



Leadership. Service. Flexibility. Success. **We're going further®.**

Metalworking & Lubricants





Metalworking and Lubricant Additives

At Pilot, our well-known, first-intent lubricant additives offer excellent corrosion inhibition and emulsification characteristics, with lower viscosities and improved handling features, than comparable natural sulfonates. The reason is our proprietary ice-cold sulfonation process. We manufacture the leading sulfonates for metalworking, corrosion inhibitor, emulsifier, demulsifier, and lubrication applications.

Specialty Additives				
Pilot produces a variety of specialty additives designed to enhance your metalworking and lubrication formulation				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Calamide® F	Oleamide DEA	Liquid/100%	Calamide® F is a co-emulsifier, corrosion inhibitor and lubricity agent in metal removal and metal forming fluids. Biodegradable and derived from natural and renewable resources.	Lubrication and metalworking formulations
Pilot® DABSA	Alkyl Aryl Sulfonic Acid	Liquid/80%	Pilot® DABSA is a high molecular weight sulfonic acid for neutralization to specialty sulfonates. Its acid form permits in situ neutralizations.	
Pilot® SXS-40	Sodium Xylene Sulfonate	Liquid/40%	Pilot® SXS-40 is a great solubilizer, coupling agent, cloud point depressant and viscosity reducer. Biodegradable.	

Alcohol Ethoxylates				
Nonionic chemistries characterized by high surface activity, and rapid biodegradability, to readily enhance your formulations				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Masodol® 91-2.5	C9-11 Alcohol Ethoxylate	Liquid/100%	Low HLB linear primary alcohol ethoxylate nonionic surfactant characterized by high surface activity, rapid biodegradability and low aquatic toxicity	Lubrication and metalworking formulations
Masodol® 1-3	C11 Alcohol Ethoxylate	Liquid/100%	Narrow-range linear primary alcohol ethoxylate nonionic surfactant characterized by high surface activity, rapid biodegradability, and low aquatic toxicity	
Masodol® 1-7	C11 Alcohol Ethoxylate	Liquid/100%	Narrow-range linear primary alcohol ethoxylate nonionic surfactant characterized by high surface activity, rapid biodegradability, and low aquatic toxicity	
Masodol® 25-7	C12-15 Alcohol Ethoxylate	Liquid/100%	Linear primary alcohol ethoxylate nonionic surfactant characterized by high surface activity, rapid biodegradability, and low aquatic toxicity	

Sulfonates				
Pilot Chemical's sulfonates are manufactured utilizing custom tailored first-intent alkylates which offer consistent emulsification, demulsifying characteristics, corrosion inhibition performance, and great handling properties that natural sulfonates cannot match.				
Product	Chemical Name	Physical Form/Activity	Features/Benefits	Application
Aristonate® C-5000	Neutral Calcium Sulfonate (EW=515)	Liquid/50%	Aristonate® C-5000 is a high performance corrosion inhibitor and demulsifier. It has a typical total base number, TBN of 5mgKOH/g and features great water rejection characteristics for hydraulic fluids and greases.	Lubrication, metalworking and coating formulations
Aristonate® S-2460	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=520)	Liquid/60%	Aristonate® S-2460 is a high molecular weight, and highly branched member of Pilot's newer generation of oil soluble sodium alkyl aryl sulfonates. Aristonate® S-2460 is a clear, dark brown, sodium sulfonate of relatively high viscosity, which finds use in a wide variety of applications where excellent corrosion protection, low foam, moderate emulsification, and lubricity is required.	
Aristonate® S-4000	Low Molecular Wt. Alkyl Aryl Sulfonate (MW=400)	Liquid/60%	Aristonate® S-4000 is a very efficient and low foaming emulsifier for soluble oils. It easily forms microemulsions generating the basis for semi-synthetic fluids.	
Aristonate® S-4600	High Molecular Wt. Alkyl Aryl Sulfonate (MW=460)	Liquid/60%	Aristonate® S-4600 is a high efficiency emulsifier with enhanced corrosion inhibition and low foam profile. It is a great utility sulfonate for soluble oils and semi-synthetics, and is well-suited for paraffinic and naphthenic base stocks.	
Aristonate® S-5000	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=500)	Liquid/60%	Aristonate® S-5000 is a corrosion inhibition agent with a low foam profile and good emulsification properties. It is well suited for semi-synthetics.	
Aristonate® H	High Molecular Wt. Alkyl Aryl Sulfonate (MW=470)	Liquid/60%	Aristonate® H is a corrosion inhibitor with good emulsification performance and has great iron and hard water tolerance.	
Aristonate® L	Low Molecular Wt. Alkyl Aryl Sulfonate (MW=400)	Liquid/60%	Aristonate® L is a high performance emulsifier for soluble oils.	
Aristonate® M	Medium Molecular Wt. Alkyl Aryl Sulfonate (MW=430)	Liquid/60%	Aristonate® M is a general utility and economical sulfonate that offers emulsification and corrosion protection.	
Aristonate® VH-2	Very High Molecular Wt. Alkyl Aryl Sulfonate (MW=520)	Liquid/60%	Aristonate® VH-2 is a strong corrosion inhibitor. It has good emulsification properties for soluble oils and semi-synthetics, used on paraffinic base stocks.	
Calfax® DB-45	Sodium C12 Branched Diphenyl Oxide Disulfonate	Liquid/45%	Calfax® DB-45 and Calfax® 16L-35 are specialty detergents that can increase the hard water tolerance of an emulsion without increasing foam tendencies. Offers excellent synergies with Aristonate® S-series products.	
Calfax® 16L-35	Sodium C16 Linear Diphenyl Oxide Disulfonate	Liquid/35%		
Calsoft® OS-45S	Sodium Oleic Sulfonate	Liquid/45%	Calsoft® OS-45S is an emulsifier and wetting agent with defoaming and anti-foam characteristics. It imparts corrosion resistance in many formulations and is a good solubilizer and dispersant. Biodegradable and derived from natural and renewable resources.	



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