

# Case Study

## Binol Cut 10

Below follows a summary of the results noted in the course of a comprehensive and thorough field study with focus on grinding applications based on a straight metalworking fluid.

The study was performed after a mineral oil was replaced by Binol Cut 10, an environmentally acceptable vegetable oil-based cutting oil without EP additives and with a viscosity of app. 11 mm<sup>2</sup>/s at 40°C.

The results are an example of the positive effects achieved.

### Facts

Application:	Grinding
Machine:	Junker Quickpoint 5002, high-speed grinder
Material:	Steel, hardened high alloy
Type of Abrasive:	CBN (140 m/s)
Tank Volume:	3000 litre
Filter:	Containing corn flour
Pump Pressure:	20 to 80 bar
Cycle Time:	2 to 2.75 minutes
Running Time:	24 h/day (>90% of the total running time under 8 years)
Adjustments:	Non

### Results

Oil Consumption:	Decrease by 66 percent.
Oil Change Recommendation:	The previous supplier recommended a 12 month oil change interval
Destruction of Used Oil:	No destruction or oil change has been taking place since the start in 1998. The system has only been topped up.
Skin & Respiratory Irritation:	No longer any irritation but reports of a "softer" skin-feel and reduced dehydration.
Oil Mist:	From >1 mg/ m <sup>3</sup> to ≤0,05 mg/m <sup>3</sup> . (OEL=1 mg/ m <sup>3</sup> )
Cleaning Intervals of Electrostatic Air Filters:	Prolonged from once a week or fortnight to once every three months.
<b>Total Cost Saving:</b>	<b>50 000 SEK/year/machine = 5 400 EUR/year/machine</b>