ZTHPL | POLYBETT

About Compact "HPL" :

Congratulations

on choosing HPL as a decorative Surface Material which has special beauty, outstanding clean ability and durability properties. HPL, manufacturing is based on proven technology. HPL was developed in order to resist the hard requirements of daily use.

Although HPL is extremely durable and needs minimal care due to its non porous surface, it is nevertheless not indestructible. In the following we have listed some cleaning recommendations, that will ensure the value of your product stays.

Cleaning

Clean the surface simply using water and dry it with a paper tissue or a soft cloth. If the impurities cannot be removed, use a common cleaning agent without abrasive agents. Afterwards clean the surface with water and dry it.

Persistent Contamination

Use clean, hot water, clean cloths or paper tissues. Use normal cleaning agent without abrasive constituent, washing powder (especially heavy-duty detergent), liquid soap or hard soap. Remove dirt with solution of cleaning agent, or let it soak according to the degree of soiling, then wash off with clean water or glass cleaner. Wipe several times if necessary. Remove all traces of cleaning agent, to prevent streaks developing. With a clean, absorbent cloth or paper towel wipe the surface dry.

The above procedure can be improved by means of a plastic cleaning sponge or a nylon brush .

Contaminations/Stains

HPL, a homogeneous, and non-porous material is resistant to most household chemicals. Although liquids cannot penetrate into the material, contaminations or stains should be wiped off immediately. Longer contact with mainly acidic substances e.g. aggressive house hold cleaner, metal cleaner, toilet cleaner and certain oven cleaner should be avoided.

1- General

In these recommendations emphasis is placed on presenting the chemical resistance of decorative high-pressure laminates (HPL conforming to EN 438) and the application possibilities arising from it. Due to its melamine resin surface decorative laminates offers especially effective resistance to most chemicals and has excellent mechanical characteristics and high temperature resistance.

HPL can therefore be used in situations where its surface will be exposed to the following:

-Chemicals used in laboratories and in manufacturing

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-Solvents

-Disinfectants

-Dyes

-Bleaching agents

-Cosmetics

-Medicines

The ability of HPL to withstand the action of individual chemicals is shown in Section 4. Careful note should be taken of all the relevant recommendations and notes contained in this manual.

2. Application areas of high-pressure decorative laminates

HPL is available in almost unlimited variety of decors and colours. Moreover, the material permits the creation of numerous shapes (e.g. by subsequent forming or in the form of high pressure compact boards) and also offers the possibility of covering large areas without gaps. This, as well as its outstanding mechanical properties like the high wear resistance, makes HPL suitable for installations in the following critical areas:

Dispensing chemists, Medical centres, hospitals, veterinary practices

Laboratories:	Shop fitting:	- Meat-processing industry:
-Chemistry labs	- Hairdressers	- Meat and sausage factories
-Photographic labs	- Butchers	- Abattoirs
-Biological / medical labs	- Food stores	

General rules applying to all these applications are as follows:

2.1 Vertical surfaces

For use on vertical surfaces such as doors, furnishings or wall claddings, HPL panels can generally be used without restrictions. The recommendations below therefore apply predominantly to HPL work surfaces.

2.2 Horizontal surfaces

When selecting a surface texture for HPL panels for use on horizontal surfaces, the type of stresses to which it will be exposed should be taken into account.

2.3 Special properties

HPL is resistant to most chemicals (see Section 4.1.) Some chemicals however may attack the surface. Critical in that respect are:

• the concentration of the chemical

• the pH – value (the acid / alkaline balance)

• the exposure time

• the temperature

It is therefore recommended to remove as quickly as possible chemicals listed under section 4.2. whereas chemicals of section 4.3. must be removed immediately.

HPL panels offer considerably better resistance to heat than most thermoplastics (e.g. PVC, PE, PS, ABS). HPL can withstand temperatures of at least 180 °C (conforming to EN 438 Part 2, § 8). Extreme heat, e.g. from Bunsen burners or sources of infrared rays can result in discolouration or destruction through carbonization. In such situations the HPL surfaces should be protected by heat-resistant (e.g. ceramic) surfaces.

2.4 Cleaning and maintenance

HPL is easy to clean and resistant to organic solvents. For stains or marks that cannot be removed using cold or hot water in combination with a common detergent, organic solvents can be used. Frequent cleaning with harsh abrasives can result in damage to the melamine surface, with the result that resistance to the action of chemicals is reduced. Such abrasive cleaning agents should only be used with caution.

3.Special characteristics of HPL in the various application fields

3.1 Dispensing chemists, pharmacies and drugstores

The following products do not pose any problem to HPL:

- Foodstuffs and juices

- Solvents and detergents

- Cosmetics and cosmetic cleaning agents (e.g. nail varnish remover)

- Medicines

Chemicals and cleaning agents, varnishes and paints should be generally transferred to the laboratories in closed containers, then placed and dispensed in special areas. Since the nature and composition of such chemicals are not always known, it is advisable to remove any spillage immediately. Dried varnishes and paints can be removed easily using solvents, e.g. alcohol, acetone, providing they have not hardened.

3.2 Medical centre, treatment rooms, operating theatres

HPL is a useful material in such areas, as it offers excellent cleaning properties and is easy to disinfect. It can withstand disinfectants based on:

e.g.: Ethanol 70% Aldehydes Alcohols

e.g.: Formalin 1% and 5%

e.g.: p-chloro-m-kresol 0.3% Phenols

Quaternary Ammonium Compounds

HPL can cover large areas without any joints or gaps. Blood, urine, faeces and ointments etc. will not affect the surface and can be removed very easily. HPL is transparent to X-rays and is therefore very suitable for examination tables. HPL is not damaged when exposed to UV, IR and laser rays emitted by medical equipment.

3.3 Medical and biology labs

HPL is comparatively well suited for use in these types of laboratories (easy to clean and to disinfect). Nevertheless, substances containing strong dyes (e.g. liquids used for colouring specimens prior to viewing with a microscope) andmsubstances with strong oxidizing properties (e.g. hydrogen peroxide) can leave marks if such solutions are left on the surface for any more than a short time. Such substances should therefore be removed immediately.

3.4 Equipment in hairdressing salons

The majority of products used in hairdressing salons do not affect HPL. Dried deposits of nail varnish, hairsprays or beauty products (lipstick, pomade) can be removed easily using organic solvents like alcohol or acetone. Spots, stains or marks caused by hair dyes and bleaching agents should be removed as soon as possible in order to avoid discoloration of the surface.

3.5 Photographic laboratories

The chemicals generally used for developing film and in fixative baths will not damage the HPL surface, but solutions containing dyes and “silver salts” can cause discoloration. It is therefore of particular importance to remove such spillages as soon as possible.

3.6 Physical or technical laboratories

In general, HPL can be used for work surfaces without any restrictions. As in physical or technical laboratories surfaces may be subjected to a higher mechanical stress, it is advisable to install surfaces with a rougher surface texture.

Battery acid - Warning!: Any drops should be removed immediately as otherwise they will leave marks or permanent stains on the surface.

3.7 Chemical laboratories

Chemical laboratories usually work with aggressive substances but HPL has the advantage of being resistant to most of them (see section 4.1.) Some chemicals, however, depending on their type, pH value and concentration, can damage the laminates surface if allowed to react for a prolonged time (examples: see section 4.2.). Residues of such substances should therefore be removed immediately.

Chemical formula	Substance	Chemical formula	Substance
$C_{10}H_7NH_2$	A-naphthaline	NH_4OH NH_4CL	Ammonia Ammonium chloride
$C_{10}H_7OH$ CH_3COOH $CH_3COOC_2H_5$	A-naphthole Acetic acid Acetic acid ethyl ester	$(NH_4)_2SO_4$	Ammonium sulphate
$CH_3COOC_5H_{11}$	Acetic acid iso-amyl ester	NH_4SCN	Ammonium thiocyanate
CH_3COCH_3	Acetone	$CH_3COOC_5H_{11}$	Amyl acetate
ROH ROH RCHO $KAI(SO_4)_3$	Alcoholic beverages Alcohols (any) Aldehydes Alum solution	$C_5H_5NH_2$	Amyl alcoho
$Al_2(SO_4)_3$	Aluminium sulphate	$C_5H_{10}O_5$	Arabinose
$RCONH_2$	Amides Amines (any)	C_6H8O_6	Ascorbic acid

The chemicals listed under section 4.3. attack most materials and can also cause irreversible changes to the decorative surface of HPL. When using such substances, HPL surfaces should be protected, e.g. by using a suitable covering.

3.8 Foodstuffs industry, food stores

Its clean ability and resistant to disinfectants make HPL panels especially well-suited for these fields. There is no migration affecting foodstuffs and, consequently, HPL is approved for contact with foodstuffs.

4. Chemical resistance of HPL

The list below does not claim to be complete, yet providing an overview of the resistance of HPL at room temperature against the most commonly used substances (in solid, solution, liquid or gaseous form). It is advisable to make inquiries about the resistance of HPL to any particular chemicals not included below.

4.1 Chemicals to which HPL has full resistance

HPL is resistant to the substances and reagents listed below. Even if the panels are exposed to them over a long period (this could be 16 hours as in EN 438, Part 2 § 15), these substances will not alter the surface of the panels.

Chemical formula	Substance	Chemical formula	Substance
$C_4H_7O_4N$ $C_4H_8O_3N_2$	Asparagic acid Aspargine	$Ca(OH)_2$	Calcium hydroxide
$BaCl_2$	Barium chloride	CaO $Ca(NO_3)_2$	Calcium oxide Calcium nitrate
$BaSO_4$	Barium sulphate	$C_{12}H_{22}H_{11}$	Cane sugar
C_6H_5CHO C_6H_6	Benzaldehyde Benzene	C_6H_5OH-$C_6H_4(CH_3)_2$	Carbol-xylene

$NH_2C_6H_4C_6H_4NH_2$	Benzidine		C_6H_5OH CCl_4	Calbolic acid Carbon tetra chloride
C_6H_5COOH	Benzonic acid Blood group test Sera		contains NaOH	Caustic soda up to 10%
H_3BO_3	Boric acid		$CCl_3CH(OH)_2$	Chloral hydrate
$CH_3COOC_4H_9$	Butyl acetate		$CHCl_3$	Chlorobenzene
C_4H_9OH $Cd(CH_3COO)_2$	Butyl alcohol Cadmium acetate		$C_{27}H_{45}OH$ $C_6H_8O_7$	Cholesterol Citric acid
$CdSO_4$	Cadmium sulphate		$C_{17}H_{21}O_4N$ NaCl	Cocaine Cooking salt
$CaCO_4$	Calcium Carbonate (chalk)		$CuSO_4$	Copper sulphate
$CaCl_2$	Calcium chloride		$CH_3C_6H_4OH$	Cresol

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Chemical formula	Substance	Chemical formula	Substance
$CH_3C_6H_4COOH$ $C_6H_{11}OH$ $C_{56}H_{92}O_{29}$	Cresylic Acid Cyclo hexane Digitionine	H_2O_2	Hydrogen peroxide 3%
$HCON(CH_3)_2$	Dimethyl fornamide	HOC_6H_4OH $C_6H_6(OH)$	Hydroquinone Inorganic salts and their mixtures (exception No 4.2.) Inosite
$C_4H_8O_2$	Dioxane	C_3H_6OH RCR	Iso-propanol Ketone (any)
$C_6H_{14}O_6$	Dulcite	$CH_3CHOHCOOH$ $C_{12}H_{22}O_{11}$	Lactic acid Lactic sugar
$(CH_3)_2SO$ RCOOR'	Dimethyl sulphoxide Ester (any)	$C_{12}H_{22}O_{11}$	Lactose
ROR'	Ether (any)	$Pb(CH_3COO)_2$	Lead acetate
$CH_3COOC_2H_5$	Ethyl acetate	$Pb(NO_3)_2$	Lead nitrate
$CH_2{:}CCl_2$	Ethylene chloride	$C_6H_{12}O_6$	Levulose
HCHO HCOOH	Formaldehyde Formic acid up to 10%	LiOH up to 10%	Lithium Hydroxide
CH_3COOH $C_6H_{12}O_6$	Glacial acetic acid Glucose	Li_2CO_3	Lithium carbonate
CH_2OH CHOH CH_2OH NH_2CH_2COOH	Glycerine Glycocol	$MgCO_3$	Magnesium carbonate
$HOCH_2$ CH_2OH C	Glycol (any) Graphite	$MgCl_2$	Magesium chloride

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$C_6H_{13}OH$	Hexanol	$Mg(OH)_2$	Magnesium hydroxide
$MgSO_4$	Magnesium sulphate	$C_{20}H_{14}O_4$	Phenolphthaleine Phenol & phenolic derivates
$C_{12}H_{22}O_{11}$	Maltose		
$C_6H_{14}O_6$	Mannite		
$C_6H_{12}O_6$	Mannose		
CH_2CL_2	Methylene chloride		
Hg	Mercury		
$C_6H_6(OH)_6$	Mesoinosite Methanol		
CH_3OH	Mixtures (exception: No 4.2.)		
$NiSO_4$	Nickel sulphate		
$C_{10}H_{14}N_2$	Nicotine		
$C_6H_{17}OH$	Octanol (Octylacohol) Oleic acid		
$CH3(CH_2)_7CH:CH(CH_2)_7COOH$ NH_2 $C_6H_4COOCH_3$	P-amino aceto phenome P-nitro phenol		
C_NH_{2n+2} $C_6H_4NO_2OH$	Paraffin		
$C_5H_{11}CH$	Pentanol		
$HCLO_4$	Percaulic acid		

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