Causes and Solutions for Foaming in Oil Ashley Mayer Foaming is a common problem with oil-lubricated components.The most common include: Water contamination Solids contamination Depleted defoamant (possibly due to the use of excessively fine filtration and electrostatic separation technologies) Mechanical issues (causing excessive aeration of the fluid) Overfilling of the sump with splash- and bath-lubricated compartments Cross contamination of the fluid with the wrong lubricant Contamination of the fluid with grease Too much defoamant additive, either by incorrect formulation or by incorrect reconstruction (sweetening) of the additive package Measurement The first tests attempted should be water quantification and particle counting.Foam tendency describes the amount of foam generated immediately after the fluid is agitated and aerated, and foam stability quantifies the amount of foam remaining 10 minutes after the cessation of aeration.The presence of air bubbles in the fluid can lead to excessive oxidation, cavitation, the reduction of lubricating properties of the oil and hydraulic system failure.If you have a foaming problem, the air bubbles in the fluid would otherwise trigger an abnormally high particle count, and that could lead to attempting an incorrect solution.If the particle count does not reveal any significant contamination, try a patch test using very fine-rated (one micron or less) filter paper.It can be difficult to troubleshoot, and for this reason, accurate testing to determine the root cause of the foaming is essential.The formation of air bubbles is often aided by such contaminants, as they provide a nucleation point for the air bubbles.It is important that degassing techniques are used to prepare the fluid prior to the particle count.Symptoms Foam is a collection of small bubbles of air that accumulate on or near the surface of the fluid.In severe cases, the foam can leak out of the machine through breathers, sight glasses and dipsticks.Foam is an efficient thermal insulator, so the temperature of the oil can become difficult to control.Scrutinize the patch closely under high magnification.You might also want to run a pentane-insolubles test (ASTM D4055-E).This will quantify very fine contamination which can provide nucleation material.Ask your laboratory to run tests for foam tendency and foam stability.These tests are described by ASTM D892 and are run together.Causes The causes of foaming are many.

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