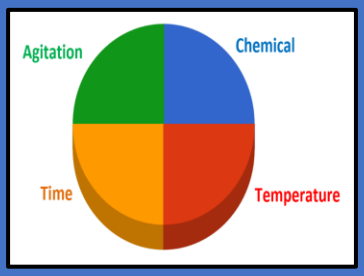
RTS
Restoration Training Services

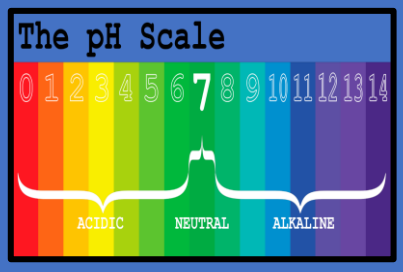
From The Cleaning Basics 101 Series:

ULTIMATE

Spot and Stain Removal

A deep study on removing spots and stains from fabric and carpeting





By Cleaning Industry Author Mark Exner

An IICRC Approved Publication

About the Author

Mark W. Exner began his long career in the cleaning industry at the ripe old age of nineteen back in 1974. His employment was in a hospital housekeeping department for $2.75 per hour. After achieving a college degree in Administration of Justice, he was unable to secure a job opening in law enforcement. Mark continued to clean and eventually started a cleaning company. Many years passed and he decided to take a course on cleaning carpets and quickly learned the value of a formal education in cleaning. He soon realized if the information could help him that much, he would like to instruct and inspire others as well. Today Mark instructs for many schools, including IICRC Certified Courses, and ISSA's Cleaning Management Institute. His career has spanned more than four and a half decades. Mark Exner has authored the following publications for courses offered, and for individual textbook sales:

Mark Exner offers the following education courses:

IICRC CERTIFIED COURSES

1. IICRC Commercial Carpet Technician (CMT) # 1001
2. IICRC Carpet Cleaning Technician (CCT) # 1002
3. IICRC Upholstery Fabric Technician (UFT) # 1003
4. SHE KLEENS: FABRICS (an IICRC UFT Approved Course) # 1004

IICRC CEC COURSES – THE CLEANING BASICS 101 SERIES

1. The Cleaning Basics 101 Series: Fabric Cleaning # 2001
2. The Cleaning Basics 101 Series: Leather Cleaning # 2002
3. The Cleaning Basics 101 Series: Residential Carpet Cleaning # 2003
4. The Cleaning Basics 101 Series: Commercial Carpet Cleaning # 2004
5. The Cleaning Basics 101 Series: Ultimate Spot and Stain Removal # 2005
6. The Cleaning Basics 101 Series: Hard Floor Care # 2006

IICRC CEC COURSES – CUSTODIAL TRAINING

1. The Cleaning Basics 101 Series: Custodial Cleaning Part 1; (Janitorial Duties) # 3001
2. The Cleaning Basics 101 Series: Custodial Cleaning Part 2; (Carpet Cleaning) # 3002
3. The Cleaning Basics 101 Series: Custodial Cleaning Part 3; (Hard Floor Cleaning) # 3003

ISSA Cleaning Management Institute Courses:

1. ISSA's Cleaning Management Institute "Certified Custodial Cleaning Technician"
2. Cleaning Management Institute "Train the Trainer."

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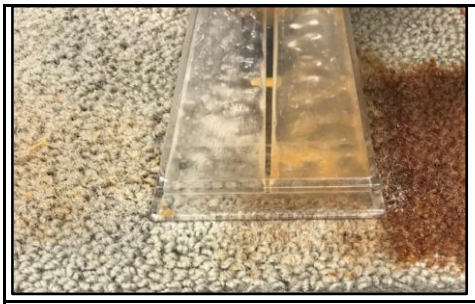
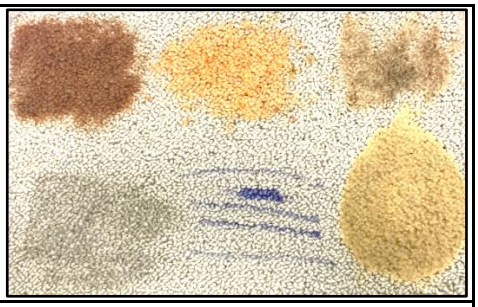
MODULE 1 SPOTS AND STAINS DEFINED

1. Spot Defined:

a. A substance that will be removed by the cleaning process, or
b. By just by applying a spot remover, agitation, then a towel to remove. Spots that can be just rinsing to be removed.

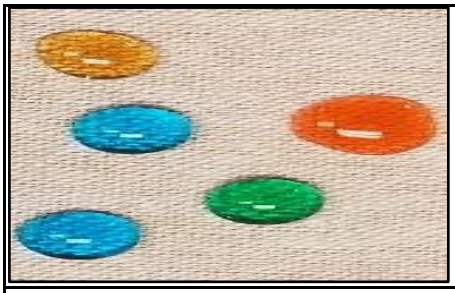
2. Unwanted Substances May be Classified as:

a. Soluble – able to be dissolved enough to be removed, or near completely.
b. Semi-Soluble – partially able to be disolved and removed. Example is some inks are only partially removable. Some color of the same ink will come out, and some of it will not. If a purple ink, the blue component would be removed but not the red componant.
c. Non-Soluble – not able to be removed. Example is dry soils like sand.

		
Some material may require more rinsing.	**Flush the unwanted material thuroughly**	**Many stains often with different results.**

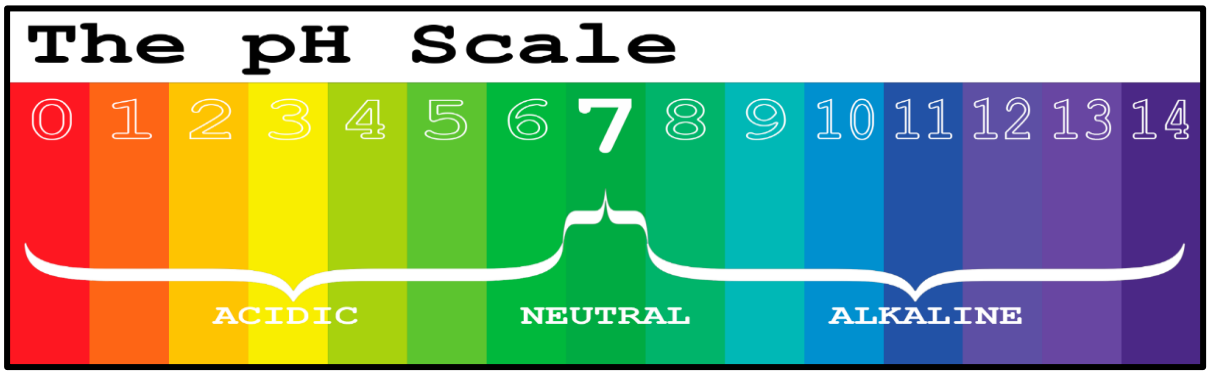
3. Stains Defined:

a. **An addition or subtraction of color** that may have formed a permanent bond with the carpet fiber.
b. **An addition of color** that may be only partially removed. Fiber color may be altered (changed) but not all removed.
c. **A loss of color** in the carpeting due to chemical spill such as bleach. This will only occur in nylon and all natural fibers.

		
a. The addition of color. Additional color may be acid dyes like wine, others like inks, mustard, and more.	**b. The altered color = some color change. Some color remains, and the totally new color does not match the original color of fabric or carpeting.**	**c. Color loss – all or partial color loss. Yarns must be redyed to match the original color.**

Stains Generally Considered Permanent:

1. Mustard – on all nylon and natural yarns. Mustard contains disperse dyes, turmeric dyes, and acid dyes unless it's natural mustard.
2. Untreated, and dried furniture stains – on all nylon and natural yarns. Furniture stains usually come out if treated before it is dry.
3. Insoluble inks – possibly on all yarns, natural and synthetic. Some permanent inks may be semi-soluble or completely removed.



NEUTRAL 7 pH
IS EQUAL PARTS ACID AND ALKALINE

Mildly Acidic	5 to 6.9	7.1 to 8	Mildly Alkaline
Medium Acidic	3 to 5	9 to 10	Medium Alkaline
Strong Acidic	0 to 2	11 to 14	Strong Alkaline

When cleaning, we must address the strength of our cleaning solutions. They can be measured three ways:

1. by their pH, or powers of hydrogen.
2. by their concentrations which we apply them. pH is a measurement of acidity, neutrality, and alkalinity of a water-based solution. Acidic solutions are also known as “soure.” Alkaline solutions are also known as “hot” or “base.”
3. by their ingredients and it’s concentration. Some products may be stronger, or a more efficient cleaner than others but have a milder pH.

Logrithmic Scale: 10 X

- Each number of the pH scale represents a logrithmic counting by ten.
- Each number represents a ten fold increase in molecular activity. Going from a neutral 7 pH to an 8 pH, will increase the activity ten times. Going from a 8 pH to a 9 pH will increase the activity to another ten times. (100 times a neutral 7 pH)
- In the same way, going from a neutral 7 to an acid 6 will increase the chemical activity 10 times. Going from acidic 6 pH to an acidic 5 pH will increase the chemical activity 10 times more.
- A cleaning technician will usually notice the difference going from one digit in strength over the previous number. Generally the higher the pH alkaline, the greater the ability to work faster and dissolve oils.
- On the acidic side, a cleaning technician will generally notice the difference in stain removal when correcting a coffee or urine stain, for example, by increasing the acidic strength from a 5 to a 4 pH.

We generally clean with alkaline solutions so we may neutralize the acidic soils and remove them. The pH of most synthetic floor cleaning and other type of cleaners are alkaline for that reason.

THE CHEMICAL OPTIONS

The Varying Chemistry and the Power of Choice

DETERGENTS	
1. Detergent alone	(should be 7 to 9 pH range)
2. Detergent with encapsulating properties	(cleans and helps retard re-soiling)
3. Detergent with acidic /fiber rinse	(cleans and provides neutralizing after cleaning)

ENCAPSULATION
1. As an additive to cleaning solutions only.
2. A detergent that encapsulates
3. A shampoo that encapsulates
4. An acidic rinse /fiber rinse that encapsulates
Crystalizing, encapsulation leaves a coating that designed to slow down re-soiling. Encapsulation may be offered as a stand-alone product or as an additive to a detergent or shampoo.

ACIDIC / FIBER RINSES
1.Acidic rinse alone (neutralizes chemicals and leaves fabric soft)
2. Acidic rinse with encapsulating properties
3. Acidic rinse with encapsulating properties, and acidic detergent

CARPET PRE-SRAYS / CARPET PRE-CONDITIONERS		
A choice of: **A. Mild, (pH 7-8)**	**B. Medium (pH 8-9)**	**C. Restorative (pH 9-10)**
1. Water solvent Pre-sprays	(standard - general soils)	
2. Enzyme Pre-Spray	(body and animal oils)	
3. Combination Pre-sprays	(solvent + enzyme)	

TRAFFIC LANE BOOSTERS
1. These products will vary by percentages of which solvents they include. 2. Some seem to be stronger than others. 3. Most recommend 1 -2 ounces per mixed gallon of pre-spray you mix. 4. Traffic Lane Boosters are also known as “blended solvents” They are a blend of both water and are petroleum-based solvents that are added by the cleaning technician in a MEASURED amount to your traffic lane pre-spray. 5. They boost the oil cutting ability of your pre-spray without raising /changing the pH of the pre-spray. An example is an 8 pH pre-spray + booster = 8 pH pre-spray, but may cut oils like a 9 or 9.5. or even higher. 6. These boosters are also used as ink and other oil-based stain removers. ALWAYS rinse well is they tend to leave a very high residue rate. There are many brands of booster, but they are all relatively the same.

SHAMPOO PRODUCTS	
1. Neutral pH Shampoos	(for simple, gentle work)
2. Acidic pH Shampoos	(for preventing brownouts, may contain reducing bleach!)
3. Enzyme Shampoos	(for digesting protein oils)
4. Natural Fiber Shampoos	(usually same as acidic shampoos)
5. Dry Foams	(aerated, dry foam, requires specialized equipment)

T.A.C.T. Temperature

250 Degrees – maximum / Levels off.
Continues upward
+18 degrees
= 172 degrees
+18 degrees
= 154 degrees
+18 degrees
= 136 degrees
+18 degrees
118 degrees - Base temperature / Starting point.

Temperature Samples:

1. Heated Portable Extractors

An inline electric heating unit. Will heat 160-200 degrees. Must keep up wand solution flowing to achieve desired heat.

2. Truck-Mounted Carpet Cleaning

Heated by either propane, exhaust, or other source, the heat is more intense (hotter), and generally more efficient.

Generally, the higher the cleaning pressure used in both portables and truck -mounted equipment, the hotter the temperature at the wand when the hot solution meets with the carpet face fiber. When desiring the hottest temperature, the more the wand is used without stopping / taking breaks /moving furniture, the hotter the solution stays. Remember, the hotter the temperature, the greater ability to melt the oily carpet soils = most common.