

## ***Chemical Stability of Polyurethane Foams***

Table 1: Chemical Stability

<b>Typical Physical Properties</b>		
	<b>Polyester</b>	<b>Polyether</b>
<b>Water</b>	<b>Estimated Degradation Time</b>	
Room Temperature	> 5 years	Probably > 10 years
160 °F	8 weeks	Probably > 1 year
200 °F	9 days	Probably > 6 months
<b>Acids</b>	<b>Estimated Degradation Time</b>	
I-ICI - concentrated	Dissolves in 2 min.	40 days
— dilute (1 N)	10 days	> 2 years
I-12S04 - concentrated	Dissolves in 5 min.	Dissolves in 5 min.
- dilute (1 N)	40 days	> 2 years
HNO3 -concentrated	Dissolves in 25 min.	Dissolves in 3 hrs.
- dilute (1N)	10 days	> 2 years
<b>Bases</b>	<b>Estimated Degradation Time</b>	
NaOH -36%	2 days	1.5-2 years
- dilute (1 N)	12 days	> 2 years
NH4 OH concentrated	12 days	> 1.5 years
-dilute (1N)	4 months	> 2 years
<b>Solvent</b>	<b>Swelling Behavior</b>	
Hydrocarbons	Slight Swelling (5-10%)	Moderate Swelling (30-50%)
Chlorinated	Severe Swelling (50-75%)	Severe Swelling (50-100%)
Alcohols	Slight Swelling (5-10%)	Moderate Swelling (30-50%)
DMF or DMSO (Hot)	Dissolves	Dissolves
<b>Fuels</b>	<b>Tensile Strength Loss After Exposure at 60°C</b>	
Gasoline	No degradation after 14 weeks	No degradation after 14 weeks
Type C	No degradation after 14 weeks	No degradation after 14 weeks
JP 4	No degradation after 12 weeks	No degradation after 12 weeks

\*information subject to change without notice.