

**MAYFREE 133**  
**Phosphorus Nitrogen Compound**  
**Chlorine Replacement Additive**

**Mayfree 133** is recommended as a replacement for chlorinated paraffin in almost every metalworking operation. **Mayfree 133** is oil soluble; however, it can also be incorporated into water dilutable formulations.

The rule of thumb to follow when trying to replace a chlorinated paraffin is to work on a one for one basis of **Mayfree 133** for % chlorine. For example, a cutting oil contains 6% of a 50% chlorinated paraffin, bringing to the formula 3% chlorine; therefore, one would substitute in the product 3% **Mayfree 133**.

**Mayfree 133** does possess a high acid number, so the addition of or increase in the alkaline components, such as triethanolamine, must be made. In oil systems, **Mayfree 133** is not compatible with other chlorine replacement additives, such as overbased sulphonates.

**Mayfree 133** is recommended for all metalworking applications, with the exception of very severe or stainless operations, which are normally performed with cutting oils containing in excess of 20% chlorine. **Mayfree 133** has, in the field, successfully replaced chlorine at levels up to 15% in the formulations.

**TYPICAL PROPERTIES**

Property	Result
Specific gravity @ 60/60°F	0.99
Density, lb/gal	8.25
Appearance	Dark Amber
Neutralization Number, meqKOH/g	155
Viscosity SUS @ 100°F	44,000
Viscosity SUS @ 210°F	750
Viscosity cSt @ 100°F	9,500
Viscosity cSt @ 210°F	162
Phosphorus Content, %	4.0
Flash Point, C.O.C., °F	460
Flash Point, C.O.C., °C	238

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