

## Stages in wash cycle- Laundry

The basic laundering operation is a physical-chemical process which utilizes four major factors which determine the quality of textiles being laundered. The four factors have become known as the detergent pie.

- Time
- Temperature
- Mechanical Action
- Chemical Action

The objective of these four components is to create the optimum cleaning conditions. Any decrease in one of these variables must be compensated for by an increase in at least one of the three remaining variables to prevent a reduction in wash quality. For example, a decrease in time can be compensated for with an increase in chemical concentration.

**Time** – This is a requirement for each step within the wash formula and is usually based entirely on factors that exist within the individual laundry. For example A “suds bath” or “break” may average eight to ten minutes with a surfactant or solvent type detergent but may require twelve to fifteen minutes when utilizing an enzyme detergent. Other factors that directly affect time include water temperature, water conditions, and water level. Load size and soil classification can also affect time for a formula step.

**Temperature** – The ability to control the temperature of the water being introduced to the washer in any given step during the formula is a crucial element. The proper choice of temperature is driven by the composition of the fabric that is being processed. Temperature selection can also be driven by the step in the formula. For example: Rinses may start off at a higher temperature and end up at a lower temperature. Enzyme-based detergents usually can be less effective at higher temperatures than other types of detergents. When bleaching, temperature directly affects chlorine and oxygen differently. Other factors include linen classification, soil content and soil type.

**Mechanical Action** – This is the pounding action that the washer creates to remove embedded soil. There are several variables that directly affect the efficiency of this process. The most common throughout the industry is

overloading. It also does not allow complete dispersion of the chemicals within the washer. Water levels may also affect mechanical action.

**Chemical Action** – This is the process of adding chemicals into the washer at specific times during the wash formula to assist in removing soil, discolouring stains, sanitizing and disinfecting, softening, and starching goods during each step of the formula. Chemicals are added directly to the wash wheel through different types of dispensing systems. Chemical selection is based on water conditions, goods being processed, and the laundry's individual needs and goals.