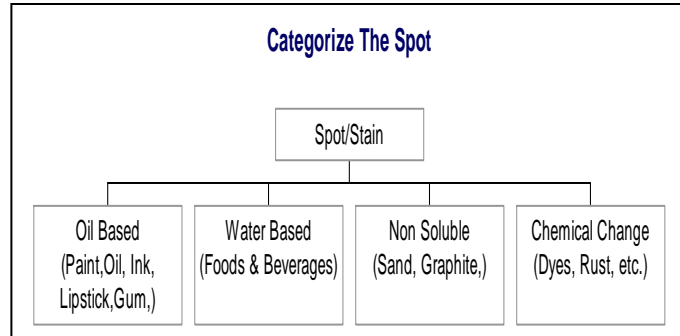


Spot & Stain Removal

The first step to successful spot removal is to identify and categorize the spot to be treated. There are four general categories that these spots may fall into.

1. Oil based
2. Water based
3. Non soluble
4. Chemical change

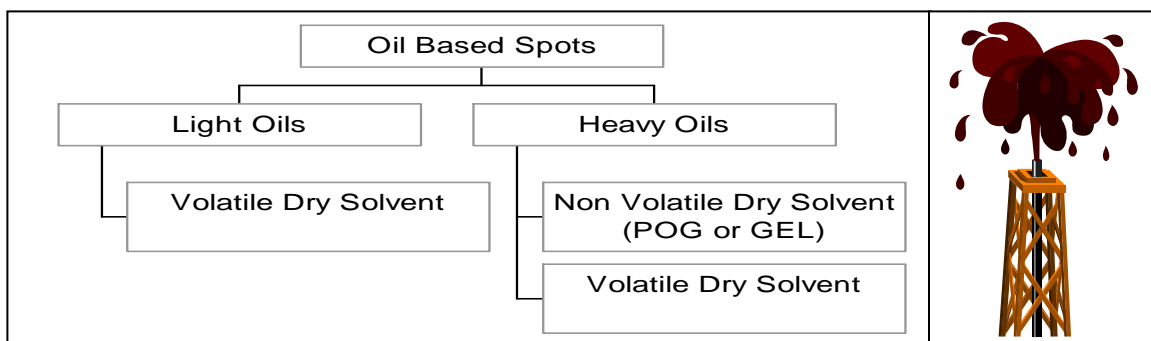


Oil Based Spots & Stains

Oil (petroleum) based soils are generally cleaned with dry solvents. Dry solvents can be generally divided into two types.

Volatile solvents are those that evaporate quickly and leave no residue. Some examples would be Perchloroethylene, 1,1,1, Trichloroethane, and the various alcohol derivatives. Volatile Dry Solvents are typically used on lighter oily spots such as inks or to remove residual POG after they have been used to spot heavier oily spots.

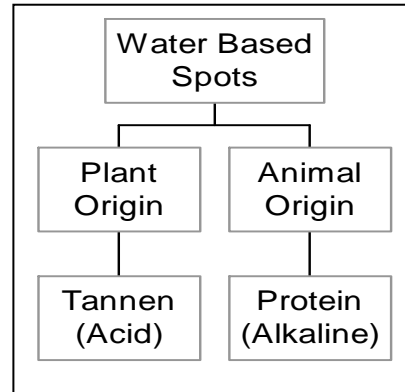
Non-volatile dry solvents are those that evaporate very slowly or not at all. Some examples would be mineral spirits, Amyl Acetate, or D-Limonene. NVDS typically is used in one of two forms. Liquid paint, oil, and grease remover (POG), or gel spotter. The gel is used when the objective is to keep the solvent on the surface while it dissolves the spot and not allow it to penetrate where it might damage latex or other substrates. The gel is also useful when exceptional suspension capabilities are needed to avoid spreading a spot.



Water Based Spots & Stains

Water Based Spots typically Originate from Plants or Animals.

In dealing with these spots, the Cleaner employs the principles Of pH neutralization.



Common plant origin spots, also known as Cellulosic spots include coffee, juice, catsup, soft drinks (sugar), and wine. These are generally cleaned with Tannin Spotters.

Common Animal origin spots & stains, also known as protein spots, would include blood, eggs, milk, cheese, mayonnaise, and gravy. These are generally spotted with protein (alkaline) spotters. One major exception to this “rule” that will be discussed later, is urine.

Albumin is a substance found in body fluids, such as blood that will harden (coagulate) if heated. Therefore, all protein spots should be first cleaned with cold water.

Sometimes a spot may contain materials from both plants and animals. An example would be coffee with cream. In cases like this it may be necessary to apply a tannin spotter and a protein spotter to the same spot. They should be applied on at a time and the spot should be thoroughly rinsed between applications (otherwise your spotters may neutralize each other).

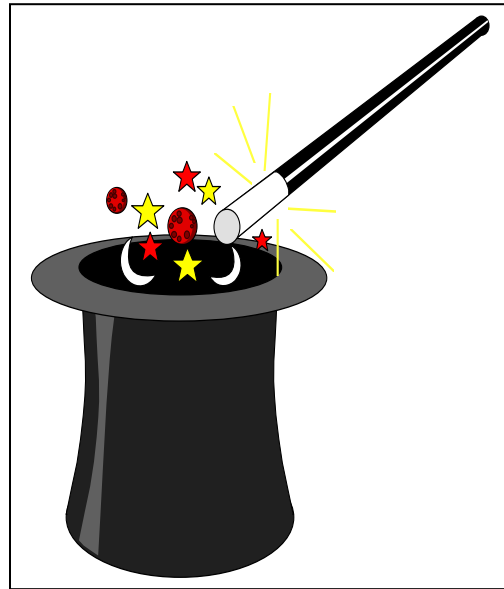
The big exception to the plant-acid and animal-alkaline “rule” is urine. When fresh, urine is a liquid acid and conforms to the “rule”. However, as it dries, urine changes both form and pH to become an alkaline crystal (salt) material. Therefore, if urine has been there long enough to change (a couple of days) it must be treated first with tannin (acid) to dissolve the salt crystals. Sometimes this transformation from acid to alkaline will also affect the acid dyes commonly used in carpet and result in color changes or loss. Standard spot removal techniques will not correct this color damage. Sometimes spot dyeing techniques can be used in these cases with good results.

Another factor to consider in cases of urine contamination is the amount (volume) of liquid urine that has been deposited in the carpet and try to match that amount with your tannin. It takes more than a few drops to neutralize a cup (or pint?) of urine. In addition to the discoloration (spot) caused by urine you should also keep the health aspects in mind and use appropriate anti-microbial and deodorizing agents, as well.

Even Though it is from an animal, Urine does not follow the rules.

Acid Liquid Becomes Alkaline Crystals (salt) as it dries.

Therefore, start with an acid (Tannin) for spotting urine older than 12 hrs..



A. Steps in Treating Urine Contamination

- 1. Apply Acid to Neutralize the Alkaline Salts**
- 2. Clean and Rinse Thoroughly**
- 3. Apply Anti-microbial agent**
- 4. Apply Deodorant**
- 5. Any Pad/cushion should be replaced**

Non Soluble Soils

The process of breaking down and suspending particulate soils that you either can't or don't want to dissolve is known as emulsification. Detergents and shampoos are typical emulsifiers for purposes of treating spots in this category. Sand, ashes, and graphite are typical examples of spots in this category. The common procedure is to whip the detergent into lather and suspend the soil in the suds. Extract out the suds (and soil) then thoroughly rinse any residues that remain.

Special Treatment / Chemical Change

This is where you might use your bleaches (oxidizing agents), strippers (reducing agents), or special procedures, such as heat transfer. When you are working on the spots in this category you have a 50/50 chance of removing the dyes, etc. from the textile and should only proceed with the client's permission and acceptance of liability.

Oxidation/Reduction

Oxidizing bleaches are those that add oxygen. Examples would be Sodium Hypochlorite, Hydrogen Peroxide, Sodium Perborate, and Sodium Percarbonate. Most oxidizing bleaches are accelerated with alkaline and slowed (or stopped) with acid. The reactions using oxidizing bleaches are generally very fast and not reversible.

Reducing bleaches are those that remove or strip away oxygen, (Hence the name "strippers"). Reducing bleaches are just the opposite of oxidizing bleaches and are generally accelerated with acid and slowed with alkaline. Examples of reducing bleaches are Sodium Bisulfate, Sodium Hydrosulfite, and Potassium Persulfate. The reactions using reducing bleaches are generally slower and more controllable than those of oxidizing bleaches. Most reducing bleaches are sold and stored in powdered form and mixed with water for use. They should be stored in cool, dry locations. If they become contaminated with water in concentrated form, the possibility of spontaneous combustion exists.

Control, control, control. Apply only the amount of cleaning agent needed; allow time for it to work. Agitate carefully, and rinse thoroughly. Mistakes can be expensive. Be patient and remember, if a little does a good job, more will not necessarily do any better. In fact, it may make things worse.

Wax & Crayons

Don't dissolve colored wax or crayons. Instead, use an iron and a towel or brown paper bag to melt the wax into the towel (paper) without releasing the dyes.

Furniture Stains

Some recent efforts with citrus gel and the heat transfer method have been fairly successful on relatively fresh furniture stains. It's worth a try (with the proper liability caveats).

Toner (photocopier ink)

The powdered ink from photocopiers should be removed dry (vacuumed) as much as possible. Then any residual that cannot be vacuumed out should be suspended in detergent rather than dissolved with solvent. This will prevent the spreading of the spot.

Procedural Keys

- ∞ **Application - amount and technique**
- ∞ **Dwell Time**
- ∞ **Agitation (Tamping, spatula...)**
- ∞ **Rinse, Rinse, Rinse**



From the web pages fill in the following...

The 5 Steps to spotting are –

1. _____
2. _____
3. _____
4. _____
5. _____

The Four General Categories of Spots & stains are:

1. _____
2. _____
3. _____
4. _____

Oil Based Spots respond best to _____ spotting agents.

When spotting milk, blood, eggs or other animal source spots use an _____ spotting agent.

For things containing sugar (juices, soft drinks, etc. use _____ spotting agents.

Particulate or non-soluble soil should be suspended using _____.

To neutralize urine salts use a(n) _____ agent.

When agitating a spot, use a _____ action.