

## Enzymes – Applications

Have you had a meat and cheese sandwich lately? Or maybe an alcoholic beverage or glass of fruit juice? Surely, you have done laundry recently? If so you have you are using a commodity that has been produced by or utilizes enzymes during production. Industrially enzymes are used by manufacturers to improve the quality, taste, texture, appearance and performance of their products. Enzymes are used to produce cheese and other food products. Meats are routinely treated with enzymes to both tenderize and stabilize the product. Enzymes are used to improve the shelf life, the texture and the color of bread. Some alcoholic beverages can be made using enzymes. Fruit juices including wines are treated with enzymes to increase juice yield. Additionally, enzymes can be added to remove potentially carcinogenic pre-cursors that can occasionally be found in fruit juices. Laundry detergent manufacturers are the largest users of industrial enzymes. Lipases (breakdown fats), proteases (breakdown proteins), amylases (breakdown starches) and cellulases (breakdown cellulose) all help laundry detergent and stain sticks digest stains and release dirt more quickly than soap alone.

If those aren't enough enzyme uses to intrigue your interest, here are a few more. Enzymes are used to treat cotton and silk before it can be used to make fabric. One of the differences between toilet paper, newspaper and writing paper is the extent of enzymatic treatment the raw material receives! Many of the over the counter (OTC) screening tests, like pregnancy tests are enzyme based. And finally, at least for this discussion, enzymes are used in other types of cleaning products such as urine removal products and pool and spa/pool products.