

Resistance to stress cracking and chemical influences

LIGHTBLOCKS BOARD



Contents

This brochure provides a summary of the chemical behavior of our semifinished product groups by listing the chemical substances tested on these materials with the aim of assessing their resistance to stress cracking (crazing) and chemical attack.

2 Test results

2.1 Explanation of symbols

With the results stated in the subsequent lists we use symbols and abbreviations that are in need of explanation:

conc =	concentration of the test medium at maximum possible chemical purity or in aqueous solution
mat =	material, i.e. type of semifinished product, from which the test specimens were obtained
LB =	LIGHTBLOCKS BOARD

+ = resistant

o = limited resistance

- = not resistant

2.2 Listing of results

Alcohol, mono- and polyhydric

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
1-Butanol							
100%	LB	-	-	28	crazing, swelling	no change	-
1-Hexyl alcohol							
98%	LB	-	+	28	no change	no change	o
1-Methoxy-2-propyl alcohol							
99%	LB	-	-	1	pronounced swelling, chemical attack	no change	-
n-amyl alcohol							
100%	LB	-	o	28	crazing, swelling	no change	-
Isopropyl alcohol							
100%	LB	-	-	7	swelling, crazing	no change	-



2.2 Listing of results

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n-amyl alcohol							
100%	LB	-	o	28	crazing, swelling	no change	-
Isopropyl alcohol							
100%	LB	-	-	7	swelling, crazing	no change	-
Cyclohexanol							
99,5%	LB	-	+	28	no change	no change	o
Ethyl alcohol							
100%	LB3	-	-	7	softening, swelling	no change	-
50%	233	-	-	7	swelling	no change	-
Ethylene glycol							
100%	233	-	+	28	no change	no change	o
Ethylene glycol (antifreeze)							
50%	233	+	+	28	no change	no change	+
Glycerol							
98%	233	+	+	28	no change	no change	+
Methyl alcohol							
100%	233	-	-	1	softening, swelling	no change	-
Phenol (dissolved in water)							
5%	233	-	-	1	whitening, tackiness, swelling	no change	-

Organic solvents, fuels

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
Butyl acetate							
99%	233	-	-	1	pronounced swelling, chemical attack	no change	-



Organic solvents, fuels

Acetic ether (ethyl acetate)							
99%	LB	-	-	1	pronounced swelling, chemical attack	no change	-
Pentyl acetate (amyl acetate)							
98%	LB	-	-	28	swelling, chemical attack	no change	-
Acetone							
99%	LB	-	-	28	pronounced swelling, chemical attack	no change	-
Cyclohexanone							
99%	LB	-	-	7	specimens severely attacked	no change	-
Diethyl ketone							
99%	LB	-	-	1	pronounced swelling, chemical attack	no change	-
Ethyl methyl ketone							
99,5%	LB	-	-	1	pronounced swelling, chemical attack	no change	-
Cyclohexane							
99,5%	LB	-	+	28	no change	no change	o
Isooctane							
99,5%	LB	-	+	28	no change	no change	o
n-Heptane							
99%	LB	-	+	28	no change	no change	o
n-Hexan							
99%	LB	-	+	28	no change	no change	o
Formamide							
99%	LB	-	+	28	no change	no change	o
n-Methylformamide							
99%	LB	-	-	7	swelling, haze	no change	-
Perchloroethylene (tetrachloroethylene)							
99%	LB	-	-	28	dulling, softening of surface	no change	-
Shellsol T							
	LB	-	+	28	no change	no change	o
Turpentine substitute							
	LB	-	+	28	no change	no change	o
Turpentine oil DAB 7							
	LB	-	+	28	no change	no change	o
Carbon tetrachloride							
99%	LB	-	-	1	swelling, slight chemical attack	no change	-



Organic solvents, fuels

Diesel fuel DIN 51601							
	LB	-	+	28	no change	no change	o
FAM test fuel DIN 51604 A							
	LB	-	-	1	pronounced swelling, tackiness	no change	-
FAM test fuel DIN 51604 B							
	LB	-	-	1	chemical attack, swelling	slight haze	-
FAM test fuel DIN 51604 C							
	LB	-	-	1	chemical attack, swelling	no change	-
Fuel No. 1 DIN 53521							
	LB	-	+	28	no change	no change	o
Fuel No. 2 DIN 53521							
	LB	-	+	28	no change	no change	o
Petrol, regular (unleaded)							
	LB	-	-	28	swelling, yellowing	no change	-
Petrol, regular (leaded)							
	LB	-	-	28	colour change to light brown	no change	-
Petrol, supergrade (unleaded)							
	LB	-	-	28	swelling, yellowing	no change	-
Petrol, supergrade (leaded)							
	LB	-	-	7	swelling, softening, yellowing	no change	-
Petroleum							
	LB	-	+	28	no change	no change	o

Acids, organic and inorganic

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
Citric acid							
10%	LB	+	+	28	no change	no change	+



Acids, organic and inorganic

38%	LB	+	+	28	no change	no change	+
Formic acid							
5%	LB		+	28	no change	no change	
Acetic acid							
100%	LB	-	-	1	specimens dissolved	no change	-
5%	LB	+	+	28	no change	no change	+
Hydrofluoric acid							
40%	LB	-	-	1	swelling, softening, whitening	slight swelling	-
Lactic acid							
20%	LB	-	+	28	no change	no change	o
90%	LB	-	-	7	pronounced swelling, whitening, softening	no change	-
Oxalic acid							
8,7%	LB	+	+	28	no change	no change	+
Phosphoric acid							
10%	LB	+	+	28	no change	no change	+
50%	LB	-	+	28	no change	no change	o
85%	LB	-	-	1	pronounced swelling	no change	-
Nitric acid							
10%	LB	+	+	28	no change	no change	+
40%	LB	-	+	28	no change	no change	o
65%	LB	-	-	1	very pronounced swelling, softening	dulling, whitening, swelling	-
Hydrochloric acid							
10%	LB	+	+	28	no change	no change	+
32%	LB	+	+	28	no change	no change	+
Sulphuric acid							
3%	LB	+	+	28	no change	no change	+
30%	LB	+	+	28	no change	no change	+
98%	LB	-	-	1	pronounced swelling, whitening	dulling, whitening, swelling	-
Sulphamic acid (amidosulphonic acid)							
18%	LB	+	+	28	no change	no change	+
Tartaric acid							
50%	LB	+	+	28	no change	no change	+
Oleic acid							
99%	LB	-	+	28	no change	no change	o



Alkalis

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
Ammonia solution							
10%	LB	+	+	28	no change	no change	+
25%	LB	+	+	28	no change	no change	+
Caustic soda solution							
1%	LB	+	+	28	no change	no change	+
10%	LB	+	+	28	no change	no change	+
30%	LB	+	+	28	no change	no change	+

Salts, organic and inorganic (saturated solutions)

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
Aluminium chloride							
42%	LB	+	+	28	no change	no change	+
Ferric sulphate							
21%	LB	+	+	28	no change	no change	+
Ferric chloride							
48%	LB	+	o	28	color change to light brown	no change	o
Aluminium potassium sulphate							
5%	LB	+	+	28	no change	no change	+
Potassium carbonate							
50%	LB	+	+	28	no change	no change	+
Potassium chloride							
25%	LB	+	+	28	no change	no change	+
Potassium nitrate							
24%	LB	+	+	28	no change	no change	+
Potassium permanganate							
6%	LB	+	+	28	dulling, surface turning brown	no change	+
Potassium sulphate							
10%	LB	+	+	28	no change	no change	+
Copper sulphate							
17%	LB	+	+	28	no change	no change	+
Magnesium sulphate							
21%	LB	+	+	28	no change	no change	+
Sodium acetate							
32%	LB	+	+	28	no change	no change	+



Sodium carbonate (soda ash)							
2%	LB	+	+	28	no change	no change	+
20%	LB	+	+	28	no change	no change	+
Sodium chloride (common salt)							
10%	LB	+	+	28	no change	no change	+
Sodium phosphate							
20%	LB	+	+	28	no change	no change	+
Sodium dihydrogen phosphate							
50%	LB	+	+	28	no change	no change	+
Disodium hydrogen phosphate							
8,5%	LB	+	+	28	no change	no change	+
Sodium hydrogen sulphate							
40%	LB	+	+	28	no change	no change	+
Sodium nitrate							
45%	LB	+	+	28	no change	no change	+
Sodium sulphate (Glauber's salt)							
25%	LB	+	+	28	no change	no change	+
Sodium chlorate							
49%	LB	+	+	28	no change	no change	+
Sodium thiosulphate							
41%	LB	+	+	28	no change	no change	+
Zinc chloride							
50%	LB	o	+	28	no change	no change	o
Zinc sulphate							
35%	LB	+	+	28	no change	no change	+
Urea							
51%	LB	+	+	28	no change	no change	+
Hydroquinone							
6,7%	LB	-	o	28	color change to transparent brown	no change	-

Inorganic compounds

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
Hydrazine							
15%	LB	+	+	28	no change	no change	+



Hydrogen peroxide (hydrogen dioxide, Perhydrol)							
3%	LB	+	+	28	no change	no change	+
30%	LB	+	+	28	no change	no change	+
Sodium hypochlorite							
12%	LB	+	+	28	no change	no change	+
Water, demineralised							
	LB	+	+	28	no change	no change	+

Organic compounds

Chemical Conc	Mat	RC	CB	EZ	Evaluation of CR	CR, short-term test	OE
Dibutyl phthalate							
99%	LB	-	-	28	chemical attack	no change	-
Diisobutyl phthalate							
97%	LB		+	28	no change	no change	
Paraffin, liquid							
100%	LB	+	+	28	no change	no change	+
Di(2-ethylhexyl) sebacate (dioctyl sebacate)							
	LB	-	+	28	no change	no change	o
Triorthocresyl - phosphate							
	LB	-	+	28	no change	no change	o
Rizinusöl							
	LB	-	+	28	no change	no change	+
Sojabohnenöl							
	LB	-	+	28	no change	no change	o
Triethanolamin							
98%	LB	+	+	28	no change	no change	+

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