WASHING

MANUAL PR-EWASH

Manual Pre-wash
Prior to placing glassware and utensils into the washer, a pre wash function is usually recommended. This is usually configured and performed in the Lab to ensure effectiveness. Instructions can be given to personnel in the Glass Wash area where the prewash can be performed also.

SANITIZING AND DISINFECTION

Sanitizing
Usually Seam Injection or Very Hot Water of 180 degrees or more is required.

Disinfection
Sodium Hypochlorite or similar chemical/bleach. The percent of solution is determined by the Lab personal based on the soil content.

Note: It may be possible to include some or all of the Sanitizing and Disinfection into the equipment Pre-Wash phases.

EFFECTIVE WASHING

Factors Affecting Effective Washing

Affective washing can only be achieved by understanding exactly what it will take to remove the soil, organic and inorganic, from the glassware and utensils used by a particular laboratory.

There are, however, there are some generalities that pertain to most applications.

- Washing equipment
- Utility Requirements
- Washing Parameters
- Accessory Selection

Washing Equipment

The correct washing equipment must be selected in order to pre wash (if necessary) and have the capability to mechanically remove all or the soils involved in the research or manufacturing process. The volume of glassware and utensils must also be considered in order to select the size and capacity of the washing equipment.
Utilities

Effective washing can not take place unless the utility requirements of the washing equipment are not met.

- Electrical Power
- Water Temperature and Pressure
- Steam Pressure (if required)
- Piping Sizing
- Drain and Venting.

Typically, there are minimum requirements as well as variations from optimum utility values. Panels and gauges can assure the operator that the utility requirements are available and maintained throughout the Wash Cycle.

Efficiency Parameters

The following factors play a major role in achieving effective washing.

- Soil Type and quantity
- Water Temperature
- Detergent Selection
- Wash Time
- Mechanical Action
- Water Hardness
- Water Coverage

Soil Types and Quantity

Protein, as an example, requires a cold water pre-wash.

Oils and Grease will require warm or hot water.

Soil conditions are classified as Light, Medium or Heavy.

Temperature and Detergents

Detergents must operate in a compatible temperature range and at manufacturer recommended concentrations.

Detergents must be non-foaming and low-chloride content for proper equipment operation, draining and to protect stainless steel from corrosion.
Optimum temperatures for effective washing range from 160 to 170 degrees. 140 being a minimum and 180 max.

Wash Time
How long oils will take to dissolve.
How long detergent will need to act on soil. (Water Hardness will affect the time required for detergent efficiency.)

In general, the lower the temperature used the longer the wash time.

Mechanical Action
Degree of turbulence and water pressure at the pumps and spray nozzles is a consideration in the manufacturing and selection of washing equipment...

PH
Organic soils require alkaline detergents

Inorganic Soils require Acid detergents