

HOW DO YOU CHOOSE A GOOD VEGETABLE FLUID?

BY PRICE

Price per unit quantity has some bearing, however, the ratio of the amounts consumed to work performed is critical. If the amount consumed of two products for the same performance with no change "side effects", then price per unit quantity is important.

BY COLOR

The natural, pure, colors are a pale yellow to colorless. Adding any coloring contaminated the natural product, reduces its effectiveness. Since blue is the least contaminating color it is often used by many suppliers. A more deep yellow color could indicate that sulfur has been added to increase pressure properties.



BY FRICTION TESTS

Friction tests have some value if one is testing for friction, if performance in a machining operation is the objective. Testing it in that operation is the only valid test. Friction test results may have little or no value in fluid performance characteristics.

BY SMELL

Most all vegetable fluids are almost odorless at room temperature. More commonly, an undesirable odor can be generated when the fluids become hot. Since normally they have a very high flash point, they can get extremely hot before burning and emit an undesirable odor.

BY FEEL

Commonly, rubbing some fluid between fingers is used to evaluate the "slipperiness" of a fluid. This has no bearing on what is transpiring at the interface of a warm cutting tool and the work piece. The actual distance between the tool and work piece is probably a negative number.

BY SHELF LIFE

A truly pure vegetable product will have infinite shelf life. Additives intended to increase performance and/or reduce cost could cause degradation of shelf life.

BY ENVIRONMENT REQUIREMENTS

Vegetable fluids are almost always very environmentally friendly in their neat (unused) state. Normally they are non-toxic and biodegradable (to some degree). Once they are applied, they can "break-down", and possibly react with the machined material and its chips, creating less desirable properties. Often if the fluid is atomized excessively, airborne particles result which can cause irritation. This normally results from excess fluid and/or excess atomizing air.



BY COMPATIBILITY WITH PAINT, SUBSEQUENT PROCESSING, ETC.

Most fluids require viton seal materials. Some fluids are compatible with prepainted stock, but may have negative side effects. Some fluids can run anodizing fluids.

Some fluids can become tacky causing chips to adhere to each other, the tool and machine. This same property can cause a varnish type residue to form which is not soluble in any other fluid.

BY RELIABILITY OF SOURCE

Most companies have many products available at differing prices. Check with your supplier on the properties of their products. Most often "You get what you pay for". A cheaper product may be the most expensive, everything considered.

BY PERFORMANCE

There is no better way than trying the fluid in the actual application of its intended use. Many fluids will initially give similar results. Many fluids will expose oxidation or polarization problems only after exposure to heat and pressure. The most notable evidence of negative properties is "stickiness" which could eventually build into a hard varnish residue, creating unlimited problems. The less pure and normally less costly fluids fall into this category.

BY VISCOSITY

Vegetable products are known for their good "viscosity index"-- that is viscosity changes very little with a temperature change. Viscosity at room temperature really tells very little about the effectiveness of a lubricant at the interface of a cutter and the work piece, where there may be a negative gap. The true behavior of a lubricant under such pressures is not predictable and is best determined by experimentation. Penetration - or the ability of a fluid to migrate into the heat zone is a key to fluid effectiveness. Again, only experimentation is the best teacher.

