Resistance Table for Various Fibers

	Acid Resistance (PH < 7)	Alkali or Base Resistance (PH > 7)	Hydrocarbon Resistance	Solvent Resistance	UV Resistance	Mold Resistance	Heat Resistance
Polypropylene	Excellent resistance to most acids, except for significant deterioration when exposed to high temperatures in the presence of acids	• Excellen resistance to most alkalis • Considered stable when the pH is between 2 and 13	Excellent resistance to hydrocarbons, except for significant deterioration when exposed to high temperatures in presence of hydrocarbons	Low resistance to solvents, especially in temperatures > 60°C (140°F)	Loss of strength when exposed to UV for extended periods	Good resistance to mold	• Softens at 115-140°C (235-285°F) • Melts at 150°C (300°F) • Non-flammable
Polyester	Good resistance to mineral acids	• Good resistance to weak alkalis • Disintegrates in presence of strong alkalis and high temperatures • Very sensitive to sodium hydroxide, for example	Good resistance to hydrocarbons	Insoluble in most solvents except for certain phenols, which can cause swelling	Good UV resistance	Excellent resistance to mold	• Becomes sticky at 225-235°C (440-450°F) • Melts at 250-255°C (480-495°F) • Non-flammable
Viscose / Rayon	Disintegrates in hot or cold concentrated acids	Loses strength and swells in presence of strong alkalis	-	Good resistance to solvents	Yellows when exposed to UV	Easily damaged by mold, significant loss of strength	• Does not melt or soften • Decomposes at temperatures above 175°C (350°F) • Easily flammable

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Acids / Alkalis (or Bases)

Examples of Solutions and their Respective pH

The PH of Typical Aqueous Solutions

Substance	Approximate pH
Acid mine drainage (AMD)	< 1,0
Battery acid	< 1,0
Gastric acid	2,0
Lemon juice	2,4 - 2,6
Cola	2,5
Vinegar	2,5 - 2,9
Orange or apple juice	3,5
Beer	4,5
Coffee	5,0
Tea	5,5
Acid rain	< 5,6
Milk	6,5
Pure water	7,0
Human saliva	6,5 - 7,4
Blood	7,38 - 7,42
Sea water	8,0
Soaps	9,0 à 10,0
Lime	12,5

Identified by the pH Level of the Environment

PH < 7	Acidic environment : the acidity of the environment increases as the pH falls below 7
PH = 7	Neutral evironment
PH > 7	Alkaline environment (basic) : the environment becomes increasingly alkaline as the pH increases beyond 7

Examples

Examples of mineral acids :

- Hydrochloric acid
- Phosphoric acid
- Nitric acid
- Sulphuric acid

Examples of organic acids :

- Acetic acid
- Benzoic acid
- Salicylic acid
- Lactic acid

Examples of alkalis (bases) :

- Calcium carbonate
- Sodium carbonate
- Sodium hydroxide
- Potassium hydroxide
- Ammonium hydroxide

Examples of solvents :

- Acetone
- Ethyl alcohol
- Benzene
- Ethylene glycol
- Chloroform
- Toluene
- Xylene

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