

“Water is life and whenever there water, there may be biological growth”

“Metal working fluid is the life book of metal working process performing parallel functions as carrying away heat, preventing rust, aiding lubrication and increasing tool life”.

“Excessive biological growth depletes the concentrate and the additives”.

“The minerals in hard water can, for example cause corrosion of both tools and machines parts and aid bacterial growth and affect emulsion stability”

“With high hardness water, i.e. excessive magnesium & calcium coition’s, emulsifiable oils can form insoluble soaps, increase the rate of biological growth and cause emulsion instability.”

“High chloride sulfate content in water also defeat the rust protection designed into coolant formulation. These will aid corrosion and help the growth of sulfate reducing bacterial which produce the Monday morning odors

“If water is hard there are several techniques available to reduce these levels. Softened water is water that has been passed through 3 colite column which replaces the calcium and magnesium ions with tendency of soluble oils to form hard water soaps but does not remove the chloride or sulfate ions. In effect, hardness has been removed while the other dissolved salts are left behind with the capacity to cause rust corrosion:”

“For optimum coolant performance, deionized water is best:

A deionizer removes cations, (Chlorides, sulfates) with this no residues are left when water evaporates and corrosion effects from minerals are eliminated:

Metalworking fluid may support micro flora that include bacteria, yeast and molds

The essential nutrients for micro flora come from many sources- the ingredients from the metal working fluid, contamination from hydraulic fluids,

rust preventives and shop dirt event the make up water can supply significant nutrient content as well as additional microbes