

Cutting Fluids Quick Reference

Material	Recommended Fluids	Notes
Aluminum	Kerosene, WD-40, IPA, Commercial Aluminum Fluids	Prevents built-up edge, improves finish
Brass	Generally dry; light oil if needed	Machines cleanly, minimal fluid required
Bronze	Sulfurized/light cutting oil, soluble oil	Lubrication reduces tool wear
Copper	Kerosene, light oil, soluble oil	Prevents gumming/sticking
Steel (mild/low carbon)	Soluble oil, sulfurized cutting oil	Cooling and lubrication reduce wear
Tool Steel	Heavy-duty cutting oil, soluble oil	Helps prevent overheating and tool wear
High Speed Steel (workpiece)	Cutting oil or soluble oil	Necessary for harder alloys
Stainless Steel	Sulfurized cutting oil, soluble oil with EP additives	Prevents work-hardening, reduces tool wear
Cast Iron	Dry or air blast	Graphite provides natural lubrication; fluids create messy sludge
Acetal (Delrin)	Dry or air blast	Chips clear easily; fluids unnecessary
Titanium	Flood coolant, soluble oil with EP additives	Prevents galling and work-hardening, requires heavy cooling