**Section 465.340 Laboratory Glassware, Plastic Ware and Metal Utensils**

a) Except for disposable plastic ware, items shall be resistant to effects of corrosion, high temperature, and vigorous cleaning operations. Metal utensils made of stainless steel are preferred. Plastic items shall be of inert, non-toxic material and shall retain accurate graduations or calibration marks after repeated autoclaving. Glassware that is used for purposes that may subject it to damage from heat or chemicals shall be of borosilicate glass. All glassware shall be free of chips, cracks, or excessive etching.

b) Graduated cylinders for measurement of sample volumes and precalibrated sample containers shall have a tolerance of 2.5% or less.

c) Media-preparation utensils shall be of borosilicate glass or stainless steel, and shall be clean and free from foreign residues or dried medium.

d) Micropipettors (also referred to as Mechanical Pipettors or Pipettors) shall meet the specifications set forth in "Standard Methods for the Examination of Water and Wastewater." Pipets delivering volumes of 10 mL or less shall be accurate to within a 2.5% tolerance. Micropipettors shall be fixed volume and calibrated. Micropipettors shall be used with tips that are sterile. Containers for glass pipets shall be of either stainless steel or aluminum. Opened packages of sterile disposable pipets shall be securely resealed between uses. A pipet aid shall be used when using pipets; mouth pipetting is prohibited. The pipet shall be clean and dry. Pipet aids used to pipet outside of the certified water microbiology testing laboratory shall not be used.

e) Culture dishes shall be sterile and shall be of the tight-lid or loose-lid plastic or loose-lid glass type. In addition, culture dishes shall be of 100 mm x 15 mm (for Plate Count), 50mm x 12 mm, 60 mm x 15 mm, or other appropriate size (for membrane filter methods), and shall be clear, flat bottomed, and free from bubbles and scratches. To maintain sterility, containers for glass culture dishes shall be of aluminum or stainless steel, or glass culture dishes shall be wrapped in heavy aluminum foil or char-resistant paper. Open packages of sterile disposable culture dishes shall be securely resealed between uses. Loose-lid dishes shall be incubated in a tight-fitting container, e.g., a plastic vegetable crisper containing a moistened paper towel, to prevent dehydration of membrane filter and medium.

f) Culture tubes shall be of borosilicate glass or other corrosion-resistant glass, and shall be of sufficient size to contain culture medium, as well as the sample portions employed, without being more than three-fourths full. Culture tube closures shall be loose-fitting stainless steel, or plastic caps, or aluminum caps, or plastic screw caps with non-toxic liners. Cotton plugs and foam plugs shall not be used.

g) Dilution bottles shall be of borosilicate glass or other corrosion-resistant glass or autoclavable plastic and shall be free of chips and cracks at the lip. A graduation level shall be distinctly marked on the side of dilution bottles at 99 mL. Dilution bottle closures shall be plastic screw caps with leak-proof liners and shall not produce toxic substances during the sterilization process.

h) Sample bottles shall be sterile, of plastic or hard glass, and wide mouthed, and shall have a capacity of at least 120 mL (4 oz.) to allow at least a 1-inch head space. Reusable sample bottle closures shall be glass stoppers or screw caps (metal or plastic), capable of withstanding repeated sterilization, with leak-proof liners, and shall not produce toxic substances during the sterilization process. Glass-stoppered bottle closures shall be covered with aluminum foil or char‑resistant paper for sterilization. Metal caps with exposed bare metal on the inside shall not be used. Presterilized containers including bags, with or without a dechlorinating reagent, may be used.

(Source: Amended at 46 Ill. Reg. 19150, effective November 17, 2022)