

## Cold drawing oils for white metal tubes

### Draw bench lubricants

Product	For	OD	ID	Viscosity	Cleaner	Experiences
			Mandrel / plug	cSt @ 40°C		
<b>Gruebb 4099</b>	304L, 316L, 625	✓	✓	~2500	alkaline water wash or Dowclene 1601	Replaced 5 different lubricants, including a plastic lubricant. Enabled changeover from trike to a alkaline wash cleaner. Proven by over 6+ years of usage in a large US plant.
<b>Gruebb 4426</b>	304L, 316L	x	✓	~1000	Dowclene 1601	Tube drawing oil, alternative to Houghton's Tube Lubricant CR45.
<b>Gruebb 4427</b>	304L, 316L	✓	✓	~2500	Dowclene 1601	Replaced 2 widely used oils. Used in large European and US plants. Excellent performance, on both the o/d and mandrels. Competitive.
<b>Ziedex 160</b>	304L, 316L	x	✓	~160	Solvent	Alternative for Houghton CR51H, Hangsterfer's J-50E.
<b>Ziedex 160W</b>	304L, 316L	x	✓	~160	Solvent	Long chain chlorinated wax variant of Ziedex 160, better HS&E.
<b>Ziedex 4000</b>	304L, 316L	✓	x	~4000	Solvent	Alternative for Houghton CR40, Hangsterfer's J-2E.
<b>Ziedex 4000W</b>	304L, 316L	✓	x	~4000	Solvent	Long chain chlorinated wax variant of Ziedex 4000, better HS&E.
<b>Ziedex CR</b>	304L	✓	✓	solid film	Solvent	Alternative for Hangsterfer's P46