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Stain Guide: User's Guide Supplement

Michigan State University

Cooperative Extension Service

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# stain out

## USER'S GUIDE SUPPLEMENT

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## A General Guide to Stain Removal

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### Contents

I. Introduction to the Guide .....	2
II. Care Labeling .....	2
III. Your Fabric and Stain Removers .....	2
A. Treatment Precautions .....	2
B. Fiber Content Precautions .....	2
C. Strong and Delicate Fabrics .....	3
IV. Immediate Steps .....	3
A. Water-Based Stains .....	3
B. Oil-Based Stains .....	3
C. Stains Having Consistency of Paste .....	3
V. Stain Removal Supplies .....	3
VI. Treating Stains .....	6
A. Testing Stain Removers .....	6
B. Working Surface .....	6
C. Sponging .....	6
D. Flushing .....	6
E. Tamping .....	7
F. Using A Spoon .....	7
G. Chlorine Bleach .....	7
H. Removing Stains From Suede and Leather .....	7
I. Removing Stains From Vinyl .....	8

## I. Introduction

THIS GUIDE provides general information for stain removal at home. It explains the various methods and the supplies needed. You will receive from your county Extension home economist a computer print-out of information which gives step-by-step directions for treating a particular stain. The computer print-out will refer to certain sections of this guide for additional information needed to give the best results.

Precautions which appear throughout the guide may help you prevent additional problems as a stain is being treated. For this reason, you should read the section on each stain remover you will be using before you begin the recommended treatment. (See Section V - "Stain Removal Supplies.")

Remember, it is important to treat stains as soon as possible. Stains which are relatively easy to remove when treated promptly may become permanently set if allowed to age. They also may become difficult or even impossible to remove when the wrong treatment is used. Some stains may be permanently set because of the nature of the stain itself, or because of the nature of the bond between fiber and stain.

If there is any question about your ability to remove the stain, seek the service of a reliable professional cleaner. He/she often is better equipped than the consumer to treat a stain with minimal damage to the fabric. Carefully weigh the value of the garment and the alternatives available.

Some fabrics may be highly susceptible to damage with any kind of treatment. In such cases proceed at your own risk.

## II. Care Labeling

Before treating a stain, read the information on the care label. As required by law, labels providing appropriate care instructions must be sewn inside garments manufactured since 1972.

Labels for washable items carry information on washing method, water temperature, drying method, drying temperature and whether or not bleach can be used. Washable items are assumed to be dry-cleanable unless the label says "Do not dry-clean." Labels may indicate that dry-cleaning only is recommended. Items that cannot be washed or dry-cleaned may be labeled, "Wipe with damp cloth only," unless they cannot be maintained by any method.

Stores that sell piece or yard goods are required to make available an appropriate care label for each piece of fabric sold (except remnants). If you sew, be sure to ask the sales person for these labels, and attach them permanently to the garments you make.

## III. Your Fabric and Stain Removers

### A. Treatment Precautions

Some stain removers or treatments damage certain fibers, fabrics, finishes, or dyes. They may cause fading, bleeding of dyes, loss of luster, shrinkage, or stretching. They also may remove durable finishes, designs, or pigment prints.

Loosely woven fabrics and fabrics made from low-twist yarns are likely to suffer yarn slippage or surface change if brushed or rubbed while wet. This causes the fabric to look worn and unsightly.

Some precautions related to fibers are given in the next section. Potential problems related to weave or dye may be discovered by testing before a recommended treatment method is used. (See Section VI - A, "Testing Stain Removers.")

If the substance or procedure needed to remove a stain will damage the fabric, take the article to a dry-cleaner as soon as possible. However, even a dry-cleaner cannot correct damage caused by some stains or stain removers. Liquids that contain a high percentage of alcohol, for example, bleed some dyes, making it impossible to restore the color.

### B. Some Fiber Precautions

**Wool, Silk**—Strong acids and alkalis are harmful. Never use chlorine bleaches. Sodium perborate bleaches sometimes may be used. Diluted ammonia may be used. Do not use high temperatures.

**Acetate, Triacetate** (Arnel)—Strong acids, alkalis, and bleaches are harmful. Never use acetone. Diluted ammonia may be used. Dilute alcohol with at least two parts water. Some fingernail polishes and polish removers cause permanent damage. Velvets with acetate pile should never be treated with a stain remover that contains water.

**Nylon, Acrylic** (Orlon, Acrilan), and **Polyester** (Dacron)—Most stain or spot removers are safe to use. Observe precaution in the use of acids. Follow directions for bleaches.

**Modacrylic** (Dynel)—Some solvents damage modacrylics. Dry-cleaning solvents can be used to remove greasy stains. Never use acetone.

### C. Strong and Delicate Fabrics

The computer print-out often specifies treatment of fabrics on the basis of their strength or delicacy. The following definitions may help you decide in which way a given fabric could be described.

**Strong fabrics**—durable, sturdy fabrics having generally stable dimension, texture, hand, and color.

**Delicate fabrics**—fabrics which are highly susceptible to change in dimension, texture, hand, or color.

The information in this section, along with care label information, can be helpful for stain removal as well as for normal care of garments.

## IV. Immediate Steps

When a staining accident occurs, blot excess liquid with a clean cloth, white paper towel or tissue, clean sponge, or absorbent cotton. **Barely touch the liquid with the tip of the absorbent material to avoid forcing the stain further into the fabric. Do not apply any pressure to the stained area.**

### A. Water-Based Stains

If the stain is not greasy, some of the liquid that has soaked into the fabric may be removed by adding a little water to the stain. Though water may cause spotting of some fabrics, it is safe to use if the care label says "washable." If the garment is not washable, or if there is no care label, test the fabric first. (See Section VI—A "Treating Stains—Testing Stain Removers.")

To remove at least some of the water-based stain as quickly as possible, proceed as follows: Place clean, dry, absorbent material under the stained area. Sprinkle a few drops of cool water on the stain, and blot immediately with more clean, dry, absorbent material. It is important that a clean, dry piece of the absorbent material be used both above and below the stain each time water is added. Repeat until no more stain appears on the absorbent material. If stain remains, proceed as soon as possible with specific treatment for that stain.

### B. Oil-Based Stains

If the stain is oily (greasy), sponge it as soon as possible with dry-cleaning solvent (described in Section V—J of this guide). Before sponging, test the fabric. (See Section VI—A "Treating Stains—Testing Stain Removers.") **CAUTION:** If you are wearing the stained garment, be careful not to let dry-cleaning solvent come in contact with the skin because the solvent can cause skin irritation. If possible, change clothes and hang the garment outdoors or in a well-ventilated area after treatment. If you cannot change clothes, use only a very small amount of solvent, and place absorbent material between the garment and the skin. **DO NOT** allow areas

of clothing sponged with dry-cleaning solvent to touch the skin until all the solvent has evaporated.

Dry-cleaning solvent is poisonous and may be flammable. Follow precautions given in Section V—J of this guide, as well as any precautions on the label of the solvent bottle.

### C. Stains Having Consistency of Paste

If the staining material has the consistency of a paste, remove the excess with a dull knife or spoon, taking special care not to force the stain further into the fabric. Subsequent treatment with stain remover will be most effective when surface staining material has been removed.

## V. Stain Removal Supplies

If you keep on hand the supplies listed in this section, you can remove most common stains.

Many of these items are ordinary household supplies. Substitutes are suggested for a few supplies that may be difficult to obtain.

Follow carefully all precautions for the storage and use of dangerous chemicals.

### A. Absorbent Materials.

You will need an ample supply of clean absorbent materials, such as absorbent cotton, white paper towels, white facial tissues, and soft white cloths. Sponges are also useful, but test them to make sure they will not be damaged by stain removers.

### B. Alcohol

Use rubbing alcohol or denatured alcohol (70% or 90% concentration). Do not use alcohol with added color fragrance.

For use on stained fabrics made of acetate, dilute alcohol with two parts water to one part alcohol.

**CAUTION:** Alcohol is poisonous and flammable. Observe all precautions on the label. Alcohol fades some fabric dyes, so test the fabric for colorfastness before using alcohol on a stain. (See Section VI—A, "Treating Stains—Testing Stain Removers.")

### C. Ammonia

Use household ammonia only. Do not use ammonia with added color or fragrance.

For use on wool and silk, dilute ammonia with an equal amount of water.

**CAUTION:** Ammonia is poisonous. Avoid inhaling ammonia fumes. Ammonia will cause burns or irritations if it comes in contact with the skin or eyes. Observe all precautions on the label. **Do not** mix ammonia with chlorine bleach; resulting fumes are highly toxic and dangerous.

Ammonia changes the color of some fabric dyes. To restore the color, rinse the color-changed area thoroughly with water, and apply a few drops of white vinegar to the fabric. Rinse well with water.

#### D. Amyl Acetate

Amyl acetate (banana oil) is sold in drug stores. Ask for "chemically pure amyl acetate."

If you cannot obtain amyl acetate, substitute fingernail polish remover. **DO NOT** use oily-type nail polish remover.

**CAUTION:** Amyl acetate is poisonous and flammable. Do not breathe the vapors. Avoid contact with the skin.

Amyl acetate is a strong solvent for plastics. Do not allow it to come in contact with plastics or furniture finishes.

Nail polish remover dissolves acetate.

#### E. Brushes

Brushes are used for a stain removal procedure called tamping. (See Section VI—E, "Treating Stains—Tamping.") The most suitable brush is the type used for applying shoe polish (handle perpendicular to the bristles) usually sold in a package of two.

Brushes used for stain removal should be new and should not be used for any other purpose. It is best to have 2 brushes, so that one can be used for stain removers that contain water and the other for dry-cleaning solvent and amyl acetate.

The brushes should have nylon bristles because hair bristles become soft when wet with water. The bristles should be cut squarely and all the same length.

If the brushes have plastic handles, test the handles with stain removal chemicals, especially amyl acetate, to make sure the chemicals will not damage them. Dissolved handles could cause additional stains.

If the handle is damaged by the amyl acetate or any other stain remover, use a smooth spoon rather than a brush when using that stain remover. (See Section VI—F, "Treating Stains—Using a Spoon.")

#### F. Chlorine Bleach

Chlorine bleach is used to remove many kinds of stains. Check the label on the bleach container to be sure it is a chlorine-type rather than an oxygen-type bleach.

Chlorine bleach damages some fibers, dyes, and finishes. Check the garment care label for precautions regarding the use of bleach, and read the label on the bleach container. Test the fabric before using bleach on the stain. (See Section VI—A, "Treating Stains—Testing Stain Removers.") Do not use chlorine bleach on fabric which has been treated with a flame-retardent

or a permanent press finish unless the care label states that the use of chlorine bleach is safe for the fabric.

The resin in some special finishes absorbs and retains chlorine, which weakens and yellows the fabric. Some fabrics do not show evidence of damage until they are ironed; then they may be severely weakened and/or discolored. Obtain information from your county Extension home economist agent on removing the discoloration caused by chlorine from such fabrics. Chlorine stains on silk, wool, or spandex fabrics cannot be removed.

Do not bleach garments in metal containers or allow metal objects to come in contact with the bleach. The presence of a metal may speed up the action of the bleach enough to cause fiber damage. Also, bleach may tarnish metal and cause additional stains on fabrics. Avoid spilling or splattering bleach on garments and nearby surfaces.

**CAUTION:** Chlorine bleach is poisonous. It will cause burns or irritation if it comes in contact with the skin or eyes. Observe all precautions on the label. **DO NOT** mix with ammonia; resulting fumes are highly toxic and dangerous.

#### G. Coconut Oil

Coconut oil is sold in drug stores and health food stores. It is used in the dry spotter solution which is used to remove many kinds of stains. (See Section V—K, "Stain Removal Supplies—Dry Spotter.") If you cannot obtain coconut oil, substitute mineral oil (sold in drug stores) which is almost as effective as coconut oil.

#### H. Color Remover

Color remover is sold in drug stores, grocery stores, and variety stores, usually located in the display of home dyes and tints.

Color remover is safe for most fibers, but fades or removes many dyes. If color remover causes a distinct color change rather than fading, the original color may be restored by rinsing the area with water immediately. Hang the garment to dry.

If color remover causes fading, the original color cannot be restored.

Do not use or store color remover in metal containers or use it with metal objects.

**CAUTION:** Color remover is poisonous. Avoid swallowing, contact with eyes or prolonged contact with skin. Observe all precautions on the label.

#### I. Detergent

**Use liquid dishwashing detergent.** Do not use detergent for automatic dishwashers, heavy-duty

household detergents, or laundry detergents. They may contain alkalis that could set some stains.

When the computer print-out specifies the use of soap, be sure the word "soap" appears on the package label of the product.

## J. Dry-Cleaning Solvent

Dry-cleaning solvent is sold in drug stores, grocery stores, variety stores, hardware stores, and automobile service stations. It may contain any or all of the following ingredients: petroleum solvent; petroleum hydrocarbon; petroleum distillate; 1, 1, 1-trichloroethane; perchloroethylene; or Varsol.

**CAUTION:** Dry-cleaning solvents are poisonous and may be flammable. They give off poisonous fumes and can be poisonous on contact with the skin. When using dry-cleaning solvent, work outside or in a well-ventilated room, and arrange work so that fumes are blown away from you. Do not lean close to your work. Use only a small quantity at a time. Do not pour solvent into a bowl. Do not allow children or pets into the room.

If you spill dry-cleaning solvent on your skin, wash it off immediately. If you spill it on your clothing, change immediately and hang the garment outdoors until all solvent has evaporated. Store dry-cleaning solvent in tightly capped, unbreakable containers. Store it out of the reach of children and where it cannot be ignited by flames or sparks.

**Do not** use any solvent in a room with an open flame or gas pilot light, or where there is a chance of electrical spark from refrigerators, fans, vacuum cleaners, or static. Do not smoke. Although nonflammable solvents do not ignite on contact with a flame or spark, they decompose and produce extremely toxic (dangerous) vapors. These vapors are especially toxic to persons who have consumed even a small amount of alcohol.

Never use dry-cleaning solvent in a washing machine. Do not put articles that are damp with solvent into a dryer.

Observe all precautions on the label.

## K. Dry Spotter

To prepare dry spotter, mix one part coconut oil and eight parts dry-cleaning solvent. This solution is used to remove many kinds of stains.

Dry spotter keeps well if the container is tightly capped to prevent evaporation of the dry-cleaning solvent.

If you cannot obtain coconut oil, use mineral oil in the same amount as coconut oil.

**CAUTION:** Dry-cleaning solvent is poisonous and may be flammable. Follow all precautions given above for use of dry-cleaning solvent.

## L. Enzyme Product

Use either an enzyme presoak or a laundry detergent containing enzyme. These products may be stored as purchased, but they become inactive if stored after they have been dissolved in water.

## M. Glycerine

Glycerine is sold in drug stores. It is used to prepare "wet spotter," which removes many kinds of stains. It is also used in removing ballpoint ink stains.

## N. Hydrogen Peroxide

Use the 3% solution sold as a mild antiseptic. Do not use the stronger solution sold in cosmetic departments for bleaching hair.

Hydrogen peroxide is safe for all fibers, but dyed fabrics should be tested for colorfastness. (See Section VI—A, "Treating Stains—Testing Stain Removers.")

Store in a cool, dark place. Hydrogen peroxide loses strength when stored for extended periods of time.

Bleach that contains sodium perborate or "oxygen-type" bleach may be substituted for hydrogen peroxide, although it is slower acting. Very thorough rinsing is needed to remove this type of bleach from fabric.

Do not use or store hydrogen peroxide or "oxygen-type" bleach in metal containers or use it with metal objects. Metal may speed up the action of the bleach enough to cause fiber damage. Also, some metals in contact with hydrogen peroxide or "oxygen-type" bleach may tarnish and cause additional staining of fabrics.

## O. Iodine

Use tincture of iodine, which can be purchased at a drug store. It is used for removal of some medicinal stains such as penicillin and silver nitrate. **CAUTION:** Iodine is poisonous.

## P. Oxygen-Type Bleach

Oxygen-type bleach is often called perborate bleach. Check the label on the container to be sure it is an oxygen-type rather than a chlorine-type bleach. (Also, see Section N, above, "Hydrogen Peroxide.")

## Q. Sodium Thiosulfate

Use pure sodium thiosulfate or "fixer" sold in drug stores and photo supply stores. Do not use photo fixer solution that contains chemicals in addition to sodium thiosulfate.

Sodium thiosulfate solution is used to remove iodine and chlorine bleach stains. (Chlorine bleach stains cannot be removed from wool, silk, or spandex.)

This solution keeps for several months if it is tightly capped.

## R. Vinegar

Use white vinegar; colored vinegar can leave a stain. Vinegar is safe for all fibers but changes the color of some dyes. If a dye changes color after vinegar has been used, rinse the color-changed area thoroughly with water and add a few drops of ammonia. (See precautions in Section V—C, "Stain Removal Supplies—Ammonia.")

Rinse well with water.

## S. Wet Spotter

Prepare wet spotter by mixing one part glycerine, one part liquid hand-dishwashing detergent, and eight parts water. Shake well before each use. This mixture is used to remove many kinds of stains.

Wet spotter may be conveniently stored in a plastic squeeze bottle with a small cap.

## T. Miscellaneous Supplies

You will need bowls (do not use metal bowls) for soaking stained articles, medicine droppers, a smooth stainless steel spoon, a glass surface on which to work (glass pie pan, e.g.), and aluminum foil.

## VI. Treating Stains

This section describes the most effective techniques for using stain removers. Stain removal procedures which are called for in the computer print-out instructions (available from your county Extension home economist) are described below.

### A. Testing Stain Removers

Before using any stain remover, including water, test it to be sure that it will not harm the fabric or dye. In each case, test the recommended stain remover and method on an unexposed portion of the article—for example, a seam allowance, hem, inside of a pocket, or tail of a shirt or a blouse. Be sure that chemical solutions penetrate the fabric well during the test (unless otherwise stated) and that all of the solution is removed from the treated area upon completion of the test. Blot dry with a paper towel.

### B. Working Surface

The working surface for stain removal should be a hard surface that will not be affected by any of the chemicals used.

A heavy glass pie pan, turned upside down, makes a good working surface. Other glass surfaces may also be used. Chemicals used for removing stains can damage the finish of a table or countertop and then transfer a new stain to the fabric on which you are working. Protect tables or countertops from spilled or dripping chemicals with aluminum foil. Special care is necessary

when using bleach, color remover or hydrogen peroxide. (See Section V—N, "Stain Removal Supplies—Hydrogen Peroxide.")

### C. Sponging

When directions call for sponging, use the following procedure:

—Place the stained area, stained side down, over a pad of absorbent material. Dampen another piece of absorbent material with the stain remover you have been directed to use. Sponge the stain lightly from the center toward the edge. The stain is less likely to form rings if you work in this direction.

—Keep the wet area around the stain as small as possible. Sponge the stain irregularly around the edges so there will be no definite line when the fabric dries.

—Change the sponging pad and the absorbent material under the stain as soon as you can see that any stain has been transferred to them. They should be changed frequently so that the released staining material will not be returned to the fabric.

**Preventing rings**—If a fabric tends to form rings when sponged with a stain remover, use special care in sponging the stain. Apply only enough stain remover to the sponging pad to barely dampen it. Touch the pad to the stain very lightly so that the fabric will absorb the stain remover slowly. Avoid spreading the wet area.

Before drying the article, place the sponged area between layers of dry absorbent material to remove excess moisture. Dry as rapidly as possible, but do not use heat on fabric treated with anything besides water.

**Hardened stains**—For hardened stains, such as old paint or tar, place an absorbent pad under the stain and a pad dampened with the recommended stain remover on top of the stain.

Allow the article to soak until the stain has softened. This may take half an hour to several hours. Keep the stain damp by adding stain remover as needed. If the fabric is sturdy enough, use a tamping brush or spoon to speed up release of the stain. (See procedures E through F below.)

### D. Flushing

Flushing is an important stain removal procedure.

Flushing is necessary to remove released staining material. When directions call for flushing, place clean, absorbent material under the stain, then add the proper stain remover in small amounts with a medicine dropper or a container from which you can pour slowly. Do not add stain remover faster than the absorbent material can soak it up. Keep the treated area as small as possible. Change the absorbent material several times as you flush the stain.

Flushing with water removes stain-releasing chemicals from the fabric. If a chemical remains in the fabric, it may cause damage or another stain.

When you are directed to flush a washable article with water, dip the stained area up and down repeatedly in a bowl of warm water. Change the water at least twice.

### E. Tamping

Tamping the stain with a brush provides the gentle agitation needed for removal of some stains. (See Section V—E "Stain Removal Supplies—Brushes.") Place the stained area directly on the working surface, stain side up, without any absorbent material under the stain.

To control the amount of pressure applied, hold the brush horizontally with the bristles facing downward. The tamping action is much like driving a tack with a small hammer. (See Figure 1.) Using a gentle action, raise the brush 2 or 3 inches above the fabric and lower it squarely onto the stain. Never use enough pressure to bend the bristles.

Striking with the edge of the brush is inefficient in removing stains and may damage the fabric.

Use the least amount of tamping that will remove the stain. Too much tamping can also damage the fabric. The amount of tamping a fabric can take without damage depends on the yarn and the fabric structure. A closely woven fabric of high-twist yarn will not be damaged as easily as a loosely woven fabric of low-twist yarn.

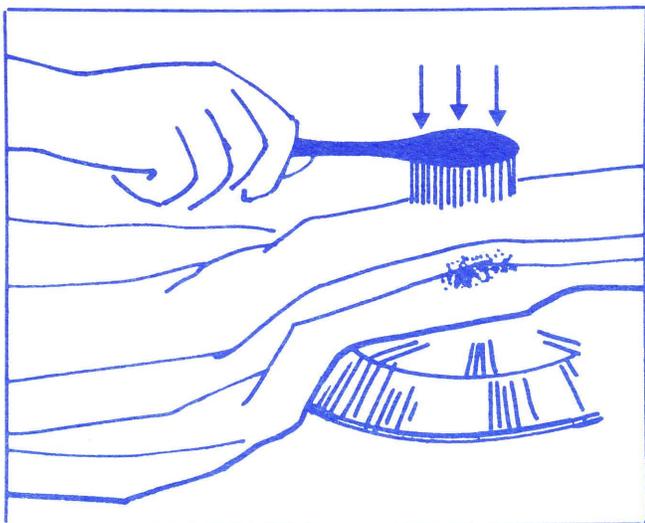


Figure 1. How to hold a brush.

### F. Using a Spoon

The bowl of a smooth **stainless steel** teaspoon is an effective tool for loosening stains.

Place the stained material directly on the working surface, stain side up, without any absorbent material underneath. Add the stain remover.



Grasp the spoon handle near the bowl, placing your thumb inside the bowl. (See Figure 2.) With the side of the bowl resting lightly on the fabric, move the spoon back and forth on the stain about 1/4 inch in each direction. Short strokes are the most effective. Do not press down with the spoon; this could damage the fabric.

Do not use this procedure on delicate fabrics.

### G. Chlorine Bleach

As stated in the computer print-out, chlorine bleach may be used to remove the final trace of some stains. Chlorine bleach should not be used on certain fabrics. (See Section V—F, "Stain Removal Supplies—Chlorine Bleach."; also see Section III—B, "Your Fabric and Stain Removers—Fiber Content Precautions.") **Test colors to be sure they will not be changed.** (See Section VI—A, "Treating Stains—Testing Stain Removers.") To remove the stain, use a solution of 1 teaspoon bleach to 1 tablespoon water. Apply with a medicine dropper. **Do not allow this solution to remain on the fabric more than 2 minutes.** When the stain is removed, after 1 or 2 minutes, flush with water onto clean absorbent material. Apply 1 teaspoon vinegar and again flush with water. Be sure all bleach is removed.

### H. Removing Stains from Suede and Leather

Do not attempt any **major** stain removal from suede and leather garments. These articles are saturated with oils and finishes that are affected by dry-cleaning solvent and other stain-removal agents.

Most dyes on suedes, especially the darker colors, are easily bled by stain removers containing water. Before trying any removal method, test the color of the article by very lightly sponging an unexposed seam allowance with a damp cloth. If no color is transferred to the damp cloth, you may wipe small stained areas very lightly with a cloth that is barely damp with water

only. **Do** not use detergent or other stain removal agents.

When a suede or leather article becomes damp from water, whether from rain or stain removal, it should be dried in room temperature air. **Do not** apply heat.

Any attempt to remove a grease or oil stain with a dry-cleaning solvent usually disturbs the finish and produces a light-colored area. If you should decide to attempt stain removal with dry-cleaning solvent, test it on an unexposed area by wiping **very lightly** with a clean cloth **barely** dampened with the solvent. If there is no evidence of damage **after** all of the solvent has evaporated, you may consider using the same procedure on the stained area.

### I. Removing Stains from Vinyl

Stain removal procedures using water and liquid hand-dishwashing detergent with vinegar or ammonia

are usually safe for vinyl. Test a hidden seam allowance before trying to remove the stain. A blotting action is the safest method for treating stains on vinyl. Do not use a rubbing or tamping action because this may change the surface appearance.

Some vinyl articles are resistant to dry-cleaning solvents, but many are damaged by solvent. Dry-cleaning solvent can remove the plasticizers used to soften vinyl, causing stiffening and greatly reducing garment life. The effect of the solvent should always be tested on an unexposed portion of the garment. If there is **no evidence** of damage during the test, oil or grease stains may be treated by sponging the surface of the vinyl very lightly with a clean cloth barely dampened with dry-cleaning solvent. Do not make more than a few strokes with the cloth. Repeated rubbing can remove the plasticizer and may change the appearance of the vinyl surface.

### Credits and Acknowledgements

Primary Source:

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Agricultural Research Service  
Removing Stains from Fabrics, House and Garden  
Bulletin No. 62  
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