



# A.R.C. CLEANER™

## Aluminum Radiator and Components Cleaner

**Removes Oxides to brighten metal.**  
**Rinses easily leaving no white film.**  
**Restores heat exchange efficiency.**  
**Non-foaming formula for dip tank use.**  
**Blend of acids to clean a broader range of deposits.**

A.R.C. Cleaner is an industrial strength acid cleaner designed specifically for cleaning aluminum parts in a dip tank. It is designed to remove oxidation, other corrosion products and deposits. It does an excellent job of preparing aluminum surfaces prior to painting or repairing with epoxies to create better adhesion.

A.R.C. Cleaner is a blend of inorganic acids to provide the most complete corrosion and deposit removal with the safest product possible. The acids in A.R.C. Cleaner are inhibited to prevent excessive removal of base metal. A.R.C. Cleaner leaves the aluminum bright and shiny with a satin finish.

A special non-foaming wetting agent prevents foam from overflowing the dip tank. Some foam will lay on the surface of the solution. This is desirable as it reduces the volume of fumes that escape into the air.

Studies have shown that cleaning air conditioning condensers with an acid-type cleaner once a year can improve efficiency by 10 to 25 percent, depending on the amount of corrosion present. Aluminum oxide, when present on the metal surface, acts as an insulator between the metal and air. While we know of no studies on aluminum radiator efficiency, logic indicates that a similar improvement in efficiency should also result from cleaning.

**Directions:** The usual method of use is in a dip tank at a 1:5 dilution with water. Use a plastic or fiberglass tank, not metal. Pre-clean greasy or oily parts with SF-77 degreaser and a pressure washer or steam cleaner and then rinse. The K-1547 Acid Test Kit may be used to test strength. A cor-

rect 1:5 dilution will take seven (7) drops.

Dip parts for 3 to 5 minutes depending on the degree of corrosion and the temperature. Works twice as fast at 90° F. as at 50° F. If left too long, parts will over-etch or eventually, dissolve. Rinse immediately with water to prevent re-depositing of white film.

**NOTES:** For components too large to dip, A.R.C. Cleaner may be sprayed on if caution is used not to inhale mist or allow mist to drift onto sensitive equipment, polished metal, glass or painted surfaces. If you need a foaming product for spray on applications, try Damon's regular Aluminum Cleaner or Coil Cleaner.

Small areas may be spot cleaned by brushing or spraying on and then rinsing thoroughly.

Air conditioning condensers should not be dipped because they will become wet inside. To clean condensers, spray the cleaner on and rinse carefully. Efficiency is improved by cleaning this way. Be certain that no moisture or cleaner is left inside condenser. If any moisture does get inside, remove it with solvent or your usual method.

Pitted aluminum will look much better after cleaning, but the pits will still be apparent. Aluminum with a mirror finish will be given a satin finish as only polishing can restore the mirror look. This product will etch glass parts and attack various metals in different ways. Plastic, rubber and most paints are not affected by it. Test first to be sure. A.R.C. Cleaner will remove anodizing from aluminum. The Solution may be heated up to

120° F. to speed cleaning action. Do not heat above 120° F. to prevent driving off hydrogen fluoride fumes. To extend the life of A.R.C., all grease and oil should be cleaned from components before dipping in the A.R.C. tank. Grease and oil rapidly deplete solution strength. This chemical will need changing more often than caustic boilout compounds.

A.R.C. Cleaner should not be used on very close tolerance machined parts because, by the nature of the product, some metal removal always occurs. See the back of the sheet for more information about this.

**Packaging:** 4-1 gallon plastic jugs per case, 5 gallon plastic pails and 15 gallon plastic drums.

## Aluminum Loss When Using A.R.C. Cleaner

One of the questions we are often asked is, "How much metal is removed by A.R.C. Cleaner?" Since A.R.C. is an acid it does remove some metal by etching. Lab tests show that losses are acceptable for the recommended dip times with low tolerance parts. Dip times longer than those recommended may remove too much metal. On close tolerance parts you will have to decide for yourself what is acceptable using the graph below.

The loss in mils shown on the graph is for solution on both sides of the metal, as is the case with a radiator. If the cleaner is only present on one surface of the metal, divide the loss shown by two (2).

These times are at 70 degrees F. Higher temperatures speed up the etching rate. Lower dilution ratios, such as 1:3, also speed up the rate.

Radiator tubes average 15 mils thick. Therefore, a five minute dip removes 0.67% of the thickness. A three minute dip removes 0.39% of the thickness. On very thin metal, such as 3 mils, the removal would be 3.33% in five minutes. The metal losses shown were calculated from the weight of metal lost from a piece of aluminum measuring two square inches. Micrometer measurements were less accurate, but plotted closely to the calculated data.

## Aluminum Loss in Mils With A.R.C. Cleaner

