

# ALLGEMEINE LABORINFORMATIONEN

## CHEMISCHE BESTÄNDIGKEIT DIVERSE MATERIALIEN

	PS 20 °C	PS 50 °C	PP 20 °C	PP 50 °C	HDPE 20 °C	HDPE 50 °C	LDPE 20 °C	LDPE 50 °C	PC 20 °C	PC 50 °C
Aceton	4	4	1	3	1	1	3	3	4	4
Acetonitril	4	4	3	4	1	1	1	1	4	4
Ameisensäure 50 %	3	3	1	2	1	1	1	2	3	3
Ammoniak 25 %	2	2	1	1	1	1	1	1	4	4
Ammoniumacetat	1	1	1	1	1	1	1	1	1	1
Amylalkohol	1	1	1	1	1	1	1	2	1	
Ascorbinsäure			1	1	1		1		2	2
Benzol	4	4	4	4	4	4	4	4	4	4
Benzylalkohol	4	4	4	4	3	4	4	4	4	4
Borsäure 10 %	1	1	1	1	1	1	1	1	1	1
Chloroform 100 %	4	4	3	4	3		3		4	4
Cyclohexanol	3	3	1	3	1	1	1	1	3	
Detergenzien			1	1						
Dichloressigsäure			1	1	1	1			4	4
Diethylether	4	4	4	4	3	4	4	4	4	4
Dimethylacetamid	4	4	1	1	1	1	3	4		
Dimethylsulfoxid(DMSO)	1	2	1	1	1	1	1	1	4	4
Emulgator			1	1						
Essigsäure 10 %	1	1	1	1	1	1	1	1	1	2
Essigsäure 50 %	2	2	1	1	1	1	1	1	1	2
Essigsäure 90 %	4	4	1	2	1	1	1	2	4	4
Ethanol 50 %	1	1	1		1	1	1	2	1	1
Ethanol 96 %	1	1	1	1	1		1		1	3
Ether	4	4	4	4	3	4	4	4	4	4
Formaldehyd 10 %	3	4	1	1	1	1	1	1	1	2
Formaldehyd 40 %	4	4	1	2	1	2	2	3	1	2
Formamid	1	1	1	1	1	1	1	1	3	3
Glucose	1	1	1	1	1	1	1	1	1	1
Glycerol	1	1	1	1	1	1	1	1	3	3
Harnsäure			1		1		1		1	
Harnstoff	1	2	1	1	1	1	1	1	1	1
Heptan	4	4	3	3	2	3	3	4	1	2
Hexanol			1		1		1		2	2
Hydrochinon	4	4	1				1	3	3	3
Isoamylalkohol	1	1							3	0
Isobutylalkohol	2	2	1	1	1	1	1	1	1	2
Isopropylacetat	4	4	2	3	1	2	2	3	4	4
Isopropylalkohol	2	2	1	1	1	1	1	1	1	2
Isopropylbenzol	4	4	3	4	2	3	3	4	4	4
Isopropylether	4	4	4	4	4	4	4	4	4	4
Kaliumcarbonat	1	1	1	1	1	1	1	1	3	3
Kaliumchromat	1	1	1	1	1	1	1		2	2
Kaliumpermanganat	2	3	1	1	1	1	1	1	1	
Kohlensäure	1	1	1	1	1	3	1	1	1	
Methanol	3	4	1	1	1	1	1	1	4	4
Methylacetat	4	4	2	3	3	3	3	4	4	4
Methylamin 32 %			1		1		1		4	4

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	PS20°C	PS50°C	PP20°C	PP50°C	HDPE20°C	HDPE50°C	LDPE20°C	LDPE50°C	PC20°C	PC50°C
Methylenchlorid	4	4	3	4	4	4	4	4	4	4
Methylphenylether 100 %	4	4	3				3		4	4
Methylpropylketon	4	4	2	3	1	2	2	3	4	4
Milchsäure 3 %	2	2	1	2	1	1	1	2	1	2
Milchsäure 85 %	2	2	1	2	1	1	1	1	1	2
Naphthalin			1		1	3			3	3
Natriumacetat	2	2	1	1	1	1	1	1	1	2
Natriumchlorid	1	1	1	1	1	1	1	1	1	1
Natriumhypochlorid	1	1	2	3	2	3	2	3	2	3
Natriumpermanganat	2	3	1	1	1	1	1	1		
Natriumthiosulfat	1	1	1	1	1	1	1	1	2	2
Natronlauge 30 %	1	1	1	1	1	1	1	1	4	4
Natronlauge 45 %	1	1	1	1	1	1	1	1	4	4
Natronlauge 60 %	1	1	1	1					4	4
Nitrobenzol	4	4	4	4	3	4	4	4	4	4
Oxalsäure	1	1	1	1	1	1	1	1	3	4
Ozon	3	3	1	2	1	1	1	2	1	2
Palmitinsäure	1	1	3	4	3		2		2	2
Paraffinöl	1	1	1	3	1	1	1	3	1	
Phenol 10 %	4	4	1	1	1	1	1	1	4	4
Phenol 100 %	4	4	1	1	2	3	3	3	4	4
Phosphorsäure 1-5 %	2	2	1	1	1	1	1	1	1	1
Phosphorsäure 85 %	1	1	1	2	1	1	1	1	1	2
Phthalsäure	1	1	1	1	1	1	1	1	3	3
Propanol	3	3	1	1	1	1	1	1	1	
Salzsäure 20 %	1	1	1	1	1	1	1	1	2	3
Salzsäure konz.	3	3	1	1	1	1	1	1	4	4
Schwefelsäure 1-6 %	1	2	1	1	1	1	1	1	1	1
Schwefelsäure 60 %	2	4	1	3	1	3	1	3	3	3
Schwefelsäure konz.	4	4	4	4	4	4	4	4	4	4
Stearinsäure	1	2	1	1	1	1	1	1	1	2
Tanninsäure	1	1	1	1					3	3
Terpentin					3	4	3	4	4	4
Tetrachlormethan	4	4	4	4	3	4	4	4	4	4
Tetrahydrofuran	4	4	3	4	3	4	4	4	4	4
Toluol	4	4	3	4	3	4	3	4	4	4
Trichloressigsäure	4	4	3	4	3	3	3	4	4	4
Urin	3	3	1	1	1	1	1	1	1	
Wasserstoffperoxid 3 %	1	1	1	1	1	1	1	1	3	3
Xylen	4	4	4	4	2	3	2	4	4	4
Zitronensäure 10 %	1	1	1	1	1	1	1	1	1	2

1 = beständig 2 = eingeschränkt beständig 3 = mäßig beständig 4 = nicht beständig

Für die Eignung des jeweiligen Materials können diese Tabellen grundsätzlich nur als Orientierungshilfe dienen, da das Verhalten gegen Chemikalien von der Gestalt des Erzeugnisses und der jeweiligen Anwendung abhängt. In vielen Fällen sind Praxisversuche unerlässlich.

## CHEMICAL RESISTANCE OF CYCLOOLEFINS (COC / COP)

Cycloolefin		Cycloolefin		Cycloolefin	
Acetic acid 99 %	1	Dibutyl ether	4	Isopropanol	1
Acetone	1	Dichloroethane	4	Methanol	1
Acrylonitrile	1	Dichloromethane	4	Methylene chloride	4
Ammonia 33 %	1	Diethyl ether	4	Nitric acid (HNO <sub>3</sub> )	1
Benzaldehyde	3	Dimethyl sulfoxide	1	Octane	4
Benzene	4	DMSO	1	Pentane	4
Benzine	4	Ethanol 50 %	1	Sodium hydrox. (NaOH) 50 %	1
Butanon	1	Ethanol 96 %	1	Sulphuric acid (H <sub>2</sub> SO <sub>4</sub> ) 40 %	1
Carbon tetrachloride	4	Fatty acid	4	Sulphuric acid (H <sub>2</sub> SO <sub>4</sub> ) 95 %	1
Chloroform	4	Heptane (n-Heptane)	4	Toluene	4
Cyclohexane	4	Hexane	4	Xylene	4
Cyclohexanone	4	Hydrochloric acid (HCl) 36 %	1		
Detergents	1	Hydrogen peroxide water 30 %	1		

1 = resistant 2 = limited resistant 3 = moderate resistant 4 = no resistance

This table is a general guide only. As many factors can affect the chemical resistance of a given product, its suitability for a specific application should be tested.

## CHEMICAL RESISTANCE OF POLYETHYLENE TEREPHTHALATE (PET) CAPILLARY PORE MEMBRANES (THINCERT® CELL CULTURE INSERTS)

	PET		PET		PET
Acetaldehyde	1	Ethanol	1	Monochlorbenzene	1
Acetic acid (10 %)	1	Ethyl acetate	1	Nitric acid (30 %)	1
Acetic acid (100 %)	3	Ethyl ether	1	Nitrobenzene	1
Acetone	1	Ethylendichloride	1	Nitropropane	1
Ammonium hydroxide (5 %)	1	Ethylene glycol	1	n-Propanol	1
Amyl acetate	1	Fluoric acid (35 %)	1	Pentane	1
Amyl alcohol	1	Formaldehyde	1	Perchlorethylene	1
Aniline	1	Formic acid (50 %)	1	Petroleum ether	1
Benzene	3	Freon	1	Phosphoric acid (85 %)	3
Benzyl alcohol	1	Glutaraldehyde	1	Potassium hydroxide	4
Benzyl benzoate	1	Glycerol	1	Propyl acetate	1
Boric acid (5 %)	1	H <sub>2</sub> O <sub>2</sub> (30 %)	1	Pyridine	1
Butanol	1	Halogenated phenoles	4	Silicon oil	1
Butyl acetate	1	Hexane	1	Sodium hydroxide	4
Butyl cellulose	1	Hydrochloric acid (20 %)	1	Sulphuric acid (25 %)	1
Carbon tetrachloride	1	i-Propanol	1	Terpentine oil	1
Chloroform	1	Isopropyl myristate	1	Tetrahydrofurane	1
Concentrated strong acids	4	Methanol	1	Tetraline	1
Cyclohexane	1	Methyl acetate	1	Toluene	3
Cyclohexanone	3	Methyl cellulose	1	Trichlorbenzene	1
Dekaline	1	Methylenchloride	3	Trichlorethylene	1
Dimethylacetamide	1	Methylethylketone	1	Triethanolamin	1
Dimethylformamide	1	Methylglycol acetate	1	Trikresyl phosphate	1
Dimethylsulfoxide	1	Methylisobutylketone	1	Xylene	3
Dioxane	1	Mineral oils	1		

For the solvents effecting slight changes the user should test the compatibility under the specific application conditions. All tests have been performed at RT. Please be aware that ThinCert® cell culture inserts are made of PET membranes sealed on polystyrene housings. Therefore, solvents shown compatible with PET membranes in the above table might be incompatible with the polystyrene housing. Please check solvent compatibility with polystyrene.

Resistance scale from 1 to 4

1 = resistant	i.e. the plastics may be treated with the chemical compound at mentioned temperature over several years without any significant alterations in its physical, optical and chemical properties
2 = limited resistant	i.e. the plastics may be treated with the chemical compound at mentioned temperature over several weeks without any significant alterations in its physical, optical and chemical properties
3 = moderate resistant	i.e. the plastics may be treated with the chemical compound at mentioned temperature for short time only (several minutes to one hour) without any alterations in physical, optical and chemical properties (mixing and measuring is possible)
4 = no resistance	i.e. treating the plastics with the substance named may cause alterations in physical, optical and chemical properties within seconds