

CHEMICAL PRESERVATION INFORMATION

C & G Container's Pre-Clean Division offers a variety of chemical liquid solutions and dry chemicals for the pre-preservation of containers. In addition, C & G provides small bulk quantities of chemicals solution for our client's uses.

C & G Containers acquires chemicals through major suppliers that have quality programs with the assurance of receiving the high graded assay of chemical for the applicable requirements. Chemicals used are received with tested assay certificates for each product and are purchased in single lot controlled sizes for continuous consistency. Prior to use at C & G, chemicals are analytically tested by one of C & G's "Third Party" validation Laboratories for potential contamination from the manufacturer's processes. The same Environmental Protect Agency (EPA) Methods are used for validating our containers are also used in testing C & G's preservation chemicals. The chemical must meet the required acceptance criteria of Reporting limits as listed on C & G's "Certificate of Analysis" forms. Should any chemical fail to meet C & G's performance based criteria, the chemical is not used and is returned.

Other Custom chemicals may be ordered that are not listed below:

C & G's Preservative Chemicals and Grade of Chemical	Commonly Used Container	Common Analyte Parameters
Ammonium Chloride (ACS)	60 mL vial	Haloacetic Acids (HAA5)
Ascorbic Acid (ACS)	40 mL vial, Plastics as a 16 oz to a 32oz, Removes Chlorine from media sample	VOCs, Cyanide, Sulfide
Chloroacetic Acid Buffer (ACS)	60 mL vial	Special – Carbamate Pesticides
Potassium Acetate (ACS)	40 mL Vial	5035A Method VOCs
De-ionized Water	40 mL Vial	5035A Method VOCs
Hydrochloric Acid (Trace Metal) and (Optima grades)	40 mL vial, 16 oz and 32 oz WM, Quart Jar, Packer, BR	VOCs, TPH, Oil & Grease, TOC
Maleic Acid (ACS)	40 mL vial	524 VOCs
Methanol (Purge & Trap Grade)	4 oz SS with septa cap 40 mL Vial	5035A Method - VOCs
Nitric Acid – < 20% or 1:1 - 33.5 – 35% (Trace Metal Grade)	4, 8 16, 32 oz plastics (Small or Wide Mouth)	Metals and Mercury, Explosives, Hardness, T-Radium, Radiological as (Gross Alpha & Beta)
Phosphoric Acid (ACS)	40 mL vial	Total Organic Carbon (TOC)
Sodium Azide (Lab Grade)	40 mL vial	VOCs
Sodium Bisulfate (ACS,AR)	40 mL vial	5035A - VOCs
Sodium Hydroxide – 6N, 10N, 50% Liquids (ACS), Pellets (ACS)	8, 16, 32 oz plastics (Small or Wide Mouth)	Sulfide, Cyanide
Sodium Phosphate Tribasic - TSP (ACS)	40 mL vial	VOCs, 5035A Method - VOCs
Sodium Sulfite (ACS)	40 mL vials, 125 mL BR – Glass, liter amber bottles	Pesticides/Herbicides
Sodium Thiosulfate (ACS)	Any glass container to remove Chlorine from media sample	VOCs, BNA's, (PAHs), Dioxins/Furans, Herbicides – Many Others
Sulfuric Acid (Trace Metals Grade)	40 mL vial up to 32 oz glass of all types Ammonia, TKN, Phosphorus - HDPE	TOC, O & G, TPH, Phenolics – (Glass) Phosphate, Ammonia, TKN – (Plastic)
Zinc Acetate (ACS)	8 16, 32 oz plastics (Small or Wide Mouth)	Sulfide
No Chemical Preservative	Plastics of all sizes	Solids, Chlorides, Sulfates, BOD5, CBOD, Alkalinity, Hardness, Ortho-Phosphates

Notes:

1. Chemical concentrations are per the Manufacturer's Assay and diluted to the applicable concentrations and dosed to the volume for the container and or Analytical Method. Chemical inoculations should not exceed 10% of the volume of the container's capacity
2. Solid (Powder/Crystal) chemicals are weighed on analytical balances to +/- 0.01 grams (C & G balances are verified every day prior to inoculations and are verified by a "Third Party" on a bi-yearly basis)
3. Liquid media chemicals are dispensed by volume from 0.1 mLs to 20 mLs or more (Dispensers/Pipettors are verified each day prior to use and after 100 inoculations or less per its intended use)
4. Each applicable chemical is tested by "Third Party" analytical Laboratories holding a current and valid NELAP¹ certification for the analytes that correspond to EPA Methods and Standard Methods for the Examination of Water and Waste water Method(s)
5. C & G provides a one (1) year time buffer from the Manufacturer's expiration date of the chemical that is contained in the container
6. Each lot of chemical is traceable to the Certificate of Analysis form that is included in all pre-cleaned Level one (1) containers

¹ National Environmental Laboratory Accreditation Program