8-1-1989

Dealing with Iron in Laundry Water

Cooperative Extension Service
South Dakota State University

COOPERATIVE EXTENSION SERVICE SDSU

Extension Extra

ExEx 14010
August 1989

COLLEGE OF AGRICULTURE & BIOLOGICAL SCIENCES / SOUTH DAKOTA STATE UNIVERSITY / USDA

DEALING WITH IRON IN LAUNDRY WATER

High concentrations of iron in water create staining problems during laundry. This is a widespread common problem throughout much of South Dakota.

CLASSIFICATION OF IRON

Iron content is expressed in parts per million (ppm). One part per million is a pound of mineral dissolved in a million pounds of water. Staining is not likely a problem until the iron level exceeds 0.3 ppm.

HOW IRON AFFECTS LAUNDRY

As ground water that contains iron is exposed to air, such as when it is pumped into a washing machine, the dissolved, colorless mineral is oxidized to produce a reddish to brownish precipitate.

When fabric is exposed to water containing the colored precipitate, the result may be a general overall yellowing or patchy yellow, brown, or rust colored stains or spots.

Chlorine type bleaches will oxidize dissolved iron and produce colored precipitates, just as the oxygen in air does. Consequently, using this product intensifies any staining problems.

HOW TO AVOID STAIN FORMATION

The risk of stains forming occurs whenever the iron concentration exceeds safe levels. Treating the water to remove the stain producing mineral is the only sure way to avoid discoloration.

WATER TREATMENT ALTERNATIVES TO REMOVE IRON

Type	Use
Mechanical filter	Remove suspended insoluble iron particles
Water softener	For small amounts of dissolved mineral
Oxidizing filter	For higher concentration of dissolved mineral
Chlorination & filtering	For very high amounts of dissolved mineral
Polyphosphate feeder units	Does not actually remove iron but binds it to prevent oxidation. Effective only for cold water, as heat releases the iron.

The type of treatment method to use depends on the degree of mineral concentration, the end use for that water, temperature variances of the water, and the technology available.

Some equipment is more effective when combined with others, such as having the water go through a filter before reaching the water softener. Contact local water treatment equipment dealers for specific product information.

LAUNDRY PRODUCTS AND RUST

Non-precipitating packaged water softeners, often referred to as conditioners, can be used to tie up soluble iron in laundry water. They should be added to the wash water before adding the laundry to keep the rust from depositing on the garments. The conditioner must be used in both wash and rinse water. Use according to package directions.

Oxygen type bleaches should be substituted for chlorine bleaches. They do not react with dissolved iron to form stain causing precipitates. Their bleaching action is milder, so stain removal ability is more limited. But if they are used consistently, they are effective in maintaining overall whiteness of fabrics.

REMOVING RUST STAINS

If rust has discolored a load of white items, wash in a phosphate detergent with 1 cup of oxygen bleach or enzyme presoak. If stains remain, soak clothes in a mixture of one ounce of oxalic acid crystals (available from most pharmacies) and 1 gallon of water for ten to fifteen minutes. Use a plastic bucket or tub. Rinse and launder. Use safety precautions when using oxalic acid, as it is a poison.

There are a number of commercial products on the market to remove rust from washable fabrics. Some can be added to the laundry water along with your regular detergent to deal with overall discoloration. Others are designed more for spot removal and may be corrosive to porcelain enamel coated washing tubs so should not be used in machines. Read and follow directions on package labels closely. If using on colored fabrics, check for color fastness. Some removal products can not be used on white nylon.

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the USDA. Mylo A. Hellickson, Director of CES, SDSU, Brookings.