Stain Removal Guide

for Washable Fabrics

A Pacific Northwest Extension Publication
Idaho = Washington = Oregon

The procedures described in this publication are appropriate for removing stains from washable fabric. Check the care label for recommended laundering procedures, and follow those instructions. If instructions state that the garment is to be washed, you cannot assume that dry-cleaning is also safe.

Six major sections cover the following stains:

Alphabetical Index to Stains

Steps and Tips for Stain Removal

- Blot liquid stains immediately.
- Work from the back. Place stained side of fabric down. Work on absorbent surface such as clean white paper towels. Change towels often to avoid restaining.
- Avoid excessive rubbing, which may damage the fibers or finish, remove the color, or spread the stain.
- Treat stains promptly. Fresh stains are more easily removed.
- Test stain-removal product on seam allowance or hidden part of garment. If color is affected, do not use that product.
- Allow all dry-cleaning solvents to evaporate completely before washing. Rinse out stain remover products before washing. Always use them in a well-ventilated room. Follow manufacturer's instructions when available.
- Do not use colored towels or cloths that may leave a dye stain. Avoid using linty cloths or paper.
- Read garment care label. Take nonwashable items to dry-cleaner. Point out and identify the stain. Take suede, leather, or fur to a specialized fur and leather dry-cleaner.
- Do not use chlorine bleach on silk, wool, or spandex fibers. Do not use on urethane fabrics or polyurethane foam.
- For fabrics made from a fiber blend, use the stain removal method appropriate for the most sensitive fiber.
- Avoid using hot water on stains of unknown origin.
- Line dry during stain removal process. Do not put item in the dryer until the stain is completely removed.
- Do not iron stained fabrics. Heat may set the stain.
- Follow stain removal procedures until the stain is removed. Then launder the item according to label instructions. Do not dry in dryer until you are sure the stain is removed.
- Always launder items after treating to remove residues of the stain and the stain remover.

Stain Removal Products

Products used for stain removal can usually be found in grocery, drug, hardware, general merchandise, or paint stores. Check labels to be sure the chemical content is the one recommended for your stain removal problem. In spite of claims made by some commercial products, there is no such thing as an all-purpose stain remover. The proper stain removal product to use is determined by the type of stain being treated.

Detergent

- **Light duty, liquid:** Delicare, Woolite.
- **Hand dishwashing liquid:** Dove, Ivory, Lux, Palmolive.
- **All purpose, laundry:** Bold, Cheer, Era, Oxydol, Tide, Trend, Wisk, Yes.
- **Soaps** (use in soft water only): Fels Naphtha, Ivory Flakes.

Note: Do not use dishwasher detergents, which may set some stains.

Bleach

- **Hydrogen peroxide.**

Note: Use a 3 percent solution sold as a mild antiseptic. Test fabric for colorfastness. Hydrogen peroxide loses strength when stored for a long time. Rinse fabric thoroughly after using.

- **Powdered, all-fabric** (sodium perborate): Biz, Clorox 2, Purex.
- **Liquid, all-fabric:** Snowy, Vivid.
- **Liquid, chlorine** (sodium hypochlorite): Clorox, Purex.

Note: Liquid chlorine bleach has a limited shelf life. After 6 months, it may need replacing. It also may damage some fibers, dyes, and finishes. Check care label for restrictions. To test for colorfastness, mix 1 tablespoon of bleach with 1/4 cup of water. With an eyedropper, put a drop on a hidden seam. Let stand 2 minutes. If there is a color change, do not use bleach. Do not pour bleach into bowl. Do not breathe fumes.

Do not use chlorine bleach on wool, silk, or spandex fabrics. Do not use on flame-retardant fabric unless care label states that it is safe. Do not use in metal containers or with metal objects.

Pretreatment Products

- **Aerosol sprays:** Shout, Spray'n Wash, Magic PreWash. For use on all stains. Especially effective on grease-based stains. Item should be laundered immediately after treatment.
- **Pump-type liquid:** Shout, Spray'n Wash. May be used on all stains, but less effective on grease-based stains than aerosol products. Item should be laundered immediately after treatment.
- **Sticks:** Magic Wand, Shout, Spray'n Wash. For use on all stains. Washing of treated items may be delayed for several days if necessary.

Odor-reducing Agents

- Activated charcoal
- Calcium carbonate
- Soda

Other Useful Chemicals

Caution: Many of these chemicals are poisonous, flammable, or both. Observe all warnings on the label. Use in well-ventilated area. Do not breathe the vapors. Avoid getting on the skin.

- **Alcohol** (rubbing or denatured; 70 or 90 percent concentration; no perfumes or color added).

Note: Alcohol fades some dyes, so check colorfastness. For use on acetate, dilute with 2 parts water to 1 part alcohol.

- **Ammonia** (ammonium hydroxide): Ajax, Bo Beep, Top Job.

Note: Ammonia changes the color of some dyes. To restore color, rinse with water and apply a few drops of vinegar. Rinse with water again. For use on wool and silk, dilute ammonia with an equal amount of water.

- **Color remover** (sodium hydrosulfite): Rit, Tintex. Usually located in the display of home dyes and tints.

Note: Fades or removes many dyes. Usually used on whites or fabric to be redyed. If a distinct color change occurs (not just fading), the original color may be restored by rinsing the areas with water immediately. Hang the garment to dry. If color fades, original color cannot be restored. Do not use on metal objects or store in metal containers.

- **Dry-cleaning fluid** (perchloroethylene, trichloroethylene petroleum distillates, Varsol): Carbona, Energine, Goddard's.

Note: Extremely toxic. If spilled on skin, wipe off with paper towel and wash skin. If spilled on clothes, change at once and hang clothes outdoors until all solvent odor is gone. Do not use in room with open flame or gas pilot light or where there is a chance of electrical sparks from refrigerators, fans, vacuum cleaners, or static. Do not smoke. Nonflammable solvents give off very poisonous vapors and are especially toxic to persons who have drunk even small amounts of alcohol. Never use in washing machine or dryer.

- **Enzyme presoak products** (amylase, protease, lipase): Axion, Biz Bleach.

Note: These products are bleaches with enzymes in them. They must be used at body temperature for enzyme action to occur. Do not use on silk or wool, since enzymes digest protein. Chlorine bleach and hot water deactivate enzymes. These products lose strength when mixed with water and stored.

- **Nail polish remover** (acetone).

Note: Do not use on acetate, triacetate, or modacrylic fabrics. Will dissolve plastic. Most nail polish removers are the oily type; use dry-cleaning solvent following use.

- **Rust removers** (hydrofluoric acid, oxalic acid): Whizz, RoVer, Whink.

Note: Do not use these products with chlorine or oxygen bleaches (see bleach label).

- **White vinegar** (acetic acid).

Note: If color change occurs, rinse well with water and add a few drips of ammonia to the area. Rinse well with water. Do not use colored vinegar, as it will leave a stain.

SECTION 1

PROTEIN STAINS AND RED INKS AND DYES

Source of Protein Stain

After shave lotion
Antiperspirant[1]
Baby food
Baby formula
Blood[2]
Collar/Cuff soil
Deodorant[1]
Egg white
Eye drops
Feces
Fish slime
Gelatin
Milk
Mouthwash
Mucous
Sherbet
Soups containing meat
Urine
Vomit
White glue, school glue

Source of Red Inks and Dyes

Fabric dye, red
Food coloring, red
Hair dye, red
Ink, red
Stamp pad ink, red
Watercolor paint, red

To Remove Stain

- Scrape off excess material.
- Soak for 15 minutes in a mixture of 1 quart lukewarm water, 1/2 teaspoon liquid hand dishwashing detergent, and 1 tablespoon ammonia. Be sure to use cool to lukewarm water. Heat can permanently set protein: i.e., cooked egg white or milk become insoluable.
- Rub gently from back to loosen stain.
- Soak another 15 minutes in above mixture. Rinse.
- Protein stains: Soak in enzyme product for at least 30 minutes. Soak aged stains for several hours. Launder.
- Red ink and dye stains: Soak in 1 quart warm water and 1 tablespoon white vinegar for 30 minutes.
- If color stain remains, launder using chlorine bleach if safe for fabric or with oxygen bleach (see bleach label).

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[1]Pretreat by rubbing in undiluted liquid hand dishwashing detergent. Launder in hottest water safe for fabric.

[2]Treat blood stains immediately. First run cold water through stain. Then treat as above. For a blood stain that is not completely removed by this process, wet the stain with hydrogen peroxide and a few drops of ammonia. Do not leave in this mixture longer than 15 minutes. Rinse with cool water. If blood stain has dried, pretreat with prewash stain remover, liquid laundry detergent, liquid detergent booster, or paste of granular laundry product and water. Launder using bleach safe for fabric. Old stains may respond to soaking in enzyme product.

SECTION 2

FRUIT, BEVERAGE, AND VARIOUS LIQUID STAINS

Source of Stain

Beverages

Beer
Coffee (no cream)
Fruit juice
Mixed drinks
Soft drinks
Tea
Whiskey
Wine

Fruit and fruit juices

Apples
Bananas
Berries
Peaches
Pears
Jam, Jelly, Preserves

Personal care items

Home permanent
Foundation makeup, water-based
Shaving cream
Suntan cream
Toothpaste

Other

Corn syrup
Cough syrup
Maple syrup
Molasses
Mud
Vinegar (with color)

To Remove Stain

- Soak for 15 minutes in mixture of 1 quart lukewarm water, 1/2 teaspoon liquid hand dishwashing detergent, and 1 tablespoon white vinegar. Rinse.
- Sponge with alcohol, using light motions from center to edge of stain.
- Soak for 30 minutes in 1 quart warm water with 1 tablespoon enzyme presoak product.
- If color stain remains, launder in chlorine bleach if safe for fabric or in oxygen bleach (see bleach label).
- If fruit juice stain, be certain to remove the sugar. For example, apple juice may not show a stain immediately but may turn into a brown stain when the fabric is heated in a drier or ironed. The sugar becomes carmelized when heated and produces a brown stain.

SECTION 3

GREASY, NONFOOD STAINS

Source of Stain

Adhesive tape[1]
Asphalt[1]
Auto wax
Calamine lotion
Castor oil
Chewing gum[1]
Cod liver oil
Correction fluid[2]
Cosmetics (face powder, eyeliner, shadow, etc.)
Crayon[3]
Epoxy glue[4]
Felt tip marker[5]
Floor wax
Furniture polish, wax
Glue (airplane, contact mucilage, plastic)
Grease
Hair spray
Hand lotion
Make-up (oil-based)
Nose drops
Ointment, Salve
Paint, solvent- or water-based
Pine resin
Polish, shoe, furniture
Putty
Rubber cement[1]
Shoe polish and dye[5]
Smoke[6]
Tar[1]
Tree sap[1]
Typewriter ribbon
Wax (floor, car, furniture)

To Remove Stain

- Saturate area with pretreatment laundry stain remover (aerosol types work better on greasy stains). Wait 1 minute for product to penetrate the stain. For stubborn stains, rub with heavy-duty liquid detergent. Launder immediately.
- If color stain remains, launder in chlorine bleach if safe for fabric or in oxygen bleach (see bleach label).
- For extra heavy stains, apply dry-cleaning fluid to back of stain over absorbent paper towels. Let dry; rinse. Proceed as above.

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[1]Rub area with ice and scrape with side of dull knife. Proceed as above.

[2]Correction fluid: Read label on individual products. If no information is given, take garment to professional dry-cleaner with instructions to treat material similar to paint stain.

[3]For a washer or dryer load of crayon-stained clothes, see section 5 — “Special Problem Stains.”

[4]Epoxy glue may be impossible to remove. Dry-cleaning solvent may cause it to swell so that it can be removed by scraping.

[5]See also dye stains listing in section 5 — “Special Problem Stains.”

[6]Severely smoke-stained articles should be professionally dry-cleaned. For smaller stains, flush with dry-cleaning solvent, allow to dry, and launder.

SECTION 4

GREASY FOOD STAINS

Source of Stain

Cake frosting
Catsup
Cheese, cheese sauce
Chili sauce
Chocolate, cocoa
Coffee with cream
Dairy products (cream, cream soups, ice cream, milk, sour cream, yogurt)
Egg yolk
Frosting
Gravy
Lard
Margarine
Mayonnaise
Peanut oil
Pudding
Salad dressing
Soups containing vegetables
Steak sauce
Tomato-based products
Vegetable oil

To Remove Stain

- Saturate area with pretreatment laundry stain remover (aerosol types work better on greasy stains). Wait 1 minute for product to penetrate the stain. For stubborn stains, rub with heavy-duty liquid detergent. Launder immediately.
- If color stain remains, soak/wash in chlorine bleach if safe for fabric or in oxygen bleach (see bleach label).
- For extra heavy stains, apply dry-cleaning fluid to back of stain over absorbent paper towels. Let dry; rinse. Proceed as above.

SECTION 5

SPECIAL PROBLEM STAINS

Dye Stains

Follow each step until stain stops coming out. Then wash garment according to care label instructions. These stains may be impossible to remove. Do not place dye-stained fabrics in a dryer.

Source of Stain

Bluing

Dye transfer (color bleeding in wash)

Fabric dye (except red and yellow)

Felt tip pen (permanent ink may not come out)

Food coloring (except red and yellow)

Hair dye, black or brown

Mustard

Stamp pad ink (except red and yellow)

Note: Today's dyes cannot be made colorfast with salt or vinegar.

To Remove Stain

- Pretreat the stain with heavy-duty liquid detergent. Rinse. Soak fabric in dilute solution of all-fabric powdered bleach. If stain persists and garment is white or colorfast, soak entire garment in dilute solution of liquid chlorine bleach and water. Chlorine bleach may change the color of the garment or cause irreversible damage. Check for bleach tolerance on a hidden seam. If stain does not come out in 15 minutes of bleaching, it cannot be removed by bleaching.
- If bleaching is not safe or does not work, use a commercial color remover according to package directions. Note that color remover will take out the fabric color as well as the stain. Do not exceed 160°F water with any synthetic fabrics. Launder.

Other Problem Stains

Candle wax — Rub with ice and scrape off excess with a dull knife. Place folded paper towels over and under stained area and press with a warm — not hot — dry iron. Using clean towels, repeat until no more wax melts. Sponge with dry-cleaning fluid. Remove color with bleach or color remover as safe for fabric.

Crayon (a whole load of clothes) — Scrape excess crayon with blunt knife. Wash in hot, soft water with soap (such as Ivory) and 1/2 cup baking soda for 10 minutes. If stain remains, work soap paste into stain. Wash 5 minutes. Rinse. To remove remaining color, use bleach or color remover as safe for fabric.

Fabric softener — Rub stained area with bar soap (Ivory) and launder as usual. Repeat if necessary. To prevent stains, dilute softener before using.

Grass — Sponge the stain with alcohol and let dry. Sponge with cool water. Work liquid detergent into the stained area. Rinse with water. Let dry. Soak in mixture of 1 quart warm water and 1 table-spoon enzyme product for 30 minutes. Rinse thoroughly. Launder in hot water with chlorine bleach if fiber content and fabric permit.

Hard water problems (among them dinginess or graying, yellowing, general soil buildup, white or gray streaks on colored fabrics, and stiff harsh feel to fabrics) — Fill the washer with the hottest water appropriate for the fabric. Add four times the normal amount of liquid laundry detergent and 1 cup of nonprecipitating water conditioner such as Calgon or Spring Rain. Agitate just long enough to wet the clothes. Soak overnight or about 12 hours. Drain and spin without agitating. Launder, using regular cycle, no detergent, and 1 cup of

nonprecipitating water conditioner. Repeat laundering with no detergent and 1 cup of nonprecipitating water conditioner until no suds appear during the rinses. To remove all dinginess, launder with nonprecipitating water conditioner and bleach that is safe for the fabric.

To prevent hard water problems, use adequate amounts of heavy duty liquid detergent and water as hot as safe for the fabric. Soften the water with nonprecipitating water conditioner or install a water softening system. Note that water softening systems may increase the amount of sodium in the drinking water and cause problems for people on salt-restricted diets.

Ink (solvent sensitive) — Pretreat with prewash stain remover, denatured alcohol, or dry-cleaning solvent. First apply alcohol or dry-cleaning solvent around the stain. Then apply it directly to the stain from the back over paper towels. Rinse. Launder with bleach safe for fabric.

Ink (permanent) — Treat immediately. Permanent inks are almost impossible to remove. Force water through the stain to remove excess. Let air dry. Sponge with dry-cleaning solvent. When stain is no longer being removed and fabric is dry, apply concentrated detergent. Soak in warm water with 1 to 4 tablespoons ammonia per quart of water. Repeat as needed.

Some inks on white fabric may be removed with a dye stripper. Follow package directions. For stains on colored fabrics, check for dye stability in a hidden area before using.

Insecticides, pesticides — If full-strength liquid concentrate spills on clothes, handle only with rubber gloves. Discard clothing immediately. Laundering does not remove concentrate to a safe level to reuse clothing. Launder other pesticide-contaminated clothing separate from general family laundry. Pre-rinse contaminated clothing by spraying or hosing them over a line outdoors. Alternative pre-rinsing methods are soaking them in a tub or a bucket or using presoak cycle on automatic washer.

Wash clothing in hot water (140°F) with a full water level and a normal 12- to 14-minute wash cycle. Use liquid laundry detergent. Wash only a few items at one time and avoid overcrowding clothes in the washer. Repeat laundering two to three times without drying if there is staining, odor, or color difference. Line dry clothes. Run empty washer through a complete hot water cycle with detergent to reduce pesticide levels in your washing machine before washing family clothes.

Iodine — Sponge stain from back with a solution of 1 teaspoon sodium thiosulfate crystals (available at drugstores and photo supply stores) and 1/2 cup water or treat with commercial stain remover. Flush well with water. Repeat if necessary.

Mildew — Mildew is a fungus that attacks fibers over time, and irreversible damage may have occurred. Sunlight destroys mildew. Prevent mildew by storing in light, airy places.

Brush off mildewed area, preferably outdoors. Work gently so as not to further damage already weakened fibers. Gently rub detergent into stained area. Launder in hot water using chlorine bleach. If stain remains, bleach with hydrogen peroxide. Rinse and launder. Old mildew stains may respond to flushing with dry-cleaning solvent.

Nail polish — Do not use nail polish remover on acetate, triacetate, or modacrylic fabrics as they will dissolve. Send these materials to the dry-cleaner and identify the stain. On other fabrics, apply nail polish remover or acetone to back of stain over absorbent material. Rinse and launder.

Paint, watercolor (except red and yellow) — Rinse in cool water to flush out paint while still wet. Dried paint may be permanent. Try sponging areas with alcohol (dilute with 2 parts water for acrylic and modacrylic fabrics). Launder.

Pencil — Use a soft eraser to remove excess. Be careful not to distort fabric weave. Spray with pretreatment aerosol product. Rub in heavy-duty liquid detergent. Rinse. Launder.

Commercial pencil mark removers are available from some quilt supply stores or mail order suppliers. Dry-cleaning fluid

should not be used on most modern quilting fabric.

Perspiration — Pretreat with enzyme product. If fabric has discolored, treat fresh stains with ammonia, old stains with vinegar.

Rust — Do not use chlorine bleach on rust stains or in water containing large amounts of iron. For a rusty water problem, use a nonprecipitating water softener, such as Calgon or Spring Rain, in both wash and rinse water. For severe problems, install an iron filter in the system.

Small stains may be removed with a few drops of a commercial rust remover or by repeated applications of lemon juice and salt to stain. Do not let dry between applications. Rinse thoroughly and launder with a liquid laundry detergent and oxygen bleach (see bleach label).

If safe for fabric, boil in solution of 4 teaspoons of cream of tartar per pint of water. Rinse thoroughly.

Severe rust staining may be removed with a commercial rust remover, such as RoVer and Whink. Follow package instructions. Never use rust remover containing hydrofluoric acid near or in the washer or porcelain sink. It will damage the porcelain enamel finish.

Scorch — Excess heat on many fibers can cause permanent damage. Scorched areas will be permanently weakened. If fabric is thick and fuzzy, brush to remove charring. Rub liquid detergent into scorched area. Launder. If stain remains, bleach with all-fabric bleach. Melted or glazed areas on synthetic blends cannot be fully restored.

Skunk — Skunk odor results from an oily compound. It can be removed by methods used to remove oily soil. The odor molecule can be destroyed with a weak acid. Wash with liquid laundry detergent containing an anionic surfactant. If the odor lingers, rinse several times with dilute white vinegar or lemon juice.

If the odorous clothing cannot be washed, use dry-cleaning solvent. For articles that cannot be washed or dry cleaned, such as shoes, bury them in fine, dry soil such as kitty litter or sweeping compound for several days. The fine particles of soil will absorb the odor.

An odor removal product called Neutroleum Alpha may be obtained from USDA, Pocatello Supply Depot, 238 E. Dillon, Pocatello, ID 83201. Phone 208-236-6920 for prices and information.

Soot — Soot and smoke odor resulting from a fire is best dealt with by a professional restorer. Do not touch or attempt to clean any household textiles unless you know the proper procedures. Improper cleaning actions will only smear soot into the fabric, making the job more difficult. Some soot can be removed by holding a vacuum cleaner nozzle slightly off the surface of the item to be cleaned. Smoke odor is best removed with a process called ozone treatment. Clothing that can be washed and chlorine-bleached can be laundered with liquid laundry detergent and bleach. Several launderings may be required to completely remove the smoke odor.

Yellowing, dinginess — This condition occurs when insufficient detergent is used, wash water temperature is too low, too much detergent is used and insufficiently rinsed out, synthetics are washed with a light-duty detergent in cold water, or color is transferred from other noncolorfast items in the wash.

Wash with hot water and cool-down rinse on permanent press cycle with a cup of water conditioner instead of detergent. If discoloration persists, repeat or wash with the correct amount of detergent, or all-fabric bleach, or diluted liquid chlorine bleach if safe for fabric. Pretreat entire garment with stain removal product and launder alone or with a very few other items in a full load of water as hot as the fabric can tolerate and 50 percent more detergent.

As a last resort, use color remover on white items only. On silk, wool, or spandex, yellowing may result from fiber alteration. This is not correctable.

SECTION 6

UNKNOWN STAINS

Follow each step until stain is removed. Then wash garment according to care label instructions.

- Soak the stain in cold water for 20 minutes. Work liquid laundry detergent into area and allow to stand for 30 minutes. Rinse. If you suspect that it might be rust, treat with rust remover before using bleach. Launder in the washer using the regular cycle with hot or warm water. Silk and wool should be soaked in warm water and agitated very briefly if at all. Air dry.
- Soak the stain overnight in the enzyme presoak. Launder.
- Sponge stain with dry-cleaning fluid. Let stand for 20 minutes. Rub with detergent. Rinse thoroughly.
- If fabric can be bleached, mix equal parts liquid chlorine bleach and water and apply with an eye dropper. Do not use on wool, silk, spandex, or noncolorfast items. For these fabrics, sprinkle oxygen bleach (see bleach label) on the stain and dip briefly in very hot or boiling water. Launder immediately.

If stain remains after all these steps have been completed, nothing can be done to remove it.

NOTES

NOTES

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