Chemical Resistance Table

General:
The mixture of different media can lead both to an improvement and to a debasement of the resistance. Statements in the resistance table are only valid for one medium. The respective working conditions, such as higher temperatures, extreme chemical and mechanical stress, combined with dynamical factors may effect the performance of every hose additionally.
If plastics come into contact with media, against which according to the resistance table they are unresistant, so this may not necessarily lead to the failure of the product. A strong, but reversible swelling can therefore be classified as unresistant.

Therefore we recommend in all cases, in which exact details are required,

- a test in our laboratory with the corresponding medium at the temperature of use,
- to find out these data by tests at the place of application (If experiences concerning the application are not available, we will gladly put the required test material at your disposal.).

The stated resistances are non-committal measure or experience values of bench tests and therefore only standard values subject to changes and deviations.

As the operating conditions with the user are outside our control, no guarantee can be given.

The data means:

1 very good resistance:
The material will be probably not attacked by the medium.
2 medium resistance:
The material will probably have a satisfactory fitness for use for months or up to years. Later an advanced damage could lead to destruction.
3 conditional resistance:
By short term and occasional contact, or at weak concentration of the medium, the material will probably have a certain fitness for use. At continuous contact you have to reckon with the destruction of the material.
- unresistant or soluble:
The application of the material cannot be recommended, as the mechanical properties will be reduced strongly, the material will be disintegrated or decomposed.

	Ester-PUR		Ether-PUR		Weich-PVC		LLDPE		HDPE + LDPE		TPE		PA		PP		NBR	
media	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	50 °C	20 °C	50 °C
acetone	-		-		-		1	1	1	2	2	3	1	2	1	3	-	-
acrylic esters (ethyl acrylate)	-		-		-		-		3		1		1					
alum, aqueous	1	2	1	1	1	2	1		1	1	1	1	1					
allyl alcohol	3	-	3	-	3	-	1	1	1	2	1	1	3	-	2	2	3	
aluminium chloride, 10%	2	3	1	2	1	1	1	1	1	1	1	2	1	3	1	1	1	1
aluminium sulfate, aqueous	2	-	1	3	1	1	1	1	1	1	1	2	1		1	1	1	1
formic acid, 3%	2	-	1	2	1	1	1	1	1	1	1	2	3	-	1	2	-	-
formic acid, 10%	3	-	2	-	1	2	1	1	1	1	1	3	-		1	2	-	-
ammonia, aqueous 100%	-		-		1	1	1	1	1	1	1	1	1	2				
ammonium chloride, aqueous 3% (salmiac)	1	2	1	2	1	1	1	1	1	1	1	1	1		1	1	1	1
ammonium nitrate, aqueous	3	-	2	-	1	1	1	1	1	2	1	1	1		1	1	1	1
ammonium sulfate	1	-	1	3	1	1	1	1	1	1	1	1	1		1	1	1	1
aniline	-		-		-		2		2	3			3	-	2	3	-	-
aniline hydrochloride	-		-		2	-	1	1	2	3					1	3	3	3
benzaldehyde	-		-		-		1		3	-	1		3	-	1	-	-	-
gasoline, diesel/ diesel oil/ heating oil	1		1		3	-	1	1	2	3	-		1		3	-	3	
gasoline, flight- (kerosene)	1		1		3	-	1	1	2	3	-		1		3	3	1	
gasoline, white spirits	1	2	1	2	3	-	1		2	-	-				3	-	1	
benzoic acid, aqueous	3	-	2	3	1	2	1	1	1	1	1	1	3	-	1	3	3	
benzene	-		-		-		1		3	-	-		1		3	-	-	-
Javel water ➠ sodium hypochlorite																		
borax, aqueous	2	3	1	1	1		1	1	1	1	1		1					
boric acid, aqueous	2	3	1	2	1	1	1	1	1	1	1	1	3	-	1	1	1	1
bromine	-		-		-		-		-		-		-		-	-	-	-
butanediols ➠ butylglycol																		
butanol ➠ butylalcohol																		
butyl acetates	-		-		-		1	1	3				1		3	-	-	-
butylalcohol	2	3	2	3	2	3	1	1	1				1		1	2	1	-
butylglycol, aqueous	1		1		3		1	1	1	1	1	2	2		1	1		
calcium chloride, aqueous 10%	2	-	1	3	1	1	1	1	1	1	1	1	2		1	1	1	1
chlorine, aqueous	-		-		-		-		-		-		-		-	-	-	-
chlorine, gaseous dry	-		-		-		-		-		-		-					
chloromethanes (chloroform, dichloromethane)	-		-		-		3	-	-		-		3	-	-	-	-	-
citric acid, aqueous	2	-	1	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1
cyclohexanol	3	-	3	-	-		1	1	1	1	-		1		1	3	3	3
detergents, generally (see exact media)	2	3	1	2	1	3	1	1	1	1	1	1	1	3				
dichloroethanes	-		-		-		1	1	3	-			1					
dichloromethanes ➠ chloromethanes																		
diesel, -fuel/ -oil ➠ gasoline, diesel-																		
iron(III)-chloride, aqueous 10%	2	3	1	2	1		1	1	1	1	1	2	3	-	1	1	1	1
acetic acid 10%	-		2	3	1	3	1	1	1	3	1		3	-	1	1	3	3
ethanol, 10% (ethyl alcohol, spirit)	2	3	1	2	1	3	1	1	1	1	1	1	1	2	1	1	1	1
ethyl alcohol ➠ ethanol																		
ethylene chloride ➠ dichloroethanes																		
ethylene oxide, gaseous	-		-		-		2		-		2		3		3	3	-	-
fluorine, gaseous	-		-		3				-		-		-		-	-	-	-
formaldehyde, aqueous	2	-	2	-	2	3	1	1	1	1	1	1	3		1	1		
glucose (dextrose)	2	3	1	2	1	2	1	1	1	1	1	1	1		1	1	1	1
urea, aqueous	3	-	3	-	1	3	1	1	1	1	1		1		1	1	1	1
hydraulic fluid, hydraulic oils DIN 51 524	1	1	1	1	3								1		1	3	1	
hydroxylamine sulfate	-		-		1						1							
potash lye 50%	-		3	-	2	3	1	1	1	2	2	3	2					
potassium bromide, aqueous	3	-	2	-	1		1	1	1	1	1	1	2		1	1	1	1
potassium chloride, aqueous	2	-	1	3	1	1	1	1	1	1	1	1	1		1	1	1	1
potassium nitrate, aqueous	2	-	1	3	1		1	1	1	1	1	1	1		1	1	1	1
potassium permanganate, aqueous 5%	3	-	2	3	2	3	1	1	1	1	1	1	-		1	1	-	-
carbon dioxide, wet (carbonic acid)	2		1		1	1	1		1		1	1	1		1	1	1	1

Chemical Resistance Table

media	Ester-PUR		Ether-PUR		Weich-PVC		LLDPE		HDPE + LDPE		TPE		PA		PP		NBR	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C	20 °C	50 °C	20 °C	50 °C
carbon dioxide, dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
cresols	-		-		-		2		3	-	-		-		2	3	-	-
copper chloride, aqueous	1		1		1		1	1	1	1	1				1	3	1	
copper sulfate, aqueous	2		2		2	3	1	1	1	1	1	1	1					
magnesium chloride, aqueous 10%	1	-	1	3	1	2	1	1	1	1	1	1	1		1	1	1	
methylen chloride ➠ chloromethanes																		
lactic acid, aqueous 50%	-		-		3	-	1	1	1	1	1	1	-		1	1	1	-
mineral oil ➠ oil																		
sodium chlorate, aqueous	3	-	2	-	1	1	1	1	1	2	1	3	2		1	1	3	3
sodium chloride, aqueous (table-salt)	2	3	2	3	1	1	1	1	1	1	1	1	1	3	1	1	1	1
sodium hydroxide (caustic soda), aqueous 10%	3	-	2	3	1	2	1	1	1	1	1	2	1		1	1	1	3
sodium hydroxide (caustic soda), aqueous 50%	-		-		-		1	2	1	2	3	-	2		1	1	3	3
sodium hypochlorite, aqueous 10%	3	-	2	3	1		1	1	3	-	3	-	-		2	3	-	-
sodium sulfate, aqueous (Glauber´s salt)	2	3	1	2	1	1	1	1	1	1	1	1			1	1	2	3
soda lye ➠ sodium hydroxide																		
nickel chloride	2	-	1	3	1		1	1	1	1	1		3		1	1	1	
nickel sulfate	2	3	1	2	1	1	1	1	1	1	1	1	2		1	1	1	1
nitroglycerin	-		-		1	3	1	1	-						2		-	-
oil, hydraulic ➠ hydraulic fluid																		
oil, mineral	1	1	1	1	3	-	1	1	2	3	3	3	1					
oleic acid	2	3	1	2	2	3	2		2				2		1	3	3	
oxalic acid, aqueous	3	-	2	3	1	2	1	1	1	1	1	3	3		1	1	3	3
ozone	3		3		3		-		-		3		-		3	-	-	-
petroleum	1		1		-		1	1	2	-	-		1		1	3	1	1
phosgene	-		-		-				-		-		-		3	-	3	
phosphoric acid 3%	2	3	1	2	1	1	1	1	1	1	1	1	3	-	1	1	2	3
phosphoric acid 50%	-		-		1	2	1	1	2	3	1	2	-		1	2	-	-
mercury	1	1	1	1	1	1	1	1	1	1	1	1	2		1	1	1	1
nitric acid, 10%	-		-		2	3	1	1	1	2	1	2	-		1	1	-	-
nitric acid, 50%	-		-		-		2	-	-		3	-	-		3		-	-
hydrochloric acid, 3%	3	-	1	2	1	1	1	1	1	1	1	1	3	-	1	1	3	-
hydrochloric acid, 10%	-		2	3	1	2	1	1	1	1	1	2	-		1	2	-	-
hydrochloric acid, 40%	-		-		2	3	1	1	2	3	2	3	-		1	2	-	-
lubricating oils/ greases ➠ oil																		
carbon disulfide	-		-		-		1	1	3	-	-		2		-	-	-	-
sulfuric acid, 3%	3	-	1	2	1	1	1	1	1	1	1	1	-		1	1	3	
sulfuric acid, 25%	-		3	-	2	3	1	1	1	2	1	2	-		1	2	-	-
soap suds ➠ detergents																		
tetrachlorocarbonates ➠ chloromethanes																		
toluene	-		-		-		1	1	3	-	-		1					
trichlorethanes (methyl chloroform)	-		-		3		1	1	2	3					-	-	-	-
vinyl acetate	-		-		-		1						1		1	-	3	3
water, sea water/ salt water ➠ eau	1	2	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1
hydrogen	1		1		1		1	1	1	1	1	1	1		1	1	1	1
xylenes	3	-	3	-	-		1	1	-		-		1		-	-	-	-
zinc chloride, aqueous	2	3	2	3	1	2	1	1	1	1	1	1	3		1	1	1	1
zinc sulfate, aqueous	2	3	2	3	1	1	1	1	1	1	1	1	2		1	1	1	
tin-II-chlorides, aqueous	3	-	2	3	1	2	1	1	1	2	1	2	3		1	1	1	1