

Innoleo Additives for *Sustainable* Metal Working Fluids

	Metal Removal Fluids (<i>straight, soluble, semisynthetic, synthetic additives</i>)							Metal Forming Fluids
	Oiliness Agent	Corrosion Inhibitor	Dispersant	Coupling Agent	Synthetic Lubricant	Plasticizer	Base Oil	
Innoleo® FSG (castor oil first special grade/#1 castor oil)	✓							✓
Innoleo® NCO (neutralized castor oil)	✓							✓
Innoleo® PU (polyurethane grade castor oil)	✓							✓
Innoleo® HCO (hydrogenated castor oil)								
Innoleo® RA (ricinoleic acid)	✓		✓	✓	✓			
Innoleo® 12HSA (12-hydroxy stearic acid)								
Innolopol™ MCO (modified castor oil)					✓	✓	✓	✓
Innoleo® SA (sebacic acid)			✓					
Innoleate® HMR (methyl 12-hydroxy stearate)	✓			✓	✓			
Innoleate® MR (methyl ricinoleate)				✓	✓	✓		
Innoleate® GMR (glycerol ricinoleate)				✓	✓			
Innolamide™ NS (<i>n,n</i> ethylene bis 12-hydroxy stearamide)			✓					
Innoleate® DE-117 (di-methylheptyl succinate)						✓		
Innoleate® DE-217 (di-methylheptyl sebacate)						✓	✓	
Innoleate® DE-201 (di-methyl sebacate)						✓	✓	
Innoleate® DE-204 (di-butyl sebacate)						✓	✓	
Innoleate® DE-226 (di-ethylhexyl sebacate)						✓	✓	
Innoleate® SE-90 (polyhydroxy stearic acid)	✓			✓	✓			
Innoleate® SE-100 (stabilized ricinoleic acid)	✓		✓	✓				

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Innoleate® SE-105 (stabilized ricinoleic acid)	✓		✓	✓				
Innoleate® SE-200 (stabilized ricinoleic acid)	✓		✓	✓				
Innoleate® SE-210 (polyricinoleate ester)	✓		✓	✓	✓		✓	✓
Innoleate® SE-220 (polyhydroxy ester)	✓		✓	✓	✓		✓	✓
Innoleate® SE-230 (12-hydroxy stearic acid homopolymer)	✓		✓	✓				
Innoleate® SE-240 (ricinoleic acid homopolymer)	✓		✓	✓				
Innoleate® SE-250 (polyglycerol, polyricinoleate)	✓		✓	✓				
Innoleate® SE-300 (PEG-40 castor oil/glycerol ricinoleate blend)			✓	✓	✓			
Innoleate® SE-310 (PEG 40-hydrogenated castor oil /glycerol ricinoleate blend)			✓	✓				
Innoleate® SE-400 (glyceryl tri-acetyl 12-hydroxy stearate)	✓				✓	✓	✓	✓
Innolative™ SPS-PR (sodium petroleum sulfonate-RP grade)		✓	✓	✓				✓
Innolative™ SPS-E (sodium petroleum sulfonate-E grade)		✓	✓	✓				✓