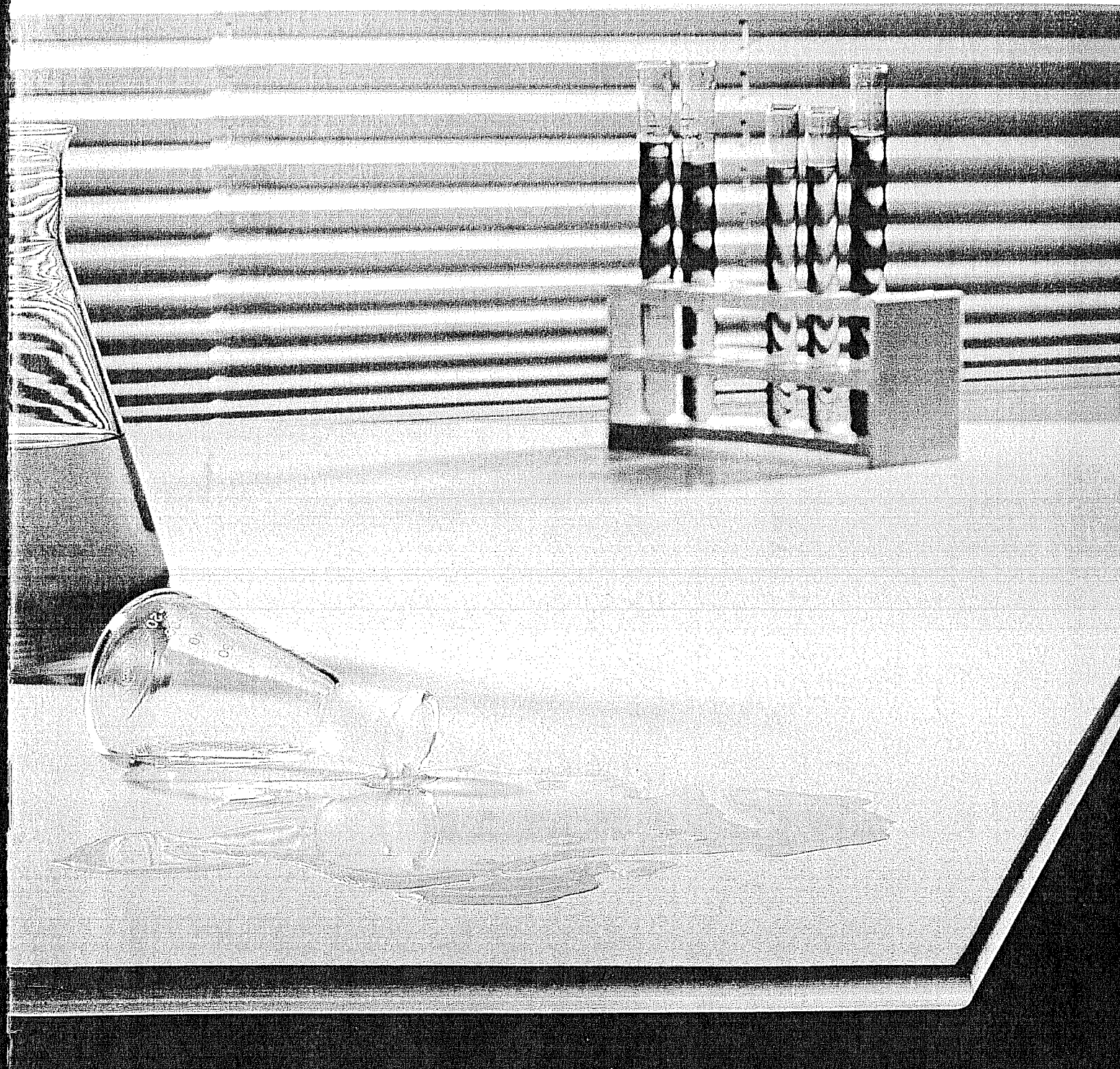


h i g h p r e s s u r e l a m i n a t e s

HPL - High Pressure Laminates



# RESISTANCE TO SUBSTANCES AND REAGENTS

## 1

HPL is resistant to the following substances and reagents. These substances do not change the appearance of the surface of the HPL even after prolonged contact.

SUBSTANCE	CHEMICAL FORMULA		
4-amino aceto-phenone	$\text{NH}_2\text{C}_6\text{H}_4\text{COCH}_3$	Calcium carbonate (chalk)	$\text{CaCO}_3$
1-naphtylamine	$\text{C}_{10}\text{H}_7\text{NH}_2$	Calcium chloride	$\text{CaCl}_2$
1-naphtole	$\text{C}_{10}\text{H}_7\text{OH}$	Calcium hydroxide	$\text{Ca(OH)}_2$
Acetic acid	$\text{CH}_3\text{COOH}$	Calcium oxide	$\text{CaO(aq)}$
Acetic acid ethyl ester	$\text{CH}_3\text{COOC}_2\text{H}_5$	Calcium nitrate	$\text{Ca(NO}_3)_2$
Acetic acid isoamyl ester	$\text{CH}_3\text{COOC}_5\text{H}_{11}$	Cane sugar	$\text{C}_{12}\text{H}_{22}\text{O}_{11}$
Acetone	$\text{CH}_3\text{COCH}_3$	Carbol xylene	$\text{C}_6\text{H}_5\text{OH-C}_6\text{H}_4(\text{CH}_3)_2$
Active carbon		Carbolic acid	$\text{C}_6\text{H}_5\text{OH}$
Adhesives - water soluble		Carbon tetrachloride	$\text{CCl}_4$
Alcoholic beverages		Caseine	
Alcohols		Castor oil	
- Primary	$\text{RCH}_2\text{OH}$	Caustic soda up to 10%	$\text{NaOH}$
- Secondary	$\text{RR}'\text{CHOH}$	Cedar wood oil, thickened	
- Tertiary	$\text{RR}'\text{R}''\text{COH}$	Cement	
Aldehydes	$\text{RCHO}$	Chloral hydrate	$\text{Cl}_3\text{CCH(OH)}_2$
Alum solution	$\text{KAl(SO}_4)_2$	Chlorobenzene	$\text{C}_6\text{H}_5\text{Cl}$
Aluminium sulphate	$\text{Al}_2(\text{SO}_4)_3$	Cholesterol	$\text{C}_{27}\text{H}_{45}\text{OH}$
Amides	$\text{RCONH}_2$	Citric acid	$\text{HO}_2\text{CCH}_2\text{C(OH)(CO}_2\text{H)CH}_2\text{CO}_2\text{H}$
Amines		Clay	
- Primary	$\text{RNH}_2$	Coal	
- Secondary	$\text{RR}'\text{NH}$	Cocaine	$\text{C}_{17}\text{H}_{21}\text{O}_4\text{N}$
- Tertiary	$\text{RR}'\text{R}''\text{N}$	Coffee	
Ammonia	$\text{NH}_4\text{OH}$	Caffeine	
Ammonium chloride	$\text{NH}_4\text{Cl}$	Cooking salt	
Ammonium sulphate	$(\text{NH}_4)_2\text{SO}_4$	Copper sulphate	$\text{CuSO}_4$
Ammonium thiocyanate	$\text{NH}_4\text{SCN}$	Cosmetics	
Amyl acetate	$\text{CH}_3\text{COOC}_5\text{H}_{11}$	Cresol	$\text{CH}_3\text{C}_6\text{H}_4\text{OH}$
Amyl alcohol	$\text{C}_4\text{H}_9\text{CH}_2\text{OH}$	Cresylic acid	$\text{CH}_3\text{C}_6\text{H}_4\text{COOH}$
Aniline	$\text{C}_6\text{H}_5\text{NH}_2$	Cyclo hexane	$\text{C}_6\text{H}_{12}$
Animal fats		Cyclo hexanol	$\text{C}_6\text{H}_{11}\text{OH}$
Animal feedstock		Detergents	
Arabinose	$\text{C}_5\text{H}_{10}\text{O}_5$	Dextrose	$\text{C}_6\text{H}_{12}\text{O}_6$
L-Ascorbic acid (vitamin C)	$\text{C}_6\text{H}_8\text{O}_6$	Digitonine	$\text{C}_{56}\text{H}_{92}\text{O}_{28}$
Asparagic acid	$\text{HOCOCH}_2\text{CH(NH}_2\text{)CO}_2\text{H}$	Dimethyl formamide	$\text{HCON(CH}_3)_2$
Asparagine	$\text{H}_2\text{NCOCH}_2\text{CH(NH}_2\text{)CO}_2\text{H}$	Dioxane	$\text{C}_4\text{H}_8\text{O}_2$
Baking yeast		Dulcite	$\text{C}_6\text{H}_{14}\text{O}_6$
Barium chloride	$\text{BaCl}_2$	Dyes, paints	
Barium sulphate	$\text{BaSO}_4$	Dimethyl sulphoxide	$(\text{CH}_3)_2\text{SO}$
Benzaldehyde	$\text{C}_6\text{H}_5\text{CHO}$	Earth	
Benzene	$\text{C}_6\text{H}_6$	Esters	$\text{RCOOR}'$
Benzidine	$\text{NH}_2\text{C}_6\text{H}_4\text{C}_6\text{H}_4\text{NH}_2$	Ethanol	$\text{C}_2\text{H}_5\text{OH}$
Benzonic acid	$\text{C}_6\text{H}_5\text{COOH}$	Ethers	$\text{ROR}'$
Biogel		Ethyl acetate	$\text{CH}_3\text{COOC}_2\text{H}_5$
Blood		Ethylene chloride (dichloroethylene)	$\text{CH}_2\text{CCl}_2$
Blood group test Seren		Fats	
Boric acid	$\text{H}_3\text{BO}_3$	Feedstuffs	
Butyl acetate	$\text{CH}_3\text{COOC}_4\text{H}_9$	Foodstuffs	
Butyl alcohol	$\text{C}_4\text{H}_9\text{OH}$	Formaldehyde	$\text{HCHO}$
Cadmium acetate	$\text{Cd(CH}_3\text{COO)}_2$	Formic acid up to 10%	$\text{HCOOH}$
Cadmium sulphate	$\text{CdSO}_4$	Fructose	$\text{C}_6\text{H}_{12}\text{O}_6$
		Galactose	
		Gelatin	
		Glacial acetic acid	$\text{CH}_3\text{COOH}$
		Glucose	$\text{C}_6\text{H}_{12}\text{O}_6$
		Glycerine	$\text{CH}_2\text{OHCHOHCH}_2\text{OH}$
		Glyocol	$\text{NH}_2\text{CH}_2\text{COOH}$
		Glycol	$\text{HOCH}_2\text{CH}_2\text{OH}$

Graphite	C	Potassium carbonate	$K_2CO_3$
Gypsum	$CaSO_4 \cdot 2H_2O$	Potassium chloride	KCl
Heparine		Potassium hexacyanoferrate	$K_4Fe(CN)_6$
Heptanol	$C_7H_{15}OH$	Potassium hydroxide up to 10%	KOH
Hexane	$C_6H_{14}$	Potassium iodate	$KIO_3$
Hexanol	$C_6H_{13}OH$	Potassium nitrate	$KNO_3$
Hydrogen peroxide 3%	$H_2O_2$	Potassium sodium tartrate	$KO_2CCH(OH)CH(OH)CO_2Na$
Hydroquinone	$HOC_6H_4OH$	Potassium sulphate	$K_2SO_4$
Hypophysine		Potassium tartrate	$KO_2CCH(OH)CH(OH)CO_2K$
Ink		Polato starch	
Inorganic salts and their mixtures (exception group 2)		Potters's reagent	
Inositol	$C_6H_6(OH)_6$	Propanol	$CH_3CH_2CH_2OH$
Insecticides		1.2-propylene glycol	$CH_3CH(OH)CH_2OH$
Isopropanol	$C_3H_7OH$	Pyridine	$C_5H_5N$
Ketones	$RCOR'$	Quinine	$C_{19}H_{24}N_2O_2$
Lactic acid	$CH_3CHOHCOOH$	Raffinose pentahydrate	$C_{18}H_{32}O_{16} \cdot 5H_2O$
Lactic sugar	$C_{12}H_{22}O_{11}$	Rhamnose monohydrate	$C_6H_{12}O_5 \cdot H_2O$
Lactose	$C_{12}H_{22}O_{11}$	Rochelle salt	
Lead acetate	$Pb(CH_3COO)_2$	Saccharose	= zucchero greggio
Lead nitrate	$Pb(NO_3)_2$	Salicylic acid	$HOC_6H_4COOH$
Levulose	$C_6H_{12}O_6$	Salicylaldehyde	$HOC_6H_4CHO$
Lipstick		Saponine	
Lithium hydroxide up to 10%	LiOH	Soap	
Lithium carbonate	$Li_2CO_3$	Sodium acetate	$CH_3COONa$
Magnesium carbonate	$MgCO_3$	Sodium bisulphate	$NaHSO_3$
Magnesium chloride	$MgCl_2$	Sodium carbonate	$Na_2CO_3$
Magnesium hydroxide	$Mg(OH)_2$	Sodium chloride	NaCl
Magnesium sulphate	$MgSO_4$	Sodium citrate	$NaO_2CCH_2C(OH)(CO_2Na)CH_2CO_2Na \cdot 5H_2O$
Maltose	$C_{12}H_{22}O_{11}$	Sodium diethylbarbiturate	$NaC_8H_{11}N_2O_3$
Mannite	$C_6H_{14}O_6$	Sodium hydrogen carbonaten (sodium bicarbonate)	NaHCO <sub>3</sub>
Mannose	$C_6H_{12}O_6$	Sodium hypo-sulphite	$Na_2S_2O_4$
Methylene chloride (dichloromethane)	$CH_2Cl_2$	Sodium nitrate	$NaNO_3$
Mercury	Hg	Sodium phosphate	$Na_3PO_4$
Methanol	$CH_3OH$	Sodium silicate	$Na_2SiO_3$
Milk		Sodium sulphate	$Na_2SO_4$
Mineral oils		Sodium sulphide	$Na_2S$
Mineral salts		Sodium sulphite	$Na_2SO_3$
Nail lacquer		Sodium tartrate	$NaO_2CCH(OH)CH(OH)CO_2Na$
Nail lacquer remover		Sodium thiosulphate	$Na_2S_2O_3$
Nickel sulphate	$NiSO_4$	Soot	
Nicotine	$C_{10}H_{14}N_2$	Sorbite	$C_6H_{14}O_6$
Nonne-Apet reagent		Standard acetate solution	
Octanol (octylacohol)	$C_8H_{17}OH$	Standard I-agar nutrient	
Ointments		Standard II-agar nutrient	
Oleic aci	$CH_3(CH_2)_7CH=CH(CH_2)_7COOH$	Standard I-bouillon nutrient	
Olive oil		Standard II-bouillon nutrient	
Organic solvents		Starch	
4-nitro phenol	$O_2NC_6H_4HO$	Starch common salt solution	
Pandys reagent		Stearic acid	$CH_3(CH_2)_{16}CO_2H$
Paraffins	$C_nH_{2n+2}$	Styrene	$C_6H_5CH=CH_2$
Paraffin oils		Sugar and derivatives	
Pentanol	$C_5H_{11}OH$	Sulphur	S
Peptones		Talcum	$3MgO \cdot 4SiO_2 \cdot H_2O$
Perchloric acid	$HClO_4$	Tannin	$C_{76}H_{52}O_{46}$
Petroleum ether		Tartaric acid	$HO_2CCH(OH)CH(OH)CO_2H$
Phenolphthaleine	$C_{20}H_{14}O_4$	Tea	
Phenol & phenolic derivates	$C_6H_5OH$	Terpentine	
Polishes (creams and waxes)		Tetra hydrofuran	$C_4H_8O$
Potassium aluminium sulphate	$KAl(SO_4)_2$	Tetraline (tetrahydronaphthalene)	$C_{10}H_{12}$
Potassium bromate	$KBrO_3$	Thiourea	$H_2NCSNH_2$
Potassium bromide	KBr	Thymol	$2-[(CH_3)_2CH]C_6H_3.5 \cdot (CH_3)OH$

Thymol buffer solution	
Toluene	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>
Trehalose	C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>
Trichlorethylene	CHClCCl <sub>2</sub>
Trypsine	
Tryptophane	C <sub>11</sub> H <sub>12</sub> O <sub>2</sub> N <sub>2</sub>
Urease	
Uric acid	C <sub>5</sub> H <sub>4</sub> N <sub>4</sub> O <sub>3</sub>
Urea	CO(HN <sub>2</sub> ) <sub>2</sub>
Urine	
Vanilline	4-(HO)C <sub>6</sub> H <sub>3</sub> -3-(OCH <sub>3</sub> )CHO
Vaseline	
Water	H <sub>2</sub> O
Water colours	
Xylene	C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub>
Yeasts	
Zinc chloride	ZnCl <sub>2</sub>
Zinc sulphate	ZnSO <sub>4</sub>

Picric acid	C <sub>6</sub> H <sub>2</sub> OH(NO <sub>2</sub> ) <sub>3</sub>
Potassium chromate	K <sub>2</sub> CrO <sub>4</sub>
Potassium dichromate	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>
Potassium hydrogen sulphate	KHSO <sub>4</sub>
Potassium hydroxide in concentration over 10%	KOH
Potassium iodide	KI
Potassium permanganate	KMnO <sub>4</sub>
Silver nitrate	AgNO <sub>3</sub>
Sodium hydrogen sulphate	NaHSO <sub>4</sub>
Sodium hypochlorite	NaOCl
Sulphuric acid up to 10%	H <sub>2</sub> SO <sub>4</sub>

## 2

Surfaces of HPL are not altered, if the substances quoted below (especially in liquid or dissolved form) are spilled and if they interact only for a short time, ie if the boards are wiped with a wet cloth within 10-15 minutes and are subsequently wiped dry.

SUBSTANCE	CHEMICAL FORMULA
Aluminium chloride	AlCl <sub>3</sub>
Amino-sulphonic acid up to 10%	NH <sub>2</sub> SO <sub>3</sub> H
Amonium hydrogen sulphate	NH <sub>4</sub> HSO <sub>4</sub>
Aniline dyes	
Arsenic acid up to 10%	H <sub>3</sub> AsO <sub>4</sub>
Caustic soda in concentration over 10%	NaOH
Crystal violet (gentian violet)	C <sub>25</sub> H <sub>30</sub> N <sub>3</sub> Cl
Esbach reagent	
Ferric chloride	FeCl <sub>3</sub>
Ferrous chloride	FeCl <sub>2</sub>
Fuchsine	C <sub>19</sub> H <sub>19</sub> N <sub>3</sub> O
Hair dyeing and bleaching agents	
Hydrochloric acid up to 10%	HCl
Hydrogen peroxide 3-30%	H <sub>2</sub> O <sub>2</sub>
Inorganic acids up to 10%	
Iodine	I <sub>2</sub>
Lacquers	
Lithium hydroxide over 10%	LiOH
Mercuric chloride solution	HgCl <sub>2</sub>
Mercuric dichromate	HgCr <sub>2</sub> O <sub>7</sub>
Methylene blue	C <sub>16</sub> H <sub>18</sub> ClN <sub>3</sub> S
Nitric acid up to 10%	HNO <sub>3</sub>
Nylander reagent	
Oxalic acid	COOHCOOH
Phosphoric acid up to 10%	H <sub>3</sub> PO <sub>4</sub>

## 3

The following substances must be immediately removed since they can irreparably damage the HPL surface after a very short time of contact.

SUBSTANCE	CHEMICAL FORMULA
Adhesives (chemically hardened)	
Amino sulphonic acid*	NH <sub>2</sub> SO <sub>3</sub> H
Aqua regia*:	HNO <sub>3</sub> +HCl=1:3
Arsenic acid*	H <sub>3</sub> AsO <sub>4</sub>
Chromesulphuric acid*	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> +H <sub>2</sub> SO <sub>4</sub>
Formic acid*	HCOOH
Hydrochloric acid*	HCl
Hydrofluoric acid*	HF
Hydrogen bromide	HBr
Nitric acid*	HNO <sub>3</sub>
Phosphoric acid*	H <sub>3</sub> PO <sub>4</sub>
Sulphuric acid*	H <sub>2</sub> SO <sub>4</sub>

\*in concentration over 10 %

## 4

Repeated interaction with the following aggressive gases and vapours leads to a change in the HPL surface.

SUBSTANCE	CHEMICAL FORMULA
Acid fumes	
Bromine	Br <sub>2</sub>
Chlorine	Cl <sub>2</sub>
Nitrous fumes	N <sub>x</sub> O <sub>y</sub>
Sulphur dioxide	SO <sub>2</sub>