TROUBLESHOOTING THE MOST COMMON PROBLEMS IN METALWORKING FLUIDS

Residues

Most cutting fluid residues can be described as oily and/or tacky deposits found on surfaces in and around machine tools. During use, fluids splash and generate mist which evaporates, leaving the dirt, fines, swarf, product components, hard-water soaps and dissolved solids behind on the surfaces of the machine tool. Fluids containing oil generally leave a larger volume of oily residue, while synthetic fluids leave a more difficult tacky residue, but less of it. Adjust guards, shields and other mechanical control devices to minimize excessive misting and splash.

Causes

Residues may be caused by either chemical or mechanical issues. To find the cause, first check the concentration of the fluid in the machine tool. If it is too high, add water to bring the concentration within the proper range.

Next, check the hardness level of both the make-up water and the fluid in the sump. High levels of water hardness (calcium and magnesium ions) can lead to residue formation. To treat the problem, a partial system dump or treated make-up water may be required.

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Fluid contamination may also be the culprit. Tramp oil (hydraulic fluids, way lube, spindle oils, etc.) left in the cutting fluid will increase residue formation. Also, check the fluid reservoir to make sure it is not full of chips or other debris that may be contributing to the residue problem.