

SPECIAL WARNING

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

Certain chemicals can cause Environmental Stress Cracking (ESC) in PVC or ABS pipe materials. One such chemical that can be encountered in air conditioning and refrigeration condensate drains is Polyol Ester oil, commonly called POE oil, which is a type of synthetic oil used to lubricate refrigeration compressors.

POE oil is highly incompatible with PVC and ABS piping resulting in subsequent leaks. POE can enter the condensate system if the refrigerant circuit is opened during repair and maintenance work. POE oil is also hygroscopic and can pick up moisture from the surroundings. In such cases, condensates may easily contain POE oils.

Plastic piping in hydronic heating systems can also occasionally fail because of chemical contamination by POE lubricant oil used in the heat-exchanger refrigerant. Whilst leaks in heat exchangers are rare, when a leak does occur, it can lead to almost immediate failure of the piping system owing to chemical attack by the POE oil lubricant in the refrigerant.

Today there is substantial information commercially available on materials used in compressors and refrigeration equipment. It is the designer and installer's responsibility to ensure that all equipment and operating conditions in the system show good compatibility with both refrigerants and lubricants. This includes, but is not limited to, different coatings, metals, seals, and plastic components, including condensate drains.