

SHELL METALINA® BY 2211

Water extendible metalworking fluid

SHELL METALINA® BY 2211 is a full synthetic, high quality coolant specifically designed for grinding of cemented carbide tools.

Performance Features and Benefits

- Prevents leaching of cobalt into the fluid – creating a more safe working environment
- High stability – consistent product quality and performance maintained throughout its life
- Full rejection of tramp oil – better working conditions, provides cleaner components, reduced degreasing and disposal costs
- Rapid settlement of metallic fines – optimizing surface finish
- Minimizes formation of sticky deposits
- Excellent foaming behavior
- Transparent solution – excellent visibility of the work piece
- Operator friendly

Main Applications

SHELL METALINA® BY 2211 is especially recommended for grinding of cemented carbide tools. In cemented carbide, cobalt is used as a binder for the tungsten carbide particles. Using SHELL METALINA® BY 2211, which contains a very specific inhibitor, prevents/minimizes the leaching of cobalt into the fluid.

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 corrosion protection. The typical recommended concentration for use in medium water hardness is:

- Grinding of cemented carbide : 4 – 5 %

Storage Requirements

The product should be stored inside (41-104°F) for no more than one year. Freezing should be avoided.

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/eliminated. Regular monitoring of the in-use product is recommended to maintain optimum product condition and for determination of it's 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 METALINA® BY 2211
Mineral Oil content	%		0
Kinematic Viscosity @ 20 °C	cSt	ASTM D 445	1.5
Density @ 20 °C	kg/L	ASTM D 1298	1.11
pH of the emulsion at 3%		DIN 51369	8.9
Min Anti-Cor. Protection Limit (0-0)	%	DIN 51360/2	4.0
Refractometer Factor			1.5

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