

FUNCTIONAL PRODUCTS INC.
Innovative Chemistry for Lubricants

Components & Packages



Formulate from the package or do it yourself.

Complete additive packages and individual components for industrial lubricant formulations:

- Way Oil • Gear Oil • OGL • Hydraulic • Forestry
- AW/EP • Corrosion • Water • Foam • *and More*

Explore more options at functionalproducts.com

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Make it FUNCTIONAL

This brochure features our standard packages and chemistries: the products that have proven most useful across a wide range of formulators and industries.

After forty years, we've also built a much deeper toolbox of niche packages and tailor-made components for solving challenging formulation puzzles. If you're looking to break into a new market and don't see what you need here, contact us.

Our goal is to help you design, build, and test the next big thing in your lubricant development program.

Way Oil Packages

Way oil packages are carefully designed to provide low stick-slip and eliminate chatter on low-speed, heavily loaded machinery. Our latest generation **WA Series** products are highly filterable.

Product	wt%	Type	Chemistry	Applications	Add-Ons
WA-64	1.75%	Ashless	S/P/N/B	Slideway/way oils, general purpose machine oils	Tackifier *
WA-19	2.0%	Ashless	S/N	Legacy way oil technology package; economic	Tackifier
WA-60SF	1.5%	Ashless	P/N	Sulfur-free way oils in presence of yellow metals	Tackifier *

*DM-240 demulsifier sometimes used at 0.05-0.10wt% depending on base oil (I/II/III+) and coolant/tramp oil conditions.

Gear Oil Packages

Gear oils are demanding extreme pressure lubricants that serve in a wide range of conditions from industrial gearboxes to automotive lubricants or even greases.

Product	wt%	Type	Chemistry	Applications	Add-Ons
GA-360	2.0%	Zinc-Free	S/Ca	EP industrial gear, US Steel; oilfield	DM-240, DF-110
GA-360M	2.0%	Zinc-Free	S/Ca	EP industrial gear, AGMA; anti-micropitting	DM-240, DF-110
GA-549	3-10%	Ashless	S/P/N	Open gear oil package with high EP	None
GA-614	3.0%	Ashless	S/P/N	Top tier ashless EP lubricants and greases	None
GA-400	1.1%	Ashless	S/P/N	NSF HX-1 for light-duty gear	DM-400, DF-400

Hydraulic Fluid Packages

Antiwear hydraulic fluids can be easily prepared using a package and oil, or formulated into high VI hydraulic fluids using a viscosity modifier. See the **Viscosity Modifier Brochure** for options.

Product	wt%	Type	Chemistry	Applications	Add-Ons
GA-400	0.55%	Ashless	S/P/N	NSF HX-1 ashless hydraulic fluid package	DF-400, DM-400
HF-340	1.0%	Ashless	S/P/N	Economy ashless hydraulic package.	None
HF-580	2.0%	Ashless	S/P/N	Top tier ashless package; variable wt%	None
HF-595	2.2%	Ashless	S/P/N	Ecolabel LuSC-listed hydraulic package	DF-500, DM-400

Bar & Chain Oil Packages

Bar & chain oil packages are designed for high speed sliding wear of the chain with mild shock loading. These packages include antiwear, mild EP additives, corrosion inhibitors, and pour point depressant.

Product	wt%	Type	Chemistry	Applications	Add-Ons
BC-10	1.5%	Ashless	S/P/N	All season bar and chain package for petroleum oil	Tackifier
BC-15	1.5%	Ashless	S/P/N	All season bar and chain package for biobased oils	Tackifier

Rock Drill Oil Packages

Rock drill packages are designed for high shock loads to operate the hammering and drilling functions from heavy duty rock drill equipment down to pneumatic air tools.

Product	wt%	Type	Chemistry	Applications	Add-Ons
RD-350	1.8%	Ashless	S/P/N	Petroleum-based rock drill	--
RD-540	2.2%	Ashless	S/P/N	Biobased rock drill package – emulsifying	Tackifier
RD-540CP	2.4%	Ashless	S/P/N	Biobased rock drill package – demulsifying	Tackifier

Saw Guide Oil Packages

Saw guide oils are emulsifiable oils used to lubricate and cool saw mill operations. **FUNCTIONAL SGP** packages are optimized based on years of experience and proprietary testing to reduce saw overheat.

Product	wt%	Type	Chemistry	Applications	Add-Ons
SGP-567	1.5%	Ashless	S/P/N	Multipurpose saw guide and forestry oil package	Tackifier
SGP-563	1.5%	Ashless	Ca	Ecolabel-listed extra-low friction package	Tackifier

Dielectric Fluid and Transformer Oil Packages

FUNCTIONAL TF Series protects against the degradative effects of oxygen and moisture in the oil to protect the internal parts of the dielectric systems, transformers, and immersion cooling units.

Product	wt%	Type	Chemistry	Applications	Add-Ons
TF-20	3.0%	Ashless	N	Petroleum and PAO based fluids	None
TF-50	3.0%	Ashless	N	Vegetable oil and ester-based fluids	None

Pour Point Depressants for Petroleum Oils

FUNCTIONAL PD-600 series pour point depressants (PPDs) selectively treat petroleum wax. See the **Biobased & EAL Additives Brochure** or **Food Machinery Additives** for specialty PPD options.

Product	wt%	Chemistry	Application Note
PD-610	0.3%	PMA	Group I/II oils above 220 SUS (ISO 46); naphthenic oils above 750 SUS
PD-620	0.3%	PMA	Light Group I/II/III oils; 150 SUS (ISO 32) and below
PD-630	0.3%	PMA	Light to heavy Group III oils (4/6/8 cSt Group III)
PD-600	0.3wt%	PMA-free	Highly effective PPD for paraffinic oils; PMA-free, no ester functionality

Corrosion Inhibitors

Corrosion inhibitors prevent rust in methods like ASTM D665 or yellow metal corrosion in ASTM D130

Product	wt%	Chemistry	Applications	Use With
CI-291	0.05%	N	Copper corrosion inhibitor	Petroleum, Ester, PAG
CI-426	0.2%	P/N	Our standard lower cost amine phosphate; NSF HX-1	
CI-427	0.2%	P/N	Alternate amine phosphate, CAS# 80939-62-4; NSF HX-1	
CI-428	0.2%	P/N	Higher TBN CI-427 ; vapor phase corrosion inhibition (VPCI)	
CI-408	0.5%	Proprietary	Ferrous corrosion inhibitor for glycol/water blends	Glycol/Water
CI-498	0.2%	Proprietary	Ferrous corrosion inhibitor for water lubricants; NSF HX-1	Water

Antiwear and Extreme Pressure

Antiwear and EP additives modify the wear and friction occurring at various operating loads.

Product	wt%	Chemistry	Applications	Use With
AW-116	0.5%	P/N	Amine phosphate tuned for AW/EP performance; NSF HX-1	Petroleum, Ester, PAG
AW-354	0.5%	P	Phosphate ester for AW, limited slip, and micropitting.	
CI-426EP	2.0%	S/P/N	Enhanced amine phosphate for extra EP; NSF HX-1	
AW-487	0.5%	Na	Aqueous anti-wear and lubricity additive	Water

Demulsifiers

Demulsifiers improve the separation of oil and water and are tested by ASTM D1401, ASTM D2711, etc.

Product	wt%	Chemistry	Applications	Use With
DM-240	0.1%	PAG	Highly effective industrial PAG-based demulsifier	Petroleum, Ester, PAG
DM-400	0.1%	Sulfonate	Versatile sulfonate-based demulsifier; NSF HX-1	
DM-410	0.2%	PAG	Effective food machinery demulsifier; NSF HX-1	
DM-810	0.2%	PAG	Separates oil from water-based lubricants	Water, water-glycol

Defoamers

Defoamers reduce the formation and stability of foam in methods like ASTM D892.

Product	wt%	Chemistry	Applications	Use With
DF-110	0.1%	Silicone	Silicone defoamer balanced for synthetic oils	Hydrocarbons, Ester, PAG
DF-130	0.1%	Silicone	Silicone defoamer tuned for high temperature foam	
DF-400	0.1%	Silicone	Versatile silicone defoamer; Ecolabel, NSF HX-1	
DF-500	0.1%	Acrylate	Acrylate-based defoamer for vegetable oils; Ecolabel	Fatty Esters / Veg Oil

Not finding exactly what you need?
We can help you navigate your options –
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