## PROCEDURE

### FREE AVAILABLE CHLORINE

1. Fill three test tubes (0822) to the 10 mL line with sample water. Two of these tubes will be used as blank tubes and should be placed in the axial reader per the enclosed instruction manual.
2. Use the 0.05 g spoon (0696) to add 0.05g of DPD #1 Powder (6807) to the sample in the third tube. Cap tube and gently mix to dissolve the powder. A pink color indicates Chlorine. Remove cap.
3. Place the sample tube in the axial reader and the distilled water ampoule in the comparator. Compare the sample color with the standards following the axial reader manual. Read the test result in ppm Free Available Chlorine. Save the sample to determine Total Residual Chlorine.

### TOTAL RESIDUAL AND COMBINED CHLORINE

4. Add 5 drops of Potassium Iodide 20% Solution (6521) to the sample test tube from step 3, cap tube and mix. Remove cap.
5. Insert the tube in the axial reader again and compare the color with the standards. Read the test result in ppm Total Residual Chlorine.

**Combined Chlorine, ppm (Chloramines) =**
**Total Residual Chlorine − Free Available Chlorine**

# LOW RANGE CHLORINE

## MODEL LP-39-GEM • CODE 3140-GEM

| QUANTITY | CONTENTS | CODE |
|---|---|---|
| Not Included | DPD #1 Powder | 6807 |
| Not Included | Potassium Iodide 20% Solution | 6521 |
| 4 | Test tubes, 10 mL, w/cap | 0822 |
| 1 | Spoon, 0.05g | 0696 |
| 1 | Chlorine DPD Comparator, 0.02-0.3 ppm | 6763 |
| 1 | Axial Reader | 2071 |
| 1 | Distilled Water Ampoule | 2748 |

To order individual reagents or test kit components, use the specified code number.

This kit is used to test water for Free Available Chlorine, Total Residual Chlorine, and Combined Chlorine including Monochloramine, Dichloramine, and Nitrogen Trichloride.

#### 4.2.1 Water Bacteriology

Product water used to prepare dialysate, concentrates from powder at a dialysis facility, or to reprocess dialyzers for multiple use, should contain a total viable microbial count less than 200 CFU/ml and an endotoxin concentration less than 2 EU/ml. The action level for the total viable microbial count in the product water shall be 50 CFU/ml and the action level for the endotoxin concentration shall be 1 EU/ml. If these action levels are observed in the product water, corrective measures, such as disinfection and retesting, shall be taken promptly to reduce the levels into an acceptable range.

The manufacturer or supplier of a complete water treatment and distribution system shall demonstrate that the complete water treatment, storage, and distribution system is capable of meeting the requirements of this standard, including those related to action levels, at the time of installation.

Following installation of a water treatment, storage and distribution system, the user is responsible for continued monitoring of the water bacteriology of the system, and for complying with the requirements of this standard, including those requirements related to action levels.

#### 4.2.2 Maximum Level of Chemical Contaminants

Product water used to prepare dialysate, concentrates from powder at a dialysis facility, or to reprocess dialyzers for multiple use, shall not contain chemical contaminants at concentrations in excess of those in Table 1. The manufacturer or supplier of a complete water treatment system shall recommend a system capable of meeting the requirements of this section given the analysis of the feed water. The system design should reflect possible seasonal variations in feed water quality. The manufacturer or supplier of a complete water treatment and distribution system shall demonstrate that the complete water treatment, storage, and distribution system is capable of meeting the requirements of this standard at the time of installation.

Following installation of a water treatment, storage and distribution system, the user is responsible for continued monitoring of the levels of chemical contaminants in the water, and for complying with the requirements of this standard.

**Table 1: Maximum allowable chemical contaminant levels in water used to prepare dialysate and concentrates from powder at a dialysis facility and to reprocess dialyzers for multiple use**

| Contaminant | Maximum Concentration (mg/L) |
|---|---|
| Calcium | 2 (0.1 mEq/L) |
| Magnesium | 4 (0.3 mEq/L) |
| Potassium | 8 (0.2 mEq/L) |
| Sodium | 70 (3.0 mEq/L) |
| Antimony | 0.006 |
| Arsenic | 0.005 |
| Barium | 0.10 |
| Beryllium | 0.0004 |
| Cadmium | 0.001 |
| Chromium | 0.014 |
| Cyanide | 0.02 |
| Lead | 0.005 |
| Mercury | 0.0002 |
| Selenium | 0.09 |
| Silver | 0.005 |
| Aluminum | 0.01 |
| Chloramines | 0.10 |
| Free Chlorine | 0.50 |
| Copper | 0.10 |
| Fluoride | 0.20 |
| Nitrate (as N) | 2.0 |
| Sulfate | 100 |
| Thallium | 0.002 |