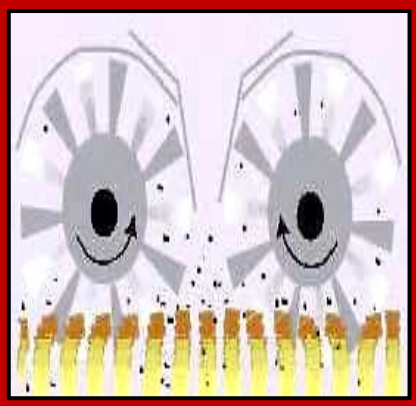
Restoration Training Services Presents

The Cleaning Basics 101 Series:

CARPET CLEANING



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MODULE 1 THE CARPET YARN BASICS

What are you cleaning?

The Natural, Synthetic, and Regenerated Yarns

All yarns are originated from:

1. A natural source

2. A manmade source (called synthetic)

3. A yarn consisting of natural materials but has been altered by synthetic additives or processed by man, known as a regenerated yarn. Rayon and acetate are the two regenerated yarns.

Yarns may be a "blend" of two or more yarns: two naturals, two synthetics, or a blend of natural & synthetic yarns. The most common blended yarns are wool & nylon, (mostly and olefin & nylon.

Natural yarns

1. Natural yarns are known for their much higher absorbency to moisture, as well as to cleaning solutions.

2. Natural yarns' higher absorbency leads to greater cleaning challenges, including extended dry times.

3. Natural yarns usually provide a lower expectation of results when removing soils, spots, and stains.

4. Natural yarns may also be expected to be more sensitive to the various cleaning products applied to them by both the professional and homeowner.

5. It is recommended highly that technicians take a professional training course prior to attempting to clean natural yarns. All-natural yarns should be tested thoroughly for colorfastness and other issues discussed later in this manual, prior to cleaning.

Synthetic Yarns

1. Synthetic yarns dry faster, stain less often, and generally clean easier.

2. Synthetic are generally less risk to the cleaning technician to clean.

3. Synthetic yarns generally will hold up to more aggressive measures to clean.

Filaments and Dye Sites

1. All yarns are made up of multiple small strands called filaments. Each yarn type may contain veritable amounts if filaments.

MODULE 2 CHEMISTRY 101: KEEPING IT SIMPLE

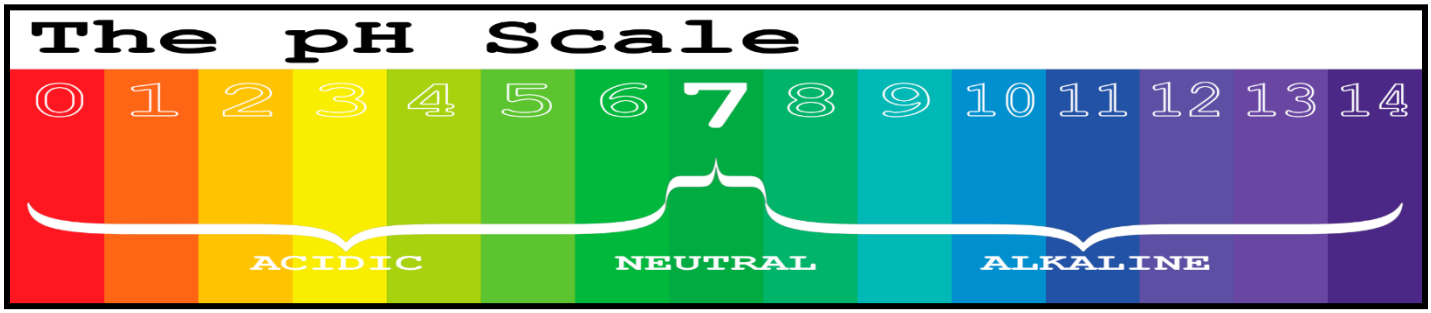
pH and the Basic Outline

When cleaning, we must address the strength of our cleaning solutions. They can be measured **two** 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."

- Each number to the left or right of 7 pH represents a ten-fold in molecular activity. Roughly speaking "strength." pH 7 is neutral but represents equal parts of acidic and alkaline.
- Example is going form 7 pH to 8 pH increases your chemistry strength 10 X. Going from 7 pH to 9 pH increases your chemistry strength 100 x. The same is for the acidic pH side of the scale.
- Neutral seven is equal parts alkaline and acid. An 8 alkaline pH neutralizes and acidic 6 pH, and a 5 pH acidic neutralizes a 9 alkaline pH, and so on.
- We generally clean with alkaline solutions because most all our soils, spots and stains are acidic. The alkaline will then neutralize the acidic soils and help to dissolve and remove them.



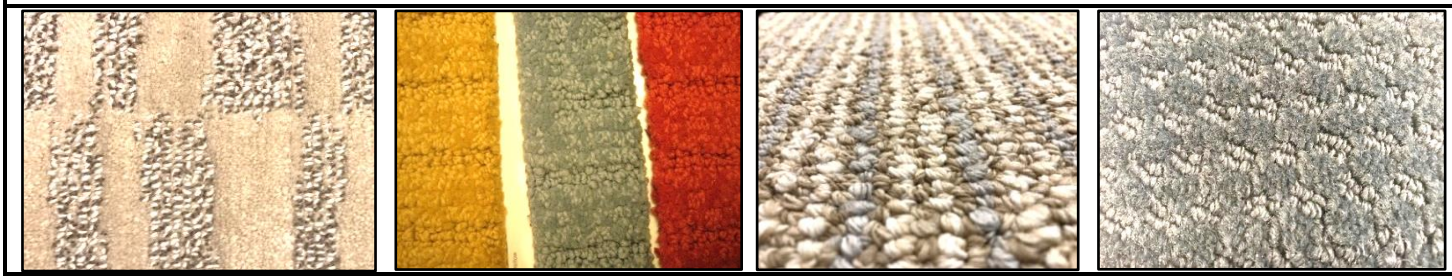
NEUTRAL 7 pH

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

(pH numbers are approximates for demonstration purposes only)

MODULE 4 YARN CHARACTERISTICS: SYNTHETIC YARNS

NYLON



Why is nylon different than other synthetic yarns?

NYLON VERSES OTHER SYNTHETIC YARNS:

Nylon	**Polyester, Triexta, Olefin, Acrylics**
1. May easily **absorb stains** with food coloring. (acid dyes, disperse dyes, turmeric dyes)	1. Naturally **resists** food coloring. (acid dyes, disperse dyes, turmeric dyes)
2. **Requires protectant** to resist staining	2. **Requires no protectant** to resist staining
3. Generally **will not** stain with oils	3. **May permanently** stain with oils.
4. **Absorbs water** and water-based solutions	4. **Absorbs very little / no water-based solutions**
5. Tends to dry **slow.**	5. Tends to dry **fast.**

To sum it up, clean nylon only as nylon, BUT clean polyester, olefin and triexta as one, same yarn.

As you can see, it is especially important and essential to be able to tell nylon from the other synthetic yarns. As far as identifying yarns, once you determine whether the yarn is synthetic, you only must determine if it is nylon or not. This is when you will find out why formic acid (fiber ID acid) is a carpet cleaners' best friend. Fiber identification is discussed in the next chapter.

Nylon = hydrophilic (water loving / *absorbent* to water)
Polyester, Triexta, Acrylic & Olefin = hydrophobic (*resists* water / very little absorbency)
Polyester, Triexta, Acrylic & Olefin = oleophilic (*absorbs* oils / may stain with petroleum **oils)**

A Warning About Oleophilic Yarns…

MODULE 9 THE CLEANING CHEMICAL BASICS

The Basic Cleaning Chemicals and Applications

DETERGENTS	
1. Detergent alone	(should be 7 to 9 pH range)
2. Detergent with encapsulating properties	(helps retard re-soiling)
3. Detergent with acidic /fiber rinse	(provides neutralizing after cleaning)
4. Detergent with acidic rinse / fluorochemical	(same as #3 plus protection)

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. May be best on synthetic commercial furniture. Encapsulation may be offered as a stand-alone product or as an additive to a detergent or shampoo.

TRAFFIC LANE BOOSTERS / BLENDED SOLVENT BOOSTERS
These products will vary by percentages of which solvents they include. Some seem to be stronger than others. Most recommend 1 -2 ounces per mixed gallon of pre-spray you mix. Traffic lane boosters are also known as "blended solvents" The at a blend of both water and petroleum-based solvents that are added by the cleaning technician in a MEASURED amount to your traffic lane pre-spray. 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. 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.

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
4. Acidic rinse with encapsulating properties, acidic detergent and fluorochemical

DRY CLEANING COMPOUNDS
1. Cellulosic base (natural plant based - gold, brown in color)
2. Polymer base (synthetic - white, powdery in color and texture)

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)

MODULE 12 SPOT AND STAIN REMOVAL

Defining a Spot

A spot is a removable substance that can be removed from the carpeting during routine spotting or normal cleaning procedures. A spot adds substance or texture to carpet pile. It may / may not require special pre-treatment. A **spot** is usually removed simply by spotting or the cleaning systems. Most spots are black or dark brown. Chewing gum and wax are examples of a spot. **Spots may reoccur when there is sticky residue or wicking.**

Light oils like butter

Medium oils

Milk

Smudge shoe tracking

Defining a Stain -An addition of color

A stain usually may not be removed during normal cleaning procedure. Stains often leave behind an addition of color, or an altered color, from the carpet's original manufactured color.

Red dye stains

Salsa

Colored yogurt

Paint

Ink spills

Defining a stain – A subtraction of color

A stain may also be color loss, a subtraction of a yarn color. It must be spot dyed on location. Only nylon and most natural yarns can be re-dyed on location. Olefin (polypropylene), triexta, acrylics, and polyester cannot be.

Nearly all dye loss stains on synthetic yarns are nylon fibers.