

UNDERSTANDING DIGESTION (110)

Digestion is a process that uses enzymes to convert insoluble stains to soluble substances. The advantages of using and understanding digestion is that the process removes stains safely by eliminating rubbing and chemical action that can affect the safety of many fabrics. Digestion can be used alone as a stain remover or in combination with other methods thus increasing the range of stain removal. Enzymes associated with stain removal in digestion are proteins that act as a catalyst in a bio chemical reaction. A catalyst affects chemical change but they themselves are not used up and do not appear in the final product. This differs from using acid, alkali or bleach which undergo chemical changes themselves. In general enzymes accelerate reaction by lowering the free energy necessary to initiate the reaction which may be compared to lubricating oil in an engine. Today over 2,000 enzymes have been identified. Each enzyme will react with a different type of staining. The enzymes which are used in household detergents are a mixture of enzymes so they can be used on a wide variety of stains. In general enzymes are used for stains originating from a living body. This includes albumin, protein, milk, eggs, blood, urine, perspiration, animal glue, and some fats. Remember enzymes do not remove stains but converts it to a soluble substance such as sugar that can be removed by simply flushing with water. The classic riddle that I use in my spotting classes that explains enzymes is as follows:

Question-How do they get the liquid center inside the liquid filled chocolate covered cherry candy?

Answer-The cherries are put in a solid mold which contain an enzyme. The cherries are then dipped in chocolate. They are then put into storage for controlled time and heat. The enzymes then convert to solid substance on the cherries to a liquid sugar.

USING ENZYMES FOR STAIN REMOVAL

Preparation:

- (1) Use a plain mild detergent such as Tide. The ingredients on the detergent should read that it contains enzymes.**
- (2) Warm water-100-120oF.**
- (3) Warm wet towel**

PROCEDURE

- (1) Wet area with warm water.**
- (2) Put detergent containing enzyme directly on stain.**
- (3) Cover with a warm wet towel.**
- (4) Wait ½ hour.**
- (5) Re-wash.**

BATH METHOD

Procedure:

- (1) Add warm water to a plastic bucket.**
- (2) Add 2 ounces per gallon of water.**
- (3) On colored fabrics add 1 tablespoon of salt per gallon of water. This is used as a dye setter to prevent bleeding.**
- (4) Soak $\frac{1}{2}$ hour.**
- (5) Re-wash.**