

# Shell FENELLA® Fluid D 4450

## **Water miscible metalworking fluid**

Shell FENELLA® Fluid D 4450 is a soluble oil used for perforating, blanking and forming.

### **Performance Features and Benefits**

Shell FENELLA® Fluid D 4450 contains special EP-, lubricity additives and corrosion inhibitors for heavy-duty operations.

### **Main Applications**

Shell FENELLA® Fluid D 4450 is a soluble oil that can be used for perforating, blanking and forming operations.

It contains high film strength boundary lubricants that respond to tooling demands in high-speed operations.

Shell FENELLA® Fluid D 4450 is suitable for use on metals including carbon steels, stainless and aluminum alloys.

Advice on applications not covered in this handbook may be obtained from your Shell representative.

### **Recommended Concentrations**

The concentration varies depending on the type of machining operation, the water hardness, and the required inter-operational corrosion protection.

Dilution of 5%-100%, depending upon operation, can be applied by spray, roll or dip.

### **Storage Requirements**

The product should be stored inside (41°-104°F) for no more than 1 year and be protected from freezing.

### **Handling and Safety Information**

Please note that mixed coolants work over long periods of time, therefore chemical contamination (hydraulic oils, greases, metal solutions, paints, rust inhibitors, etc.) or bacterial contamination (from dirty hands, work pieces, industrial grade water, sundry waste, etc.) can often occur.

Contamination with the above materials should be minimized or ideally eliminated. Regular monitoring of the in-use product is recommended to maintain optimum product condition and determine the end of its useful working life.

For information on the safe handling, storage, or use of this product, refer to its Material Safety Data Sheet at <http://www.epc.shell.com/>. If you are a Shell Distributor, please call 1+800-332-6457 for all of your service needs. All other customers please call 1+800-237-8645 for all of your service needs.

### **Protect the Environment**

Do not discharge into drains, soil, or water.

## **Typical Physical Characteristics**

	Unit	Method	Shell FENELLA® Fluid D 4450
<b>Concentrate Appearance</b>		Visual	Transparent
<b>Emulsion Appearance</b>		Visual	Milky
<b>Kinematic Viscosity @ 40 °C</b>	cSt	ASTM D 445	114
<b>Density @ 20 °C</b>	kg/L	ASTM D 1298	0.950
<b>pH value at 10%</b>		DIN 51369	9.0

*These characteristics are typical of current production. While future production will conform to Shell specifications, variation in these characteristics may occur.*