THE IMPORTANCE OF CHEMICAL pH TO CARPET FIBER

An important factor that affects the cleaning of stain resistant 4th and 5th generation nylon carpets is the pH of the detergents or shampoos used in the cleaning process. Chemical pH may adversely affect the performance of the carpet so it is important to understand the basics of pH as they pertain to carpet care.

On the pH scale each full number increase represents a tenfold increase of the acidity or alkalinity of the solution. It is a geometric progression by the number 10. So pH of 1 is 10 times more powerful than pH of 2. The pH of 2 is ten times more powerful than the pH of 3 and 100 times more powerful than pH of 4.

In chemistry, pH is a quantitative scale for measuring the acidity or alkalinity of liquid solutions. The scale runs from the number 0 to 14. The number 7 on the pH scale is neutral, not acid or base. The number 0 on the pH scale is a strong acid. 14 is a strong alkali. In the cleaning industry the word "alkali" is used to denote base. So the pH scale runs from 0 (acid) to 14 (alkali).

The numbers on the scale denote the "strength" characteristics of the solution not the "quantity" or dilution of the solution. Whether you have a drum of lye or a tablespoon of lye they both have the same strength. characteristics (pH).

In order to prevent damage to carpet, the carpet cleaner should leave the carpet as close to 7, on the pH scale, as possible. A cleaning solution with a pH of 10 or below is required by the manufacturers of all stain resistant and 4th or 5th generation nylon carpets. Also, a water temperature of below 150° is required by the major fiber producers on most nylon carpets. If chemicals with a higher pH than 10 is used, it will void the guarantee of these carpets from the manufacturer. High alkaline detergents and shampoos will also damage wool carpet. On other types of carpet a pH of 12 is the maximum that should ever be used.

Carpet pile fibers are dyed in acids at pH 2. That is why high alkaline cleaners may cause alkaline browning of light pile fibers.