FUNCTIONAL PRODUCTS INC.
Innovative Chemistry for Lubricants

2023 Applications Chart

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Tackifiers

Product	Description	Typical Viscosity cSt @ 100C	Treat Level wt %	Lubricant Oil	Greases	Bar & Chain	Gear Oil	Hydraulics	Engine Oil	Metalworking	Biobased	NSF HX-1	Ecolabel LuSC
V-176	Versatile PIB tackifier for all applications in industrial lubricants and greases.	3,000	0.5 – 2	●	●	●				●			
V-178	High strength, efficient PIB tackifier best suited for machining oils and slideway lubricants.	4,000	0.5 – 2	●	●	●				●			
V-177	Concentrated heavy duty PIB tackifier specialized for greases, coatings, and rust preventatives.	10,500	0.5 – 2	●	●	●				●			
V-298	Clear and colorless PIB tackifier for textile oils or other lubricants that require no color/staining.	4,000	0.5 – 2	●	●	●				●			
PARATAC	Legacy PIB tackifier with long-standing OEM approvals.	3,000	0.5 – 2	●	●	●	●			●			
V-188	Specialty OCP tackifier for increased shear and thermal stability in gear oil. NSF HX-1 and Ecolabel versions available.	4,000	0.5 – 2	●	●		●			●	●	●	●
V-422	Incidental food contact PIB tackifier for NSF H1 lubricants and greases.	3,000	0.5 – 2	●	●					●		●	
V-584	Unique bio tackifier for vegetable oil and esters. NSF HX-1 and Ecolabel LuSC.	2,500@40°C	3 – 10	●	●					●	●	●	●
V-802P	Aqueous tackifier for water and emulsion lubricants. Compatible in certain glycol or PAG.	40,000@40°C	0.3 – 5					●		●			
V-870	Clear and colorless tackifier and anti-mist agent for silicone oils, lubes, and greases.	8,500	0.2 -- 4	●	●	●	●			●			

Viscosity Modifiers & Base Stocks

Product	Description	Shear Stability Index (SSI)	Thickening Efficiency in ISO 32, cSt @ 100C	Typical Viscosity cSt @ 100C	Treat Level wt %	Lubricant Oil	Greases	Bar & Chain	Gear Oil	Hydraulics	Engine Oil	Metalworking	Biobased	NSF HX-1	Ecolabel LuSC
V-158F	Liquid OCP viscosity modifier. **V-158FN** in naphthenic, **V-158P2** in PAO.	50	10% = 12.5	1,600	5 – 10	●	●			●	●	●			
V-166	Liquid OCP viscosity modifier.	35	10% = 11.4	1,200	5 – 10	●	●			●		●			
V-160F	Liquid OCP viscosity modifier. **V-460** for NSF HX-1. **V-160P2** in PAO.	22	10% = 13.7	3,000	5 – 10	●	●			●		●		●	
V-705	High performance low temp base stock for VHVI HF. (KRL shear loss = 4%)	0	10% = 20.3	6,500	2 – 20	●	●			●	●	●	●		
V-515	Liquid bio viscosity modifier for vegetable oil and PAO/ester blends. Slight tack.	50	10% = 12.0	8,000	5 – 15	●	●					●	●		●
V-521	Liquid bio viscosity modifier for vegetable oil, esters. Exceptional low temperature flow.	30	10% = 16.4	5,000	5 – 15		●					●	●		
V-508F	Liquid bio viscosity modifier for vegetable oil, esters. Widest compatibility in esters.	28	10% = 22.9	7,000	5 – 15		●		●			●	●	●	
MH-4500	PMA viscosity modifier for general use (KRL shear loss = 65%)	15	10% = 12.3	1,500	5 – 20	●	●		●	●		●			
MH-2000	PMA viscosity modifier for industrial hydraulic oils (KRL shear loss = 35%)	1	10% = 11.1	1,000	5 – 20	●	●			●		●			
MB-1010	PMA base stock for gear oils and full synthetic lubes (KRL shear loss = 15%)	0	10% = 8.6	900	5 – 20	●	●		●	●		●			
V-201	Pellet form OCP viscosity modifier, highly efficient. 5.4wt% = 1000 cSt @ 100°C	60	1% = 21.0	Pellet	0.5 – 2	●	●		●			●			
V-255	Pellet form shear stable OCP viscosity modifier. 12% = 1000 cSt @ 100°C	25	1% = 10.5	Pellet	0.5 – 2	●	●			●	●				
V-820	Water soluble powder to thicken water-based lubricants, emulsions.	N/A	0.5% = ISO 100	Powder	0.1 – 2		●					●		●	

Grease Additives

Product	Description	Treat Level wt %	Lubricant Oil	Greases	Bar & Chain	Gear Oil	Hydraulics	Engine Oil	Metalworking	Biobased	NSF HX-1	Ecolabel LuSC
V-207	Powder polymer for water resistance, shear stability, and tack. Best for calcium and aluminum greases. **V-211** for NSF HX-1.	0.5 – 2		●							●	
V-4020	Reactive pellet polymer to improve water resistance. Best for lithium and lithium complex greases.	0.2 – 1		●								
V-4004A	Pre-dissolved liquid reactive grease polymer; Ecolabel LuSC options availale.	3 – 5		●						●		●
V-191	Polymer emulsion stable against water during and after production. Improved water spray-off and tack. Best for clay or silica greases.	0.5 – 2		●					●	●		
V-4700	Liquid polymer for improving water resistance of synthetic-based greases (mPAO, PB, etc.) which don't respond to other options.	1 – 5		●								
V-4055	Concentrated viscosity modifier to replace heavy synthetic base stocks (mPAO) and improve water resistance, yield, adhesion, and tack.	5 – 10	●	●								

Specialty Packages & Additives

Product	Description	Treat Level wt %	Lubricant Oil	Greases	Bar & Chain	Gear Oil	Hydraulics	Engine Oil	Metalworking	Biobased	NSF HX-1	Ecolabel LuSC
CI-426	Corrosion inhibitor and anti-wear additive for HX-1. **CI-427** for low color and wide read-across. **CI-426EP** for improved EP.	0.5 – 2	●	●	●	●	●	●	●		●	
GA-307	Economical zinc-free gear oil package with excellent corrosion resistance. **GA-614** for top tier ashless gear. **GA-400** for NSF HX-1.	3 – 8	●	●		●					●	
HF-595	Biobased ashless AW hydraulic fluid package; Ecolabel LuSC. **HF-580** for top tier ashless industrial HF, variable treat.	2.2	●				●			●		●
RD-540	Biobased rock drill, air tool, and open gear package; emulsfying. **RD-540CP** for demulsifying.	2.2	●	●	●	●				●		
WA-64	Light color, low odor, compatible in a range of base oils. Cincinnati Fives stick-slip test. **WA-60SF** for colorless sulfur-free way oils.	1.75	●						●			
SGP-563	Low friction AW/R&O package for saw/chain/forestry; reduced operating temperatures; Ecolabel LuSC. **SGP-567** for more AW/EP.	1.5	●	●	●							●
V-162	Anti-mist additive for petroleum oils and does not add tackiness. Use **MW-612** for aqueous or oil-water fluids.	0.02 – 0.1				●			●			
DF-500	Defoamer for veg oil, fatty esters; Ecolabel LuSC. **DF-400** is NSF HX-1 and Ecolabel LuSC for petroleum/ester. **DF-110** for Gr. III and IV.	0.05 – 0.5	●	●		●	●	●	●	●	●	●
PD-585	Pour point depressant for vegetable oil; Ecolabel LuSC, US EPA Safer Choice. **PD-590** for low viscosity. **PD-571** economy biobased PPD.	0.1 – 1	●	●		●	●		●	●		●
PD-620	Pour point depressant for light Gr. I/II paraffinic oils. **PD-610** for medium to heavy Gr. I/II oils. **PD-630** for Gr. III oils.	0.1 – 0.5	●	●		●	●	●	●			

Purchasing Information

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