



Electrolysis...

Did you know that electrolysis is one of the leading causes of premature failure in aluminum radiators? And yet, today, electrolysis is little understood by most installers and radiator technicians. In extreme conditions, electrolysis can reduce a brand new radiator to a piece of Swiss cheese looking material in a matter of days after installation.

- ...what is it?
- ...what causes it?
- ...how do you detect it?
- ...how do you fix it?



What is it?

Stray electrical currents can cause electrolysis corrosion. They attack the coolant and turn it into an acid. This acidic coolant then eats away at engine component metals which lead to failure.

What causes it?

Most likely it is caused by improper vehicle grounding. Electrical grounding problems can stem from poor installation of aftermarket accessories or uncorrected vehicle collision damages.

How to detect it?

First, test your antifreeze with ph test paper. It should be neutral or somewhat alkaline. If the coolant has been effected by a stray current it will be acidic. Another way to test would be with a voltage meter to see if there is a difference in the coolant voltage and your vehicle ground.

How do you fix it?

Unless you're somewhat experienced, we suggest you take it to a certified professional mechanic. If you choose to tackle this problem yourself, here are the steps to follow:

- 1) You must find and correct the electrical problem (stray current).
- 2) You will need to completely flush your entire cooling system. Acidic contaminated antifreeze left in the engine block will eventually ruin another radiator. Please review our publication "How to Replace a New Radiator."
- 3) Once the new radiator is installed, you must use only new quality antifreeze and distilled water. Never use recycled antifreeze or tap water.
- 4) Once everything is installed properly you need to retest the system, insuring the coolant is neutral or somewhat alkaline. We also suggest you test this regularly to guard against the problem reoccurring.



Performance Radiator advises against replacing aluminum radiators with copper brass units in an attempt to counter the effects of electrolysis corrosion. If the fault is not found and cured, copper/brass radiators too will corrode, although more slowly. The greater danger is that other engine parts (block, head, water pump) may fail as well. Additionally we warn against modifying any of the electrical circuits.

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