-2	0
30	Naphthalene	A	0-1	0
31	Nitric Acid 20%	B	0-1	0
32	Nitric Acid 30%	B	0-1	0
33	Nitric Acid 70%	B	0-3	0
34	Phenol 90%	A	0-2	0
35	Phosphoric Acid 85%	B	0-1	0
36	Silver Nitrate, Saturated	B	0	0
37	Sodium Hydroxide 10%	B	0	0
38	Sodium Hydroxide 20%	B	0	0
39	Sodium Hydroxide 40%	B	0-1	0
40	Sodium Hydroxide, Flake	B	0	0
41	Sodium Sulfide, Saturated	B	0	0
42	Sulfuric Acid 33%	B	0	0
43	Sulfuric Acid 77%	B	0	0
44	Sulfuric Acid 96%	B	02-03	2
45	Sulfuric Acid 77%, and Nitric Acid 70%, equal parts	B	02-03	1
46	Toluene	A	0-1	0
47	Trichloroethylene	A	0-1	0
48	Xylene	A	0-1	0
49	Zinc Chloride, Saturated	B	0	0