

# 4905 Maintenance

## Introduction

If abnormal readings occur, this may indicate poor response because the cell is not filled with process solution. Check the cell installation. Note that a grayish dull surface on the cell plastic (normally glassy) can result from exposure to temperatures above 140°C.

The only maintenance which may be required is occasional cleaning in certain applications. The low-constant electrodes are not platinized. Note that a series of below-normal conductivity readings could indicate a lack of response because the cell is not filled with solution. Cell constants 0.01, 0.1, and 1 cannot be used if solution resistance measures less than 1000 ohms unless the cell is platinized in accordance with Section 5.

## To Clean The Cell

The cell will require cleaning if sludge, slime, etc., accumulates in the flow channels. Since the materials of construction are chemically inert, chemical agents may be used and are recommended for cleaning the cells. The particular cleaning agent used must be selected according to the type of contamination to which the cell is exposed. CAUTION: The cell housing is PES (Polyethersulfone). DO NOT clean with acetone, chloroform, toluene, benzene, or any other chlorinated hydrocarbon. In general, soap and hot water are effective and adequate. If necessary, a soft bristle brush of about 1/4" diameter may be used to clean out the tubular channels of the 10, 25, and 50 constant cells. These cells should be replatinized after cleaning. Do not scratch the electrode surfaces. Be especially careful not to bend the electrode plates of the 0.1 constant cell. Rinse the cell thoroughly in tap water and then in distilled water if available.

# 4973 Maintenance

## Overview

The only maintenance that may be required is occasional cleaning. When cleaning, avoid scratching electrode surfaces. Do not use a brush or pipe cleaner.

## To Clean The Cell

The cell will require cleaning if sludge, slime, etc., accumulate in the flow channels. Since the materials of construction are chemically inert, chemical agents may be used and are recommended for cleaning the cells. The particular cleaning agent used must be selected according to the type of contamination to which the cell is exposed.

In general, a “quick” rinse in a 10% inorganic acid is effective and often adequate. Another method is to use a strong stream of water to dislodge particles; then reverse flush. After cleaning, rinse the cell thoroughly in tap water and then distilled water, if available. Take care not to scratch electrode surfaces.

The cell housing is made of a polyethersulfone, PES, and must not be cleaned with acetone, chloroform, toluene, benzene, or other chlorinated hydrocarbons.

## To Check Conductivity System

To check the conductivity system comprising the conductivity cell, leadwire, and measuring instrument, the user may desire to make a measurement in a reference solution of known conductivity or use a second cell having the same constant and temperature compensation, and compare the reading of one against the other. Be sure the cells are not touching the bottoms or sides of the beaker for this test.

## Troubleshooting

A series of below-normal conductivity readings could indicate a lack of response because the cell is not filled with solution.

The cell has been exposed to temperatures above 140°C if the normally glassy plastic surface below the thread has a grayish, dull appearance. Check your solution temperature and replace the cell.

## Air Entrapped in Cell Flow Channel

If measurement errors appear for horizontal mountings of a 1 or 10 constant cell, it may be that air is entrapped in the cell flow channel. Take one of the following actions to eliminate this problem:

- Increase flow to at least 1 gpm.
- Rotate the chamber or fitting so that its flow exit and the cell flow channel are down.
- Rotate the cell slightly so that its flow channel is not straight down unless chamber or fitting exit is down.
- Install the cell and/or flow chamber vertically.