

SPECIAL WARNING

DO NOT Allow POE OIL to come in contact with PVC or ABS

Environmental Stress Cracking (ESC) in PVC or ABS pipe materials can be brought on by specific substances. One such substance that may be found in condensate drains for air conditioning and refrigeration is Polyol Ester oil, or POE oil for short. POE oil is a synthetic oil type that is used to lube refrigeration compressors.

POE oil is quite incompatible with ABS and PVC plumbing, which leads to leaks later on. If the refrigerant circuit is opened while doing repairs or maintenance, POE may get into the condensate system. Additionally hygroscopic, POE oil absorbs moisture from its surroundings. Condensates may readily include POE oils in such circumstances.

The POE lubricating oil used in the heat-exchanger refrigerant can occasionally contaminate plastic pipes in hydronic heating systems, leading to system failures. Although heat exchanger leaks are uncommon, when they do happen, the POE oil lubricant in the refrigerant can chemically attack the leak and cause the piping system to collapse very instantly.

A lot of information about the materials used in compressors and refrigeration equipment is now widely available. The onus is on the designer and installer to make sure that every piece of machinery and system operating conditions exhibit good compatibility with lubricants and refrigerants. This covers various coatings, metals, seals, and plastic parts, such as condensate drains, among other things.

