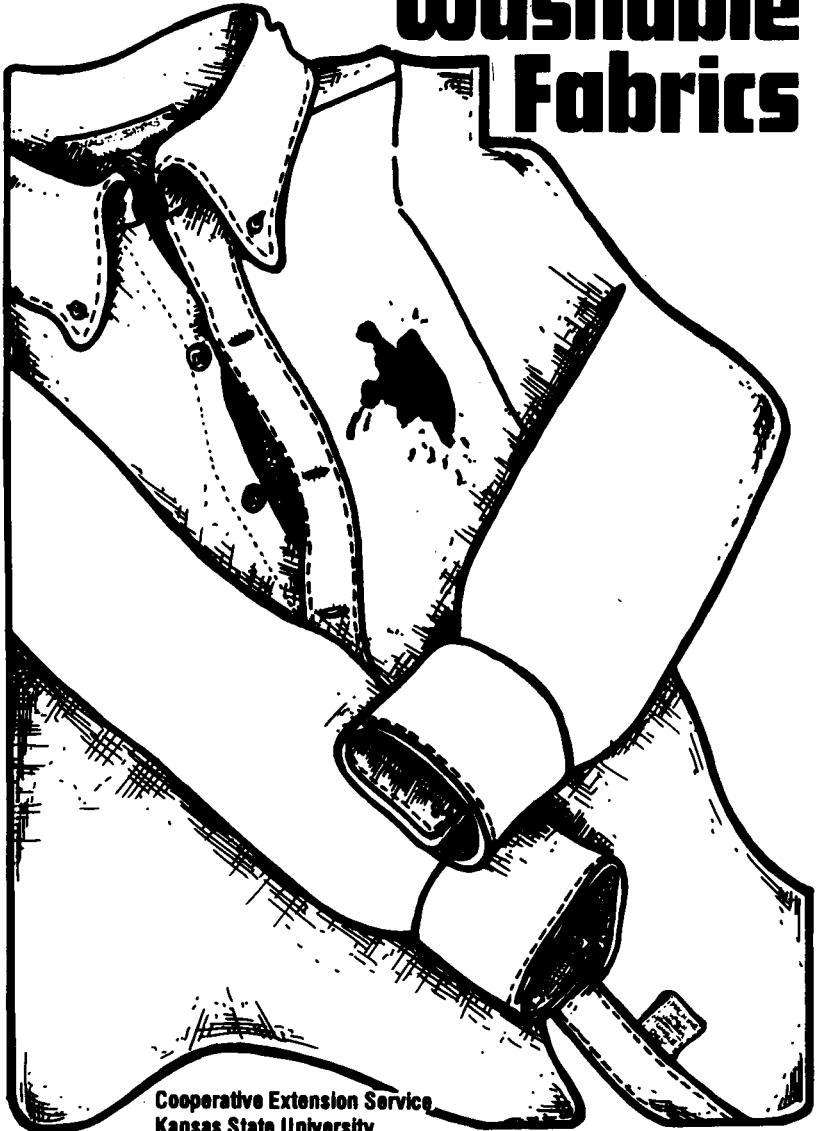


Spot & Stain Removal for Washable Fabrics



Cooperative Extension Service
Kansas State University

Stain removal is a common and troublesome problem in the care of clothing. Often garments are discarded because of stains damage done while attempting to remove stains. Today it is especially important to extend the clothing budget, and one way to do this is to learn and follow correct stain removal procedures.

Stains should be treated promptly with the correct methods and products. Some stains become more difficult or even impossible to remove with the wrong treatments. Other stains may be relatively easy to remove if treated promptly, but not if allowed to set permanently.

The instructions and procedures described here apply only to washable items. Stains on garments labeled “dry clean only” are best removed by a professional dry cleaner.

Care labels and hang tags are a valuable source of information on fabric care. Permanent care labels, required on most ready-to-wear clothing, give specific instructions. Hang tags often give information special fabric finishes and properties. Fiber content must also be listed. Knowing the properties of the various fiber families (or generic classifications) gives clues to care. Read and carefully follow the manufacturer’s care suggestions.

Stain Removal

Products and Supplies

You may have some stain removal products on hand, and you can buy others in supermarkets, drug stores, and hardware centers. Because the successful removal of many stains depends on prompt treatment, it is advisable to keep supplies on hand. Carefully follow the manufacturer's instructions for storage. Before applying to fabric, read label precautions related to personal and fabric safety. Information is also listed below.

Absorbent materials— You will need a good supply of clean, absorbent materials such as absorbent cotton, white paper towels, white facial tissues, and soft white cloths. Clean sponges may be used, but test stain remover to be sure they will not be damaged.

Alcohol (rubbing, denatured or isopropyl)—Can dissolve some stains and remove color in other stains. Buy a 70 or 90 percent concentration that does not have added color or fragrances. When working with acetate, dilute the alcohol with two parts water to one part alcohol. Do not use on silk. Test before using as it fades some dyes.

Caution: Rubbing alcohol is poisonous and flammable. Observe all warnings on the label.

Household ammonia (without added color or fragrances) -Available in supermarkets and drug stores; changes the color of some dyes. Test on the fabric before using. If color does change, rinse the area with water, apply a few drops of white vinegar and rinse with water again. This *sometimes* will restore the original color. To use on silk or wool, dilute with equal parts of water.

Caution: Ammonia is poisonous. Do not breathe fumes. Ammonia will cause burns or irritation if it comes in contact with the skin or eyes. Observe all warnings on the label.

Amyl acetate (banana oil) is sold in drug stores. Ask for “chemically pure amyl acetate.” It is a strong solvent for plastics. Do not allow it to come in contact with plastics or furniture finishes. If you cannot find this product, you may substitute *non-oily* fingernail polish remover. Do not use fingernail polish remover on acetate, triacetate or modacrylic fabrics. If in doubt about fiber content, test before using.

To test: With a medicine dropper apply a few drops of fingernail polish remover to a hidden part of the garment such as a seam allowance or inside facing. If the fabric is acetate or triacetate it will feel sticky and will stiffen permanently when the remover evaporates.

Caution: Amyl acetate and fingernail polish remover are poisonous and flammable. Do not breathe vapors. Avoid contact with the skin.

Bleaches-chlorine, oxygen or hydrogen peroxide. Chlorine bleach (identified by “hypochlorite” on the label) is more effective than the oxygen type, but may damage some fibers, dyes and finishes. It should not be used on silk, wool or spandex fibers or on some flame-retardant or resin-finished fabrics. Chlorine bleach also damages urethane fabrics, polyurethane foam and some flame-retardant finishes. Chlorine bleach can react with rust in hard water and turn clothes pink. Test by adding 1 tablespoon chlorine bleach to 1 cup of hot water. If the water turns red or brown, it contains excessive iron and you should only use oxygen bleaches.

Read the care label to determine if bleach is safe for the garment. If in doubt about the fabric’s colorfastness, test for color change before using by mixing 1 tablespoon bleach and 1/4 cup water and applying to a hidden area of the garment. Wait 3 minutes and rinse with water. If the color has changed, do not use the chlorine bleach solution. Try an oxygen bleach which is safe for most fabrics and identified by “perborate” or “all-fabric” on the label. Use 1 or 2 tablespoons to 2 cups water to test the oxygen bleach. If color changes, do not use the oxygen bleach. Try a 3 percent solution of hydrogen peroxide sold as a mild antiseptic. *Do not use the stronger solution sold for bleaching hair.* Hydrogen peroxide is safe for all fibers, but dyed fabrics should be tested for colorfastness. Thorough rinsing is needed to remove bleach from fabrics.

Caution: *Chlorine bleach is poisonous. It will cause burns or irritation if it comes in contact with the skin or eyes. Do not mix chlorine bleach and ammonia. The fumes that result can cause serious injury or death. Observe all warnings on the label.*

Detergents are available in liquid or powder forms. Liquid detergents are more concentrated than powdered detergents, and more convenient and effective for pretreating spots and stains.

To pretreat spots and stains with liquid detergent, pour a small amount directly on the stain and rub briskly with your hands. Place the pretreated item in the washing machine with the rest of the clothes.

To pretreat with powdered detergent, mix a small amount with enough water to form a thick paste. Use the paste as you would a liquid detergent.

Dry cleaning solvents are sold as spot and stain removers under various brand names. They are effective grease solvents, but they can be harmful to the user. Look for products containing any of the following ingredients: petroleum solvent, petroleum hydrocarbon, petroleum distillate, perchloroethylene or trichloroethane. Buy products labeled “fireproof” if possible.

Caution: *Dry-cleaning solvents are hazardous to use; most are flammable; all are poisonous. Do not breathe vapors. Avoid contact with the skin. Observe all warnings on the label.*

Enzyme presoaks help remove many stains and work especially well on protein stains such as eggs and milk. They are most effective in warm to hot water. Clothes should be allowed to soak 15 to 30 minutes. To preserve the

strength of the presoaks, do not mix them with water until you are ready to use, and do not combine them with chlorine bleaches. Follow the manufacturer's directions concerning the amount to use.

Glycerine-available in drug stores. Sometimes helpful in removing ballpoint ink.

Prewash spot and stain removers contain dry-cleaning solvents or detergents and are available in aerosol, liquid or pump forms. They are particularly effective for oily stains or permanent press and synthetic fabrics such as nylon and polyester. Follow the manufacturer's directions carefully. Do not spill or spray on table tops, washers or dryers because these removers will damage some plastics. Apply directly to dry fabric and launder as recommended on the care label of the garment.

Rust removers— A commercial product works best, but must be used with caution. Follow manufacturer's directions carefully.

Caution: Rust remover is poisonous. It will cause burns or irritation if it comes in contact with the skin or eyes. Observe all warnings on the label.

Waterless hand cleaners are especially effective on greasy stains. They were originally intended to remove grease from hands, but are safe for most fabrics (test first). These cleaners are a creamy lotion usually sold in tubes or small cans and can be purchased in hardware stores or automotive departments. They usually contain petroleum distillates, so observe precautions.

White vinegar is safe for use on all fabrics, but may change the color of some dyes. If the dye changes color after use, rinse well with water to remove vinegar and add a few drops of ammonia to the area. Rinse with water. This sometimes restores the original color.

Do not use colored vinegar as it can leave a stain.

Keep all of these materials out of the reach of children!

General Instructions

It is usually best to take non-washable items or large, difficult stains to a professional dry cleaner. Identify fiber content and type of stain if known. If you are going to try to remove the stain yourself, you must *treat it as quickly as possible, and always before laundering*. Remember that fresh stains are easier to remove than old ones, and *washing, drying in a dryer or ironing may make some stains impossible to remove* (especially oily stains in synthetics and blends). Refer to the garment's permanent care label. Follow the manufacturer's recommendations for water temperature, use of bleach, and drying method in spot and stain removal procedures.

Other suggestions:

- *Always* test the stain remover on an inconspicuous part of the garment to check for color change or fabric damage.
- Blot liquid stains immediately with an absorbent material and gently scrape excess staining material from the fabric surface.
- Push the stain *out*, not in. Work from the wrong side of the garment.
- Avoid using hot water on an unknown stain.
- Avoid excessive rubbing. Rubbing may break the fiber, damage the finish, remove the color, or spread the stain. It could also cause yarn slippage on loosely woven fabrics or fabrics made from low-twist yarns.
- Thoroughly rinse out any stain remover before laundering to avoid undesirable chemical reactions. Follow package instructions carefully.
- If dry cleaning solvent is not completely removed with rinsing, allow it to evaporate from the fabric before washing or putting in a dryer.
- Do not use chlorine bleach on fabrics containing silk, wool, spandex, urethane fabrics, polyurethane foam, and some special finishes on fabrics. Check the label for directions.
- Never mix stain removal materials—especially *chlorine bleach and ammonia or vinegar*.
- Do not treat suede, leather or fur. Take to a dry cleaner skilled in leather or fur care.

Realize that some stains are difficult to remove and some are impossible to remove. Be prepared to accept some failures.

Stain Removal Techniques

Always work in a well-ventilated area. Do not leave containers open while using dry-cleaning solvents. Many stain-removing agents (especially dry-cleaning solvents) can be extremely harmful. Protect work surfaces by covering with aluminum foil. Use a heavy glass pie plate or casserole as a stain removal work surface.

For successful stain removal, the correct technique is as important as the correct product. Use the following procedures.

Sponging: Place the stain on an absorbent surface, such as white paper towels, or a clean, white lintless cloth. Be sure to work from the underside of the stain to avoid driving it through the fabric. Rotate the paper towel under the stain with each application of stain remover to avoid redepositing the stain on the fabric.

Sponge the stain with a light, brushing motion working from the center of the stain to the edge. Work carefully and patiently. Avoid circular motions as rings can develop. Brush irregularly around the edge. Change the sponging pad and absorbent material frequently.

Using a spoon: You can use the bowl of a stainless steel spoon to loosen stains on sturdy fabrics, but not on delicate ones. Place the stain directly on the work surface without absorbent material underneath. Add stain remover. Rub the stain with the spoon using short, light strokes to avoid damaging the fabric.

Tamping: For sturdy fabrics, try tamping a stain with the bristles of a soft, clean brush. Work without absorbent material under the stain. Use the brush as if you were driving a tack with a small hammer. Raise the brush 2 or 3 inches, then bring it down squarely on the stain, using a light action. **Never** use so much pressure that the bristles bend. Too much tamping can damage even sturdy fabrics. Do not use on delicate ones.

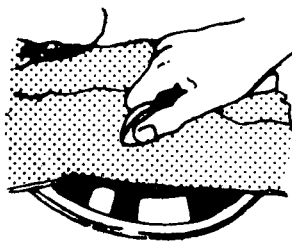


Illustration: using a spoon to loosen a stain

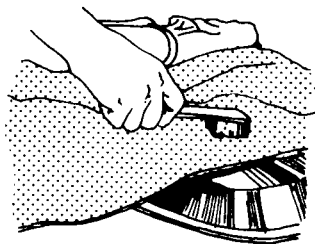


Illustration: tamping a stain with a brush.

Rinsing: It is important to rinse the garment to remove released staining materials and the stain-removing chemicals. After treating the stain, rinse by dipping the stained area up and down repeatedly in a bowl of warm (not hot) water. Change the water at least twice.

Pre-treating: Pre-treat heavy soil and stains by applying liquid detergent or dissolved granular detergent to heavily soiled areas before laundering, or spray with a commercial prewash spot and stain remover. Follow the directions on the container. This often removes stains without further treatment. However, if you're not sure the stain was removed during laundry, air-dry the garment to avoid setting the stains in the heat of a dryer.

Precautions to avoid "rings": Frequently a ring appears around the stained area after attempts to remove a stain. Smooth fabrics that are light and solid in color "ring" most often. Use special care when sponging these types of fabrics. The ring is either a residue from the stain or an accumulation of fabric finishes that moves out as the solvent spreads along the yarns. The important point is to try to prevent the fabric from ringing. Use a stain remover sparingly and move frequently to a new dry spot on the blotter. Try not to let the wet area spread. If a ring appears, brush lightly and rapidly from the center out with irregular strokes around the edges so there will be no definite line when the fabric dries. Before you air-dry the article, place the sponged area between dry absorbent material to remove excess moisture.

General instructions: To remove greasy stains, sponge with a dry cleaning or prewash soil and stain remover. Launder and air-dry. Repeat treatment until the stain is out. To remove non-greasy stains, sponge with cool water. If stain remains, soak in cool water for 30 minutes. Treat with soap or detergent. Launder and air-dry until you're sure the stain is gone. Combination stains, such as gravy, or coffee with cream, contain both greasy and non-greasy substances. Treat the greasy stain first, then treat as a non-greasy stain.

To remove an unidentifiable stain on a washable fabric: Follow these steps, in order, until stain disappears, *checking each cleaning agent first for color change.*

1. Sponge the area with a nonflammable dry cleaning solvent to remove any possible oil content. Air-dry fabric.
2. Apply waterless hand cleaner and gently rub. Let stand and repeat. Rinse well with water.
3. Soak stain in cold water for at least a half hour.
4. Apply liquid detergent solution (1 tablespoon in 1/2 cup water) and a few drops of vinegar. Rinse thoroughly.
5. Apply liquid detergent solution and a few drops of ammonia. Rinse.
6. Sponge with alcohol and pat with a pad of absorbent material dampened with alcohol. Allow to air-dry.
7. Rub detergent (liquid or a paste of granular) into the stained area. Let stand for at least a half hour. Rinse.

8. Soak garment in an enzyme presoak. Check package instructions for length of time.

9. Launder, using bleach if safe for fabric. (Be sure to check garment label.) Air-dry until you are sure the stain is out.

10. As a last resort, try a color remover or rust remover, following package directions. If the garment would be costly to replace, it would be wise to take it to a dry cleaner for professional help rather than try this step.

Important Precautions

The following precautions must be followed when using hazardous cleaning agents such as chlorine bleach, rubbing alcohol, ammonia, amyl acetate, dry cleaning solvent and rust remover:

- Read and observe ALL warnings on the label.
- Do not breathe solvent vapors.
- Work in a well-ventilated area.
- Avoid leaning close to the fabric or container as you work.
- Use a small amount of the cleaning agent at one time, and keep the bottle capped.
- Never mix cleaning agents.

Do not use chlorine bleach:

- IN COMBINATION WITH AMMONIA;
- on fabrics made of silk, wool or spandex fibers;
- on some fabrics with special fire-retardant or crease-resistant finishes (check the label);
- on urethane fabrics or polyurethane foam;
- if the care label says "Do Not Bleach."

When using poisonous cleaning agents:

- If you spill on your skin, wipe with a paper towel and wash skin immediately.
- If you spill on clothing, change clothes at once and hang them outside until the odor is gone.

When using flammable cleaning agents such as amyl acetate and dry cleaning solvent:

- Rinse fabric with water before placing it in the washing machine.
- Be sure to launder the garment before putting it in the dryer.
- Do not work near an open flame such as a pilot light.
- Do not work near electrical equipment such as a refrigerator, fan or vacuum cleaner because of the danger of sparks.
- Do not smoke.

Stain Removal Guide

Always test stain removers for color changes or fabric damage before using. Always rinse well after treatment to remove all of the stain removal product.

- Procedure 1** Sponge or soak stain in cool water. Apply detergent to stain. Launder.
- Procedure 2** Soak in a solution of 1 quart warm water, ½ teaspoon detergent and 1 tablespoon white vinegar for 15 minutes. Rinse with water. If stain remains, sponge with alcohol, rinse thoroughly and launder. Add bleach to laundry (chlorine type if safe for fabric).
- Procedure 3** Soak in a solution of 1 quart warm water, ½ teaspoon detergent and 1 tablespoon white vinegar for 15 minutes. Rinse with water, air-dry. If stain remains, sponge with dry-cleaning solvent and/or waterless hand cleaner. Rinse with water. Launder, using hot water and chlorine bleach, if safe for fabric.
- Procedure 4** Sponge with dry-cleaning solvent and/or waterless hand cleaner. Rinse with water. Air-dry. Apply detergent to stain. Launder.
- Procedure 5** Sponge with dry-cleaning solvent and/or waterless hand cleaner. Rinse with water. Apply detergent to stain. Launder, using hot water and bleach (chlorine type if safe for fabric).
- Procedure 6** Treat dry garment with a prewash spot and stain remover. Launder.
- Procedure 7** Treat dry garment with a prewash spot and stain remover. Launder, using hot water and chlorine bleach, if safe for fabric.
- Procedure 8** Soak in warm water and enzyme presoak for 15 to 30 minutes. Launder.

| Stain | Procedure |
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| Alcoholic beverages | Procedure 2. |
| Asphalt, Tar | Scrape excess from fabric with dull knife. Procedure 5. |
| Ballpoint pen, Felt tip marker or Pattern transfer inks | Sponge with dry cleaning solvent until all bleeding of ink stops. Follow same procedure using alcohol and/or glycerine. If stain remains, apply detergent. Let stand overnight if necessary. Apply prewash spot and stain remover and launder. |
| Blood | Soak in cold water for 15 to 30 minutes. Apply ammonia. Rinse. Procedure 8. Apply detergent to stain and rinse. If stain remains, soak for 15 minutes in an oxygen bleach or hydrogen peroxide solution. Launder. |
| candle wax | Scrape excess wax from fabric with dull knife. Place stain between paper towels and press with a warm iron to remove wax. Procedure 5. |
| Carbon paper | procedure 4 or 6. Air-dry. If stain remains place a few drops of ammonia and detergent on stain and re-launder. |
| Catsup | Remove excess with dull knife. Procedure 5, 7 or 8. |
| Chewing gum | Rub with ice cube to harden. Remove excess. Procedure 4 or 6. |
| Chocolate | procedure 5, 7 or 8. |
| Coffee, Tea | Procedure 2 or 8. For coffee with cream, procedure 3,7 or 8. |
| Cosmetics | procedure 4 or 6. |
| Crayon wax | Remove excess with dull knife. procedure 5 or 7. |
| Crayon (melted on a washer or dryer load of clothes) | Scrape crayon off garment with dull knife. Dry-clean in a coin-operated dry-cleaning machine or take to commercial dry cleaner. If stain remains, use procedure 7. |
| Cream, Milk Ice cream | Procedure 8 or 6. If stain remains, use Procedure 4. |
| Deodorant, Antiperspirant | Procedure 1. Color may be restored by sponging with ammonia (new stains) or vinegar (old stains). |
| Dye transfer from non-colorfast garment | May be impossible to remove. Use commercial color remover on white fabrics or use chlorine bleach if safe for fabric, or oxygen bleach. It may help to soak in enzyme presoak. |

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| Egg | Procedure 8. If stain remains, 4 and 7. |
| Fabric softener | Blue-gray, greasy-looking stains can result from undiluted fabric softener poured directly on clothing or an overuse of softeners in the dryer. To remove, rub stain with a bar of bath soap and launder again. |
| Fingernail polish | Sponge with amyl acetate. Fingernail polish remover may be used except on acetate or triacetate fabrics. Follow with Procedure 1. |
| Fruits, Berries | Rinse stain under cool running water. Use procedure 2. If stain remains, procedure 8. |
| Grass | Sponge with dry-cleaning solvent and/or waterless hand cleaner, then procedure 2. |
| Gravy | Procedure 4, 6 or 8. |
| Grease, Oil, Butter | Procedure 4 or 6. |
| Iodine, Mercurochrome, Merthiolate | Rinse under cold running water. Soak in solution of 1 quart warm water, ½ teaspoon detergent and 1 tablespoon ammonia for 30 minutes. Launder. |
| Mayonnaise, Salad dressing | Procedure 4 or 6. |
| Mildew | Brush off mildew out of doors. Apply detergent to stain and launder. If stain remains, soak for 10-15 minutes in a solution of ¼ cup chlorine bleach in ¾ cup water, if safe for fabric, or bleach with an oxygen-type bleach. An alternative to bleach is to treat with salt and lemon juice and dry in direct sun. Rinse and launder. |
| Mud | Brush off excess <i>after drying</i>. Follow procedure 2 or 8. If a rust-colored stain remains, treat with a rust remover. |
| Mustard | Scrape off excess with dull knife. Sponge with dry cleaning solvent. Sponge with detergent and ammonia. If stain remains, bleach with oxygen bleach. Launder. |
| Paint (oil base) | Remove quickly before paint dries. If unable to treat immediately, wrap in plastic or air-tight wrap to prevent drying. If a particular solvent is recommended as a thinner, treat stain with that solvent. Use procedure 5. |
| Paint (water base) | Remove quickly before paint dries—difficult to remove when dry. Sponge with dry-cleaning solvent <i>or</i> waterless hand cleaner. Use procedure 1. Add chlorine bleach to laundry if safe for fabric. |
| Perfume | Procedure 1 or 2. |

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| Perspiration | Procedure 1 or 8. If odor remains, rub with bar of deodorant soap and launder again. Or, soak overnight in 4 tablespoons salt in a quart of warm water. Rinse and re-launder. Color change <i>maybe</i> restored with ammonia (new stains) or vinegar (old stains). |
| Rust | Use rust remover, following manufacturer's directions. Or, sprinkle salt on the stain, squeeze on lemon juice, and dry in sun. Launder. |
| Shoe polish (wax) | Scrape off excess with dull knife. Procedure 5. If stain remains, sponge with rubbing alcohol. Rinse. Launder. |
| Soft drinks | Procedure 2. Permanent "yellowing" may result if soft drink stains are allowed to remain in the fabric. |
| Soiled collars, cuffs | Procedure 6. Apply detergent to soil and launder. |
| Transfer pattern ink | See ballpoint pen. |
| Urine | Procedure 1. If color change has occurred, sponging with ammonia (new stains) or vinegar (old stains) <i>may</i> restore color. If stain remains, try procedure 8. |
| Wax | See candle or crayon. |
| Wine | Procedure 2. |

Acknowledgment: The stain removal chart was adapted from material preparedly Elinor Young, Extension Textile and Clothing Specialist, University of Maryland. Original bulletin was prepared by Jereldine R. Howe, former Extension Textile and Clothing Specialist, Kansas State University.

Deanna M. Munson
Extension Specialist, Textiles

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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