PURICELLI DECORATIVE SURFACES

PURICELLI HPL/HCPL CHEMICAL RESISTANCE OF MELAMINE SURFACE

DATA SHEET

Puricelli high-pressure laminates (HPL and HCPL) are produced according to the requirements of EN438, thus featuring a durable melamine surface. Only a few chemicals can affect the surface. The following tables list the chemicals according to their impact on the melamine surface.

Chemical resistance includes the following product groups:

For indoor use Purilam, Puricompact

HCPL thin laminates from 0.1 to 0.8 mm	manufactured on high-pressure continuous presses
HPL thin laminates from 0,7 to 3,0 mm	manufactured on static high-pressure presses
HPL compact panels from 2,0 to 25 (30) mm	manufactured on static high-pressure presses

For exterior use Serie EasyCom und SUPER

HPL compact panels from 2 to 4 mm	manufactured on static high-pressure presses
HPL compact panels from 4 to 16 mm	manufactured on static high-pressure presses

CLEANING AND CARE

HPL surfaces are resistant to common everyday dirt and easy to clean. Colors, paints, or markings that cannot be removed with hot or cold water, in combination with a common cleaner, can also be removed with organic solvents.

Abrasive cleaning agents destroy the surface and should not be used.

APPLICATIONS

Pharmacies, drugstores, and pharmaceutical companies
Childcare centers, schools, public facilities
Production facilities, car washes
...

Care and medical facilities
Food industry and trade
Public transport and building claddings indoors and outdoors
...

Food and juices, solvents, cosmetics and cosmetic cleaners (e.g. nail polish remover), pharmaceuticals, as well as disinfectants, for example, ethanol 70% and formalin 1% and 5% do not pose any problems for the surface. There is no migration (e.g. of plasticizers or other substances) that affects food, thus contact of HPL with food is safe and approved.

Medical and biological, physical and technical laboratories

Equipment in hairdressing and nail studios

HPL is also well suited for these areas because the surfaces are easy to clean and disinfect. However, strongly coloring liquids, for example, for staining samples for the microscope or highly oxidizing substances such as hydrogen peroxide, can lead to surface changes. Residues of hair dye or bleach should also be removed promptly.

Chemical laboratories

In chemical laboratories, a wide variety of substances are used. HPL have the advantage that they are insensitive to most of these substances. Some chemicals can lead to changes on the surface depending on their concentration, pH value, exposure time, and temperature. Therefore, residues of such substances should be removed immediately.
Some chemicals also cause irreversible changes to the surface of HPL. Contact with HPL should therefore be avoided. The appearance of the HPL surface will deteriorate under the influence of aggressive vapors such as sulfur dioxide, chlorine, bromine, etc., but the functionality is generally not affected.

Overview of surface resistance

The following tables in alphabetical order show the chemical resistance according to EN438-2. If substances are not listed for your specific application, a compatibility test should be conducted.

1. HPL is resistant to the following substances. After 16 hours of exposure, the following materials do not lead to any surface changes.

CHEMICAL RESISTANCE, exposure time max. 16 hours according to EN438-2			
SUBSTANCE	Chemical Formula	SUBSTANCE	Chemical Formula
A			
Acetone	CH_3COCH_3	Ammonium thiocyanate	NH_4SCN
Alum solution	$KAI(SO_4)_3$	Amyl acetate	$CH_3COOC_5H_{11}$
Aldehydes	RCHO	Amyl alcohol	$C_5H_{11}OH$
Alcohols (all)	ROH	Alpha-naphthol	$C_{10}H_7OH$
Alcoholic beverages	ROH	Alpha-naphthylamine	$C_{10}H_7NH_2$
Aluminum sulphate	$Al_2(SO_4)_3$	Arabinose	$C_5H_{10}O_5$
Formic acid up to 10%	HCOOH	Ascorbic acid	C_6HSO_6
Amides	$RCONH_2$	Asparagine	$C_4HSO_3N_2$
Amines (all)		Aspartic acid	$C_4H_7O_4N$
Ammonia	NH_4OH	Ethyl acetate	$CH_3COOC_2H_5$
Ammonium chloride	NH_4Cl	Isoamyl acetate	$CH_3COOC_5H_{11}$
Ammonium sulphate	$(NH_4)_2SO_4$	Vinegar acid / Acetic acid	CH_3COOH
B			
Barium chloride	$BaCl_2$	Boric acid	H_3BO_3
Barium sulphate	$BaSO_4$	Benzoic acid	C_6H_5COOH
Benzaldehyde	C_6H_5CHO	Butyl acetate	$CH_3COOC_4H_9$
Benzidine	$NH_2C_6H_4C_6H_4NH_2$	Benzene	C_6H_6
Blood / Blood group test serums		Butyl alcohol	C_4H_9OH
C			
Cadmium acetate	$Cd(CH_3COO)_2$	Cement	
Cadmium sulphate	$CdSOo_4$	Chloral hydrate	$CCl_3CH(OH)_2$
Calcium carbonate	$CaCO_3$	Chlorobenzene	C_6H_5Cl
Calcium chloride	$CaCl_2$	Cholesterol	$C_{27}H_{45}OH$
Calcium hydroxide	$Ca(OH)_2$	Citric acid	$C_6H_8O_7$
Calcium nitrate	$Ca(NO_3)_2$	Cocaine	$C_{17}H_{21}O_4N$
Calcium oxide	CaO	Copper sulphate	$CuSO_4$
Cane sugar	$C_{12}H_{22}O_{11}$	Cresol	$CH_3C_6H_4OH$
Carbolic acid	C_6H_5OH	Cresylic acid	$CH_3C_6H_4COOH$
Carbol-xylene	C_6H_5OH-$C_6H_4(CH_3)_2$	Cyclohexane	C_6H_{12}
Carbon tetrachloride	CCI_4		
D			
Digitonin	$C_{56}H_{92}O_{29}$	Dioxane	$C_4H_8O_2$
Dimethylformamide	$HCON(CH_3)_2$	Dulcitol	$C_6H_{14}O_6$
Dimethyl sulfoxide	$(CH_3)_2SO$		
F			
Formaldehyde	HCHO	Fructose / Galactose	$C_6H_{12}O_6$
G			
Gelatine		Glycine	NH_2CH_2COOH
Gypsum	$CaSO_4\ _2H_2O$	Glycol (all)	$HOCH_2\ CH_2OH$
Glucose	$C_6H_{12}O_6$	Graphite (Carbon)	C
Glycerol	$CH_2OHCHOHCH_2OH$	Galactose	$C_6H_{12}O_6$
H			
Heptanol	$C_7H_{15}OH$	Hexanol	$C_6H_{13}OH$
Hexane	C_6H_{14}	Hydroquinone	HOC_6H_4OH

CHEMICAL RESISTANCE, exposure time max. 16 hours according to EN438-2			
SUBSTANCE	Chemical Formula	SUBSTANCE	Chemical Formula
I			
Inositol	$C_6H_6(OH)_6$	Isopropanol	C_3H_6OH
K			
Ketones (all)	RCOR		
L			
Lactose	$C_{12}H_{22}O_{11}$	Levulose	$C_6H_{12}O_6$
Lactic acid	$CH_3CHOHCOOH$	Lithium carbonate	Li_2CO_3
Lead acetate	$Pb(CH_3COO)_2$	Lithium hydroxide up to 10%	LiOH
Lead nitrate	$Pb(NO_3)_2$		
M			
Magnesium chloride	$MgCl_2$	Mannose	$C_6H_{12}O_6$
Magnesium carbonate	$MgCO_3$	Mercury	Hg
Magnesium hydroxide	$Mg(OH)_2$	Methanol	CH_3OH
Magnesium sulphate	$MgSO_4$	Methylene chloride	CH_2Cl_2
Maltose, lactose	$C_{12}H_{22}O_{11}$	Myoinositol	$C_6H_6(OH)_6$
Mannitol	$C_6H_{14}O_6$		
N			
nail polish		nickel sulphate	$NiSO_4$
nail polish remover		nicotine	$C_{10}H_{14}N_2$
O			
Octanol (Octyl alcohol)	$C_8H_{17}OH$	Oleic acid	$C_{18}H_{34}O_2$
Olive oil		Mineral oils	
P			
1,2-Propylene glycol	$C_3H_8O_2$	Potassium carbonate	K_2CO_3
p-Aminoacetophenone	$NH_2\ C_6H_4COCH_3$	Potassium chloride	KCl
Paraffins	CnH_{2n+2}	Potassium hexacyanoferrate	$K_4Fe(CN)_6$
Paraffin oil		Potassium hydroxide (Potassium hydroxide) ≤ 10%	KOH(aq)
Pentanol	$C_5H_{11}OH$		
Perchloric acid	$HClO_4$	Potassium iodate	KIO_3
Phenol and Phenol derivatives	C_6H_5OH	Potassium sodium tartrate	$KNaC_4H_4O_6$
Phenolphthalein	$C_{20}H_{14}O_4$	Potassium nitrate	KNO_3
p-Nitrophenol	$C_6H_4NO_2OH$	Potassium sulphate	K_2SO_4
Potassium aluminum sulphate	$KAl(SO_4)_2$	Potassium tartrate	$K_2C_4H_4O_6$
Potassium bromates	$KBrO_3$	Propanol	C_3H_7OH
Potassium bromide	KBr	Pyridine	C_5H_5N
R			
Raffinose	$C_{18}H_{32}O_{11}\ 5H_2O$	Rhamnose	$C_6H_{12}O_5\ H_2O$
S			
Salicylaldehyde	$C_6H_4OH\ CHO$	Sodium sulphate	Na_2SO_4
Salicylic acid	$C_6H_4OHCOOH$	Sodium sulphide	Na_2S
Sodium acetate	CH_3COONa	Sodium sulphite	Na_2SO_3
Sodium carbonate	Na_2CO_3	Sodium tartrate	$Na_2C_4H_4O_6$
Sodium chloride	NaCl	Sodium thiosulfate	$Na_2S_2O_3$
Sodium citrate	$Na_3C_6H_507\ 5H_2O$	Sodium hydroxide up to 10%	NaOH
Sodium diethyl barbiturate	$NaC_8H_{11}N_2O_3$	Sorbitol	$C_6H_{14}O_6$
Sodium bicarbonate	$NaHCO_3$	Starch	(C6H10O5)n
Sodium hydrogen sulphite	$NaHSO_3$	Stearic acid	$C_{17}H_{35}COOH$
Sodium hyposulfite	$Na_2S_2O_4$	Styrene	C_8H_8
Sodium nitrate	$NaNO_3$	Sugar and sugar derivatives	
Sodium phosphate	Na_3PO_4	Sulphur	S
Sodium silicate	Na_2SiO_3		

CHEMICAL RESISTANCE, exposure time max. 16 hours according to EN438-2			
SUBSTANCE	Chemical Formula	SUBSTANCE	Chemical Formula
T			
Talcum	$Mg_3Si_4O_{10}(OH)_2$	Thymol	$C_{10}H_{14}O$
Tannin	$C_{76}H_{52}O_{46}$	Toluene	$C_6H_5CH_3$
Turpentine		Trehalose	$C_{12}H_{22}O_{11}$
Tetrahydrofuran	C_4H_8O	Trichlorethylene	C_2HCl_3
Tetralin	$C_{10}H_{12}$	Tryptophan	$C_{11}H_{12}O_2N_2$
Thiourea	$NH_2C_SNH_2$		
U			
Uric acid	$C_5H_4N_4O_3$	Urea solution	$CO(NH_2)_2$
V			
Vanillin	$C_8H_8O_3$		
W			
Water	H_2O		
X			
Xylene	$C_6H_4(CH_3)_2$		
Z			
Zinc chloride	$ZnCl_2$	Zinc sulphate	$ZnSO_4$

2. HPL surfaces are not affected by the following substances if they only act for 10-15 minutes. The surface must be wiped with a damp cloth within this time and then dried.

LIMITED CHEMICAL RESISTANCE, exposure time max. 10-15 minutes, according to EN438-2			
SUBSTANCE	Chemical Formula	SUBSTANCE	Chemical Formula
Aluminum chloride	$AlCl_3$	Lithium hydroxide	LiOH
Amido sulfonic acid	NH_2SO_3H	Methylene blue	$C_{16}H_{18}N_3ClS$
Ammonium hydrogen sulphate	NH_4HSO_4	Millon's reagent	OHg_2NH_2Cl
Arsenic acid ≤ 10%	H_3AsO_4	Sodium hydrogen sulphate	$NaHSO_4$
Iron (II) chloride solution ≤ 10%	$FeCl_2$	Sodium hypochlorite (Chlorine solution)	NaOCl
Iron (III) chloride solution Dye and bleach	$FeCl_3$		
		Sodium hydroxide over 10%	NaOH
Fuchsin solution	$C_{19}H_{19}N_3O$	Oxalic acid	$C_2H_2O_4$
Iodine solution	I_2	Phosphoric acid up to 10%	H_3PO_4
Potassium hydroxide over 10%	KOH	Picric acid	$C_6H_2OH(NO_2)_3$
Potassium chromate	K_2CrO_4	Mercury dichromate	$HgCr_2O_7$
Potassium dichromate	$K_2Cr_2O_7$	Nitric acid up to 10%	HNO_3
Potassium hydrogen sulphate	$KHSO_4$	Hydrochloric acid up to 10%	HCl
Potassium iodide	KI	Sulfuric acid up to 10%	H_2SO_4
Potassium permanganate	$KMnO_4$	Silver nitrate	$AgNO_3$
Crystal violet (Gentian violet)	$C_{25}H_{30}N_3Cl$	Sublimate solution	HgC_{l2}
descaler		Hydrogen peroxide 3-30%	H_2O_2

3. HPL surfaces are damaged by the following substances, even with short exposure times. Contact should be avoided at all costs.

NO CHEMICAL RESISTANCE, even with short exposure time			
SUBSTANCE	Chemical Formula	SUBSTANCE	Chemical Formula
Aluminum chloride	$AlCl_3$	Potassium permanganate	$KMnO_4$
Amido sulfonic acid	NH_2SO_3H	Lithium hydroxide	LiOH
Ammonium hydrogen sulphate	NH_4HSO_4	Mercury dichromate	$HgCr_2O_7$
Arsenic acid ≤ 10%	H_3AsO_4	Methylene blue	$C_{16}H_{18}N_3ClS$
Crystal violet (Gentian violet)	$C_{25}H_{30}N_3Cl$	Millon's reagent	OHg_2NH_2Cl
Fuchsin solution	$C_{19}H_{19}N_3O$	Nitric acid up to 10%	HNO_3
Hydrochloric acid up to 10%	HCl	Oxalic acid	$C_2H_2O_4$
Hydrogen peroxide 3-30%	H_2O_2	Phosphoric acid up to 10%	H_3PO_4
Iron (II) chloride solution ≤ 10%	$FeCl_2$	Picric acid	$C_6H_2OH(NO_2)_3$
Iron (III) chloride solution Dye and bleach	$FeCl_3$	Silver nitrate	$AgNO_3$
		Sodium hydrogen sulphate	$NaHSO_4$
Iodine solution	I_2	Sodium hydroxide over 10%	NaOH
Potassium hydroxide over 10%	KOH	Sodium hypochlorite (Chlorine solution)	NaOCl
Potassium chromate	K_2CrO_4		
Potassium dichromate	$K_2Cr_2O_7$	Sublimate solution	HgC_{l2}
Potassium hydrogen sulphate	$KHSO_4$	Sulfuric acid up to 10%	H_2SO_4
Potassium iodide	KI		

4. HPL surfaces are attacked by aggressive gases, deteriorating the gloss level and appearance. However, the mechanical properties are generally not affected.

AGGRESSIVE GASES, damage appearance and gloss level			
SUBSTANCE	Chemical Formula	SUBSTANCE	Chemical Formula
Brom	Br_2	Smoking acids	
Chlorine	Cl_2	Sulphur dioxide	SO_2
Nitrogen gases	NO_x / N_xO_y		
Hydrogen peroxide approx. 35% evaporates during 24 h for cleanroom disinfection			H_2O_2

Please note that the listed substances correspond to the current state of technology and only represent a selection of the most common substances. The tables serve as a general overview and have been listed in alphabetical order to the best of our knowledge and belief. However, Puricelli does not guarantee completeness and accuracy.

If substances other than those listed are used, individual testing is recommended, and we are happy to provide the desired samples. Each customer must decide for themselves whether the information is applicable to their specific application. We are happy to assist you with further information.