

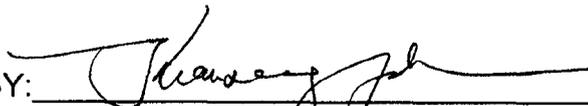
STANDARD OPERATING PROCEDURE
Instructions for Operating an Industrial Dishwasher

KEY WORDS-

Temperature; cleaning; pre-wash; wash; methanol rinse

APPROVALS

APPROVED BY:

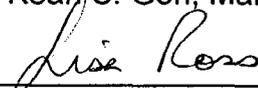


Kean S. Goh, Management

DATE:

9/7/99

APPROVED BY:



Lisa Ross, EHAP Senior Scientist

DATE:

8/30/99

APPROVED BY:

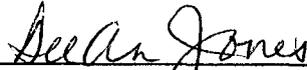


Carissa Ganapathy, EHAP Quality Assurance Officer

DATE:

8/27/99

PREPARED BY:



DeeAn Jones, Environmental Research Scientist

DATE:

7/28/99

Environmental Hazards Assessment Program (EHAP) organization and personnel such as management, senior scientist, quality assurance officer, project leader, etc. are defined and discussed in SOP ADMN002.

STANDARD OPERATING PROCEDURE

Instructions for Operating an Industrial Dishwasher

1.0 INTRODUCTION

1.1 Purpose

To ensure effective cleaning of glassware or stainless steel sampling equipment using an automatic industrial dishwasher. Proper cleaning will help prevent cross-contamination of sampling containers re-used in field and laboratory studies.

1.2 Scope

This document will provide specific instructions for operation of the industrial dishwasher to clean glassware and stainless steel sampling equipment used in the field. It is important to clean the glassware and equipment after each use.

2.0 MATERIALS

2.1 Industrial Glassware Dishwasher- NAPCO® model NLW-200

2.2 Glassware basket

2.3 Dishwasher soap- Sparkleen 2

2.4 Dirty glassware or stainless steel equipment- ISCO® bottles, steel soil cores, etc.

2.5 Alcohol- methanol or isopropanol

2.6 Alcohol waste bottle

2.7 Funnel

2.8 Latex gloves

2.9 Appropriate storage boxes

3.0 PROCEDURES

If the items to be washed were used to collect water with a high percentage of sediment and particulate matter or were used in soil, it may be helpful to pre-soak the equipment in a tub of warm soapy water to loosen the dirt. Some pieces may also require scrubbing with a bottle brush.

3.1 AUTOMATIC DISHWASHER OPERATION

The automatic timed cycle contains a pre-wash, wash, rinse and final rinse. Pre-wash, wash, and rinse cycle times are 0-15 minutes in one-minute increments. The final rinse cycle time is 0-990 seconds in 10-second increments. Opening the door

STANDARD OPERATING PROCEDURE Instructions for Operating an Industrial Dishwasher

during automatic operation will stop the machine. Once closed, the machine will continue from the point of interruption.

3.1.1 Turn the power switch on.

3.1.2 To remove any water from prior wash cycles, pull the drain plug out. If you hear water draining, let it empty then push the plug back in. If you hear nothing, push the plug back in.

3.1.3 There is the choice of hot or cold pre-wash. Select HOT, by pressing the HOT/COLD PREWASH SELECT key.

3.1.4 Set the desired wash temperature. Use the ▲ and ▼ arrows on the SET TEMP key and adjust to between 70-75°C.

3.1.5 Select Automatic operation by pressing the AUTO/MANUAL SELECT key.

3.1.6 Add the detergent through the opening on the bottom of the washing chamber (round hole with cover). Add approximately 5 TBSP of detergent and recover the opening.

3.1.7 Place the appropriate basket onto the basket rack, and add the dirty items.

3.1.8 Close the dishwasher door. As soon as the door is closed, the unit fills with water.

3.1.9 Set the desired time for each cycle (pre-wash, wash, rinse, and final rinse). These times are set by pressing the arrow key (▲). These times should be set as follows:

<u>CYCLE</u>	<u>SETTING</u>	<u>TIME</u>
pre-wash	2	2 minutes
wash	10	10 minutes
rinse	7	7 minutes
final DI rinse	9	90 seconds

3.1.10 Make sure that the jug on top of the washer is full of DI water for the final rinse. If it is not, turn on the DI power and open the red valve (twist left) on the front of the

STANDARD OPERATING PROCEDURE

Instructions for Operating an Industrial Dishwasher

jug, so that the DI water will fill the jug. Close the red valve when the jug is full. Also make sure the blue valve on the back of the jug is open (turned down) so that the DI water is available for the final rinse.

3.1.11 Start the automatic cleaning cycles by pressing the AUTO CYCLE START key. The wash cycle will not be activated until the wash temperature is \geq the wash temperature set point.

3.1.12 Once all cycles have finished, open the door and remove the items. If they do not look clean, leave them in and repeat steps 3.1.2, 3.1.6, 3.1.8, and 3.1.11.

3.2 METHANOL OR ISOPROPANOL RINSING

All of the items that were washed should be finished by rinsing manually with methanol or isopropanol. If the equipment will be used to collect samples that will be used for biotoxicity testing, it is best not to do the alcohol rinse. However, if the alcohol rinse is necessary, the equipment must be triple rinsed with deionized water to eliminate all residual alcohol and allowed to dry before use in collecting biotoxicity samples.

3.2.1 Pour alcohol into a squirt bottle.

3.2.2 Set up a alcohol waste bottle with a funnel to collect excess alcohol.

3.2.3 Wearing latex gloves and holding the equipment above the funnel and waste container, squirt each piece inside and out with the alcohol. This step should be performed under a fume hood. Place equipment upside down to dry. If required, rinse three times with DI water.

3.2.4 Store alcohol waste container in the flammable chemicals cabinet.

3.2.5 Once dry, place a piece of aluminum foil over the opening of glassware and store in its proper place. Steel equipment should be placed in plastic bags and stored in an archive box or appropriate place in the warehouse laboratory or other facility.

3.2.6 If using an archive box to store clean equipment, label the archive box as "CLEAN", along with the date it was cleaned and initial. Also indicate on the box the type of equipment and a study number, if appropriate.