

AC Smart Seal

Changing The Perception of Sealants in the Industry

Effects of Polymers

The technology that distinguishes AC SMART SEAL from the other sealants on the market, is based on principles of deposit and physical-mechanical aggregation of molecules.

Most of the leak stops on the US market make use of a technology of chemically active molecules that, due to the reaction with oxygen and/or moisture, solidify. Although this technology is very fast, it has 4 important side effects:

- 1) Inside the AC/R system, If best practice installation is not performed, air and moisture could be present within a system.
- 2) If the product is not stored perfectly, the chemical reaction can occur even in the packaging, making it unusable.
- 3) The ability to stop refrigerant gas leaks is soon inactivated. It can fix the leak immediately but it can't be used as a preventive measure.
- 4) This kind of molecules has few elastic abilities, which make the fixing fragile for the continuous temperature changes and vibrations.

The technology used by the molecules of the AC SMARTSEAL leak stop is a chemical-mechanical solution. SMARTSEAL has micro-molecules which are dissolved in the compressor lubricant and keeps in touch with the refrigerant gas, allowing the molecules to go around freely in the AC/R system. When a AC/R system is leaking, the refrigerant gas comes out dragging the lubricant and the SMARTSEAL molecules, which begin to create and form, stopping the leak. In these conditions, the gas leaking flow gradually decreases and the extremely elastic AC SMARTSEAL molecules begin to aggregate sealing the leak. The temperature and pressure changes, caused by the normal operating activities of the AC/R system, strengthen the seal.

The AC SMARTSEAL molecule is completely inert, so it doesn't react with other additives that can be added or already are in the AC/R system.

The seal made with AC SMARTSEAL resists even in case of a complete system cleaning, both internal and external. It is not reactive, it goes on circulating in the system acting as a preventive measure for future leaks.

From the analysis of the report made by our labs, we find out that SMARTSEAL molecules increase the stability of the lubricant POE used in the AC/R system when they melt together, reducing considerably the corrosion the lubricant causes naturally to the AC/R system and consequently increasing its life.

UV Dyes

Problems are caused by many Fluorescent UV dyes produced because the fluorescent molecule, which is solid, is dissolved in solvents to become liquid. The choice of using solvents is very dangerous because when the solvent dissolves too much fluorescent to be more effective, it creates the following negatives:

- 1) Solvent can't be injected in a AC/R system;
 - 2) Solvent melts O-rings;
 - 3) Solvent reduce lubricant power and viscosity in the AC/R system.
- Technicians know these risks but often ignore them.
 - Solvent-base UV dyes use refrigerant gas to transport fluorescent in the AC/R system.
 - Exactly as the refrigerant gas, the solvent evaporates in the low pressure side and precisely in the expansion valve.
 - Solvent evaporation causes the deposit of the fluorescent molecules which return to be solid, obstructing and clogging the expansion valve.

Cool Air Products uses UV fluorescent dye which dissolve the fluorescent solid molecules in the lubricant without using solvents. Technically, it is defined liposoluble, commercially solvent-free.

SMART SEAL 3-in-1 products use fluorescent UV dye (solvent-free) that use the lubricant of the AC/R system to transport the fluorescent dye, preventing clogging in the system.

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