



Contrad® 70 is an emulsion of anionic and nonionic surfactants in an alkaline aqueous base. It removes virtually any contaminant from every surface – even silicones, dried proteins, carbon, most resins, waxes, and oils.

Contrad® 70 works by soaking, scrubbing, or in ultrasonic cleaning baths.

Contrad® 70 is totally rinsable eliminating detergent build-up that interferes with analysis, tissue culture, and other critical procedures.

Contrad® 70 is extremely effective when used as an ambient soak solution – no need to scrub! Its activity can be accelerated by heating, agitation, and ultrasonics, or by increasing concentrations.

Contrad® 70 is phosphate-free, chlorine-free, and biodegradable. Used solutions may be disposed straight to drain providing they have not been used to remove contaminants that are in themselves pollutants.

TYPICAL APPLICATIONS: Evaluate Contrad® 70 on every problematic cleaning application!

Soak all labware – glass, plastics, ceramics, and most metals. Solutions are alkaline, so avoid non-ferrous metals, such as aluminum, zinc, and copper.

SUPERB ULTRASONIC CLEANER

- Pipet soaking
- Cuvets
- Culture bottles
- Flashpoint test sample cups
- Production mixers, fillers, storage containers
- Radioactive decontamination
- Sample Vials for HPLC
- Pharmaceuticals and Biotechnology plant/equipment
- BOD bottles in waste-water labs
- Label remover-soak sample bottles
- Machined parts and components
- Stills, pilot plant, reactor vessel, fermenters
- Replaces chromic acid, solvents, caustics
- Silicones and Hydrocarbons
- Small and awkward flasks - no scrubbing
- Surface prep before coating operations

Packaging

Size	Case QTY	Decon #
1 Liter (34oz.)	12	1002
5 Liter (1.32G)	4	1003
20 Liter (5.28G)	-	1004
210 Liter (55G)	-	1005

PRECAUTIONARY STATEMENT:
See **Contrad® 70** SDS.

WORKING SOLUTIONS:

Make up your **Contrad® 70** working solutions in deionized or distilled water for best results. Hard tap water will precipitate hardness salts.

SOAK 2-12 HOURS,
LONGER FOR STUBBORN
CONTAMINATION. RINSE
WHILE STILL WET IN
DEIONIZED OR DISTILLED
WATER.

Dilutions

Ratio	Use
2 - 5%	<i>Most routine labware soaking pippettes, cuvetts, flasks, etc.</i>
5 - 10%	<i>Tissue culture plates, pilot plant, radioactive de- contamination, ultrasonic tank use, fermenters</i>
10 - 20%	<i>Carbonized materials, grease and oils, high levels of radioactivity, "stubborn" contaminants</i>
20%+	<i>Silicone greases, polymers, distillation residues, "impossible" contaminants</i>

RINSABILITY: **Contrad® 70** is totally rinsable – however, numerous factors affect rinsability. These factors include temperature, and volume of water, nature of surface, shape and size of the vessel.

THE RINSE PROCEDURE IS AS IMPORTANT AS THE WASH PROCEDURE IN ALL LAB TECHNIQUES!

CAP CERTIFICATION: **Contrad® 70** is a complex cleaning agent that contains non-ionic detergents. Any rinsability test applicable to a non-ionic detergent will be effective in checking for the correct and total rinsing of an article that has been cleaned in **Contrad® 70** solutions.

Chemetrics Labs offer a detergent residue test kit, Route 28, Calverton, VA 22016. (800) 356-3072. Catalog #K-9400. The phosphate-free nature of **Contrad® 70**, its inherent rinsability characteristics and broad-spectrum cleaning capability are advantages that make it suitable for all critical laboratory cleaning applications. We therefore consider **Contrad® 70** cleaning agent ideal for use in any laboratory subject to CAP Certification.

pH: The rinse water or water lying on the surface of a rinsed vessel can be checked for pH. Assume deionized water with a pH of 6 is used for rinsing. A similar pH reading on the surface residual water will indicate that all detergent has been rinsed away. Since **Contrad® 70** is alkaline, a higher pH may indicate residual detergent – continue to rinse.

CONDUCTIVITY: The presence of any detergents in rinse water will increase its conductivity. Monitor the deionized water before rinsing and after. When the conductivity readings coincide, total rinsability has been achieved.

TOTAL ORGANIC CARBON: TOC in **Contrad® 70** concentrate is 3.36 % by weight. A TOC analysis may be used to determine rinsed state of a surface cleaned in **Contrad® 70**.

SHELF LIFE: Due to the stability of the product there is no expiration date. If an expiration date is needed, two years after the manufacturing date is recommended, however using the product beyond the suggested two year span should not affect its efficacy. The manufacturing date can be found on the lot specific certificate of analysis. Store at 5°C to 25°C. Do not freeze.

Diluted solutions in open cleaning tanks are affected by various conditions, such as the soiling removed from labware, dust, biological contamination, and CO2 absorption. Replace cleaning solution after pH drops below 9, or there is a visible deterioration in cleaning ability. Specific experience may alter this, for instance, the presence of media and cultures, the washing acidic contaminants, and oil and grease removal, will make for a shorter usable life.

To ensure high activity levels and total rinsability, mix fresh solutions frequently!



APPLICATIONS

RADIOACTIVE DECONTAMINANT

atomic weapons research and production, and on nuclear submarines. A 10% solution of **Contrad® 70** in deionized water used as a static or ultrasonically agitated soak is the most commonly employed method of decontamination. Static soaking should be overnight. Ultrasonic soaking would normally effect a similar result in a matter of minutes. Increase concentration of **Contrad® 70** for higher levels of contamination, or heat cleaning solution where appropriate.

Contrad® 70 can be used to decontaminate glassware, plastics, stainless steel, ceramics, and composite materials. Non-ferrous metals should be avoided as the alkalinity of **Contrad® 70** will corrode the surface.

We particularly recommend **Contrad® 70** for decontaminating items that are inherently difficult to clean - syringes, large flasks, Tygon tubing, etc.

Soaking in **Contrad® 70** should be followed by immediate rinsing in either six successive baths of deionized water or in running deionized water stream.

The contaminate solution of **Contrad® 70** should be disposed according to all local and Federal regulations pertaining to the handling of radioactive waste.

XYLENE SUBSTITUTE

In many labs, notably Histology, Xylene is extensively used for basic cleaning procedures - dissolving waxes in particular. Xylene is unpleasant to use, volatile, flammable, and a suspected carcinogen. Effective replacements are therefore actively sought.

In many instances, **Contrad® 70**, a water-based surfactant, will effectively replace Xylene with zero odor, no flammability problem, disposability straight-to-drain, and a substantial cost saving.

For wax removal, prepare a 20% solution of **Contrad® 70** in hot water and immerse the objects to be cleaned. Soak for 1 hour or longer for best results. Increase concentration for heavy wax buildup, or soak overnight.

Remove the **Contrad® 70** solution and rinse, while still wet, in hot running water.

STAINLESS STEEL

Contrad® 70 is widely employed in the cleaning of stainless steel. It is an extremely efficient cleaner capable of removing a wide range of contaminants, from proteins to greases. **Contrad® 70** contains no chlorine or any other agent likely to cause stress cracking of stainless steel pressure vessels.

Caution: There are many grades of stainless steel and few of them are stainless! **Contrad® 70** is a total degreaser and will leave low grades of stainless steel open to oxidation.

For general metals cleaning we recommend a 5% solution of **Contrad® 70** in deionized water. Increase concentration, heat the solution, or use ultrasonic agitation in case of extremely difficult contaminants.

CHROMIC ACID REPLACEMENT

Contrad® 70 is an ideal replacement for chromic acid and similar highly corrosive, hazardous, and pollutant materials used for cleaning pipettes and other routine lab glassware. Disposability of acids is

a major problem. **Contrad® 70** solutions that have not been contaminated by toxins may be disposed straight to drain with adequate dilution. **Contrad® 70** is a biodegradable material that will have no adverse effect on waste flow.

PLANT CLEANING

IN BIOTECHNOLOGY, **Contrad® 70** has proven to be an ideal fermentor cleaner and in **PHARMACEUTICALS** it is used in numerous industrial-scale applications such as penicillin manufacture, tablet die cleaning, filling machines, etc. **Contrad 70** is USDA approved for food and beverage plant and equipment cleaning.



CLEANING PIPETS

versatile solution effective against an extremely wide range of contaminants.

Pipet Cleaning Procedure. Prepare a 5% v/v solution of **Contrad® 70** in deionized water. This concentration will be adequate for most cleaning but increase up to 25% solution if particularly stubborn contaminants such as hydrocarbons need to be removed.

If using a trough-style cleaning tank completely immerse the pipets in the **Contrad® 70** solution angling them to ensure that the internal bore of the pipet becomes filled with cleaning solution. If using a column pipet cleaner, simply place the pipets vertically in the column and allow **Contrad® 70** solution to soak overnight for greatest convenience. Four to six hours is normally sufficient soak contact time.

BIOHAZARD

In the case of biohazardous contaminants, add 25mL. Of 5% active sodium hypochlorite (Clorox) to each liter of mixed **Contrad® 70** cleaning solution. Renew solution at each use to ensure adequate sanitizing.

Caution: Wear eye protection, latex gloves and lab coat when handling **Contrad® 70** and sodium hypochlorite. Both are severe eye irritants.

Rinsing: Remove and drain the pipets. Do not allow them to dry before immersing in deionized rinse water. Where possible, rinse five or six times in a running flow of deionized water; or in a column pipet cleaner flow water over the pipets for ten minutes. Avoid the use of untreated water as this can introduce the problem of hardness salts deposition on the surfaces of the pipet. Remove and drain the pipets and allow to air dry.

CLEANING BOD BOTTLES

The usual requirement for cleaning BOD bottles is "soak in chromic acid". Chromic Acid, a strong oxidizing agent, will eat away most contaminants on the glass surface and leave that surface clean for subsequent use. In most instances where chromic acid is specified

for cleaning it represents an "overkill" solution.

The disadvantages of chromic acid are obvious; it is dangerous, toxic, expensive, unpleasant to use and may not be disposed direct to drain since it will corrode pipe work and is a pollutant.

Contrad® 70 is the safer alternative! In situations where BOD bottles are cleaned many times over a given period, no build up of detergent monolayers will occur when **Contrad® 70** is used. **Contrad® 70**, while alkaline, is infinitely safer than chromic acid, considerably less expensive and, since it is biodegradable, may be disposed directly to drain. An incidental advantage is that the **Contrad® 70** formulation may be used on a far wider variety of substrates than chromic acid, which will etch and oxidize materials.

Applications Advice. To clean BOD bottles in **Contrad® 70**, prepare a well mixed 5% solution in deionized water. Soak the bottles for convenience overnight, making sure to completely fill them with the **Contrad® 70** solution; trapped air bubbles create a pocket that will not be cleaned. Remove and empty the bottles and rinse immediately while still wet. Rinse in deionized water for best results. The bottles may then be air dried and reused. Do not allow the **Contrad® 70** solution to dry on the glass surface.

TISSUE CULTURE

Contrad® 70 is the ideal tissue culture cleaning medium. It is particularly effective against the proteinacious materials that pose the greatest cleaning problems in tissue culture work. Unlike chromic acid cleaning, **Contrad® 70** is a safe and simple detergent that

can be disposed straight to drain. Most importantly, **Contrad® 70** is totally rinsable. Water rinsing alone will remove **Contrad® 70** below monomolecular layer level. There is no residue left to inhibit or encourage cultures, and **Contrad® 70** contains no phosphates or chlorine.

VERSATILITY

An important quality of **Contrad® 70** is its versatility. There are several "Tissue Culture Cleaners" that are fairly good at removing proteins, but of no particular value in removing oils, carbons, greases, etc. **Contrad® 70** has a far broader spectrum and can be used

for almost every conceivable lab cleaning application, and for radioactive decontamination. In electrophoresis, for instance, it is used to clean plates and will strip away the vaseline and silicone grease used as a sealant. We know of no other detergent that removes silicones so effectively!