

# A/C Leak Sealer: A Controversial Last-Resort Fix

by John Hess

Bone of contention:  
Will A/C sealant save  
the day or destroy  
Western Civilization?  
(courtesy Cliphlight)



Typically, this is considered suitable only for older cars that aren't valuable enough to warrant the cost of an expensive evaporator replacement. Our old friend John, however, gives us the rest of the story.

It's that time of the year again. My e-mail inbox is stuffed with pleas for help in finding that magic retriever of cold air -- a low-cost refrigerant system sealer. It's either that, or

they're asking whether or not to use one in the first place.

While sent in by folks of every stripe, these requesters all seem to have two things in common: They're cooking in their vehicles and desperate for relief, and their A/C systems won't hold a charge. Well, maybe they have a third thing in common: They can't or won't pay to have a professional A/C shop fix the system properly.

The normal reasons given for not having the shop fix it are:

1. They don't have the money.
2. The vehicle isn't worth the cost of a righteous repair.
3. They only need it for one more season.

Or, all three (Number 2 is especially applicable in states like California where older vehicles may not pass their next smog check).

Here are examples of the messages I get. While some are definite candidates for a sealant, others obviously aren't:

*"My buddy is thinking about putting some air conditioner stop leak on his '95 Grand Am. I have never heard of this before and my first impression is don't do it. I've always heard not to get anything in the air conditioning system. Has anybody tried this stuff before? The compressor itself*

*is leaking (has a crack) and he thinks this might get him thru the summer. Will this damage the system in anyway? Thanx in advance!"*

Forget it -- a cracked compressor and he's worried about something damaging the system?

Here's another:

*"I own a 1995 Plymouth Voyager and I have been told that I have a small leak in my evaporator. What I would like to know is if there is a way to fix this without having to take the dash off of my car. The air conditioner is located behind the dash. I have been given an estimate of \$500.00 to replace the evaporator. I am basically looking for some information that would tell me if there is something my husband could do to fix it ourselves. Any help you could give me would be greatly appreciated. Thank you, Jane"*

Wow, talk about a tough sale. Though that price is couple of years old, it was still quiet reasonable at the time. Most evaporator replacement jobs then were at least \$1,000. But Jane still wouldn't go for it. As Tony Soprano would say, "Whatareyougonnadoaboutit?" Since most Chrysler and Jeep evaporators are good candidates for sealing, how about someone offering to take a shot at fixing it with a professional leak sealer?

You can find more testimonials, both pro and con at: [http://www.imcool.com/articles/aircondition/ac\\_sealants\\_p2.htm](http://www.imcool.com/articles/aircondition/ac_sealants_p2.htm)



We got this shot of a clogged orifice tube from the field. A do-it-yourselfer didn't follow the proper procedures and really loaded the system up with sealer.

Up front, I'm well aware of the negative feelings (to say it nicely) that most A/C shop owners and techs have about sealers. I also hear from the other side, however, brethren of the above who are using sealers quite successfully. Joe Fortunato (Automotive Air & Specialty, Jupiter, FL), for instance, a 39-year A/C tech and 25-year shop owner, is not shy about using the Cryo-Chem product. He's been installing it for several years and gets a 98% success rate when used on true candidate vehicles, such as the Plymouth Voyager above. Joe doesn't offer a warranty on the service, but if the sealing job doesn't hold, he will credit the cost toward a full evaporator replacement service.

## How A/C sealants entered the vehicle market

As additional support for the viability of Cryo-Chem and sealants in general, I offer snippets from a post to the bulletin board at [www.aircondition.com](http://www.aircondition.com) by George H. Goble, better known a few years on the internet as "ghg."

Background: George is the inventor of several R-12 alternative refrigerants, one of which is GHG-X3 that he introduced in 1990. Later classified by ASHRAE, it became known as R-406A, and eventually by the trade name “Autofrost.” Yes, it is a “blend” refrigerant (more on blends in a future MT article).

Here’s how George described his first “fix” in 1982 of his 1978 Datsun 810’s leaking A/C system:

*“At first, I ran small tubing (1/8” copper), and put a manifold and dry-eye in the passenger compartment. And drove around with a 30lb cylinder of R12 in the back seat...and when the system got low, just opened up the low side manifold valve and put in another pound of 12 while I was driving! Hell, a 30lb cyl of R12 was only \$30 back then and lasted all summer! What ozone hole? When fully charged, and hot, it lost about 1 pound/week.”*

George was ready for a leak sealer, and lo and behold:

*“I met up with JJ Packo around that time. My home central A/C (R22) had started leaking about 1-2 lb/month (4 years old)... They had a SSR12 “kit”, that was two cans of R12, one with some “dry-pak” dissolved in the R12, and the 2nd with some cryo-silane (gaseous epoxy) dissolved in the R12. Kit was about \$100.”*

Take one “Home” A/C system leak sealer kit, try it in a leaky car, and voila!

*“Instructions were to put on a new dryer, and change the orifice tube (this car had an expansion valve). I didn’t change the dryer, but did a 10 min. vacuum, charged in the 1 lb can of dry-pak (about 2% dry-pack concentrate, rest is R12), put in a can of R12 (now at 2/3 charge)... and ran car for 1/2 hour to circulate the dry-pak, which converts the free moisture into silicone*

*oil (so it doesn't form acids anymore, and in this case, removes the moisture, so the cryo-silane won't activate). Next, added the Cryo-silane (about 3% cryo-silane concentrate in 12oz of R12), and now at full charge.*

For a couple of days, I noticed the cryo-silane “dead fish” odor when starting up the A/C (evap leak). After two days, odor was gone, voila, it worked. It self-sealed the evap leak!

And it held. That car never leaked again. And in 1990 it became the “development” car for GHG refrigerants: GHG-X1, X2 (HCs), GHG-X3 (R-406A/Autofrost), and GHG-HP. In 1993, the fuel pump died (but the A/C still worked), so I junked the car.”

Interested readers are encouraged to read ghg's entire post at:

<http://www.aircondition.com/wwwboard/current/18951.html>

For those needing more evidence of George's refrigeration bona fides, he is a senior systems engineer for the Engineering Computer Network department at Purdue University. Besides inventing, patenting and developing several substitutes for Freon, check out the paper he and colleagues presented at the Purdue 1992 International Refrigeration Conference -- Energy Efficiency and New Refrigerants: <http://www.autofrost.com/peoples/ghg/ghg-ternary.pdf>.

For those of you techs who believe you know everything there is to know about R-12, R-134a, and associated lubricants, I challenge you to read this piece and not learn something new.

If you're still convinced that sealants aren't a viable service for “legitimate” A/C shops, I ask you, would a man who understands more about refrigerant systems—including vehicular—than most of us could absorb in a lifetime, flippantly suggest the usage of something that would damage them? Not hardly.

## Do-it-yourselfers are the problem

So far, the sealant manufacturers and parts houses have probably been cheering this piece. Here, however, is where we will probably part company (I might even regain some shop owner/technician supporters). While it's not illegal (where are the environmentalists?), it certainly is somewhat unethical, in my humble opinion, to offer these products to the DIY public. Why? For one thing, because of the age-old human adage that if one shot didn't do it, give it another [Editor's note: How about, Too much is not enough?]. That's how systems truly do get fouled. Then, if you need a certificate to buy refrigerant and work on refrigeration



For some people, too much is not enough.

systems, why don't you need a certificate to buy refrigerant-sealing products that circulate within the refrigerant? I've not (yet) asked the manufacturers, nor reps from the EPA, that question, but someone really should.

Cliplight, a manufacturer of two A/C sealants, Super Seal HVACR 944Kit and the Super Seal Premium 946Kit, has commented publicly on what DIY sales of sealant products can bring:

*“It should be appreciated that the marketplace is full of A/C leak sealers that are sold directly to the DIY segment and these products are injected into an A/C system without any measure of pre-inspection of the system or control during the injection process. It's also worth noting that these products often contain:*

- *Hydrocarbon propellants that will contaminate a reclaim bottle.*
- *Dyes visible to the naked eye without the use of a UV light source that, under certain*

*conditions, can develop crystalline formations in the system and neutralize the fluorescent dye intensity.”*

Should the a/c system fail to respond successfully to this DIY treatment, the consumer -- in final desperation -- contacts a qualified service technician. Most professional techs will refuse to work on a vehicle that has had DIY “cocktails” injected into the system. If he does the first stage evacuation process, it could present him with nasty surprises! Especially if the system had been contaminated with moisture saturation (undetectable by the DIY consumer).

## Protecting the compressor

Understandably, most vehicle manufacturers, along with A/C component and recovery equipment makers, are not proponents of A/C sealers. As a rule of thumb, if they find remnants of a sealer in anything returned for warranty, the claim will

be denied. When a shop uses a sealer in a system, either the shop or the vehicle owner assumes responsibility if contamination causes a problem. Most technicians who use the product will advise the customer that it is a last ditch effort; there is no warranty.

Note: Cryo-Chem, SSR International does offer dealers a limited one-year warranty with its SSR134Kit. It covers corrosion leaks in condensers and evaporators. The dealer must be 608/609 certified, follow SSR’s installation directions and satisfy other requirements.

Cliplight Manufacturing not only offers a limited one-year warranty on its product, but also, under “Coverage B,” covers many A/C components. For instance, if SUPER SEAL PREMIUM was found (by Cliplight) to have caused the failure of the compressor, Cliplight will reimburse the dealer up to \$350. Since several conditions and exclusions apply, be sure to check the web page for the details:

<http://cliplight.com/automotive/products.php?pageID=Warranty&productID=16&catID=4>

## Contamination protective devices



[Above] This recycling machine solenoid is plugged with A/C system sealant. Not good.

### Filter Out Sealant, Dye, & Lubricant



Recycle Guard from AirSept: To protect your refrigerant recovery equipment and clean jugs of refrigerant, you do not want to recover sealer-laden or otherwise contaminated refrigerant. Airsept's Recycle Guard uses high-tech filtration to separate and remove sealant, dye, lubricant and solid contaminants from the refrigerant. These remain in the canister while the vapor refrigerant exits to your A/C machine ([www.airsept.com/](http://www.airsept.com/)).

System Guard from SYSTEMGUARD: To show if someone has tampered with your A/C service job (such as a vehicle owner adding contaminated refrigerant or DIY "stop leak," then blaming you for the disastrous results), slip either a heat-shrinkable System Guard sleeve or plastic tie wrap over each service port. They're color coded and serial numbered. Once heat shrunk or crimped to the port, any disturbance will be clearly visible (<http://www.acsystemguard.com/>).

[Left] Here's the best way we know of to keep sealer and other contaminants out of your A/C machine [courtesy AirSept].





Whether you strap them on as shown, or heat-shrink the sleeve type, tamper-evident service port protectors will let you know if somebody's been in there since you last worked on the vehicle (courtesy Systemguard).

Neutronics QuickDetect A/C Sealant Detection Kit: QuickDetect is designed to act as an A/C leak. If sealant is present in the system, it quickly solidifies in the disposable test cartridge causing the flow meter to show “no flow.” When attached to the high-side port, if the flow

meter shows constant flow for two to three minutes, it's most likely sealant free. If the flow rate visibly decreases, the refrigerant contains a sealant. Other than the low-cost test cartridges, all of the QuickDetect components are reusable (<http://www.refrigerantid.com/>).



This cleverly-conceived kit tells you whether or not there's any sealant in the system so you can decide how to proceed [courtesy Neutronics].



John Hess, a Viet Nam vet, entered the radiator repair business in 1971. He is the editor and publisher of Cool Profit\$ magazine

[[www.imcool.com](http://www.imcool.com)], a professional journal targeted to radiator and A/C technicians and shop owners, and the Heat Transfer Service Network [[www.goHTSN.com](http://www.goHTSN.com)].

For more information about sealants, check out the air conditioning pages of [www.imcool.com](http://www.imcool.com). Not only will we offer a “Blog,” but also your “Comments” can be added to our articles that contain controversial subject matter. 