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Liquid Flowable Systems Product Guide

For more information on our products, go to www.stepan.com/Markets/Agricultural_Solutions_Digital_Tool_Box.aspx

STEPAN AGRICULTURAL SOLUTIONS LEVERAGES THE COMPANY’S CORE TECHNOLOGIES OF SULFONATION, ALKOXYLATION, AMIDATION, OXIDATION, QUATERNIZATION, AND POLYMERIZATION TO DELIVER A COMPLETE LINE OF PRODUCTS TO OUR CUSTOMERS. STEPAN’S GEOGRAPHIC FOOTPRINT AND GLOBAL DISTRIBUTION NETWORK IS SUCH THAT WE CAN SERVE OUR GLOBAL CUSTOMERS FROM A VARIETY OF MANUFACTURING LOCATIONS. IN ADDITION, OUR IN-HOUSE FORMULATION EXPERTISE PROVIDES A VALUE-ADDED SERVICE TO HELP SOLVE CUSTOMERS’ MOST DIFFICULT CHALLENGES. TO HELP MEET EVER-CHANGING MARKET NEEDS, **STEPAN AGRICULTURAL SOLUTIONS** HAS A ROBUST PIPELINE OF INNOVATIVE NEW PRODUCTS. STEPAN OFFERS DISPERSANTS AND WETTING AGENTS THAT PROVIDE FLEXIBILITY WHEN FORMULATING END-USE PESTICIDE PRODUCTS.



Polymeric	Alcohol Ethoxylates	MAKON TD-12	Phosphate Esters	EO/PO Block Copolymers	STEOL CS-370
STEP-FLOW® 3000	BIO-SOFT N1-3	MAKON TD-18	STEPFAC™ 3675	STEP-FLOW 26	STEOL CS-460
STEP-FLOW 4000	BIO-SOFT N1-5	MAKON TD-3	STEPFAC 8170-U	STEP-FLOW 26-18	STEOL TSP-16N
Blends	BIO-SOFT N1-7	MAKON TD-50	STEPFAC 8171	STEP-FLOW 26 F	STEOL TSP-16N-60
AGENT SCB-1*	BIO-SOFT N1-9	MAKON TD-6	STEPFAC 8175	STEP-FLOW 1500	STEPWET® DF-95
AGENT SCB-2*	BIO-SOFT N23-3	MAKON TD-8	STEPFAC 8180	TOXIMUL® 8315	Sulfosuccinate Salts
STEPSPERSE® DF-200	BIO-SOFT N23-6.5	MAKON TD-9	STEPFAC 8181	TOXIMUL 8320	STEPWET DOS 60-IP
STEPSPERSE DF-400	BIO-SOFT N25-12	Polyarylphenol Alkoxylates	STEPFAC 8181 PT3K	TOXIMUL 8321	STEPWET DOS 60-OE*
STEPSPERSE DF-500	BIO-SOFT N25-3	MAKON TSP-12	STEPFAC 8181 K	TOXIMUL 8322	STEPWET DOS 60-ROE*
STEPSPERSE DF-600	BIO-SOFT N25-7	MAKON TSP-16	STEPFAC 8181-E	TOXIMUL 8323	STEPWET DOS 64A-150ND*
Sulfonate Salts	BIO-SOFT N25-9	MAKON TSP-20	STEPFAC 8182	TOXIMUL 8325	STEPWET DOS 70
BIO-SOFT® N-300	BIO-SOFT N91-2.5	MAKON TSP-25	STEPFAC TSP-PE	TOXIMUL 8350*	STEPWET DOS 70-DG
BIO-SOFT N-411	BIO-SOFT N91-6	MAKON TSP-25F*	STEPFAC TSP-PE K	Sulfates	STEPWET DOS 70-EA
BIO-TERGE® AS-90 Beads	BIO-SOFT N91-8	MAKON TSP-40 N	STEPFAC TSP-PE N	STEOL® CA-330-E	STEPWET DOS 70-PG
NINATE® 411	BIO-SOFT NC-10	MAKON TSP-40F*	STEPFAC TSP-PE N-60	STEOL CA-460	
STEPWET® DF-90	MAKON® DA-4	MAKON TSP-60		STEOL CS-270 C	
	MAKON DA-6	MAKON TSP-60F*		STEOL CS-330 HP	
	MAKON DA-9				

**Experimental products
For more information on commercial status, please contact your Stepan sales representative.*

PRODUCT OVERVIEW

TYPICAL PROPERTIES

*SC = Suspension Concentrate, SE = Suspo-Emulsion, OD = Oil Dispersion, FS = Flowable Concentrate, WG = Water Dispersible Granules, WP = Wettable Powder, PD = Primary Dispersant, Co-Dispersant/Wetting Agent = CD/WA, Wetting Agent = WA

POLYMERICS						
TRADE NAME	CHEMICAL DESCRIPTION	ACTIVE %	FORM @ 25°C	DENSITY, G/ML @ 25°C	HLB	U.S. EPA CLEARANCE
STEP-FLOW 3000	Polymethyl Methacrylate-Polyethylene Glycol Graft Copolymer	40	Clear Liquid	1.10	12	40 CFR 180.910 40 CFR 180.930
STEP-FLOW 4000	Polymethyl Methacrylate-Polyethylene Glycol Graft Copolymer	35	Liquid	1.07	11-12	40 CFR 180.910 40 CFR 180.930 40 CFR 180.940a

BLENDS						
TRADE NAME	CHEMICAL DESCRIPTION	FORM @ 25°C	DENSITY, G/ML @ 25°C	Moisture %	NPE FREE*	U.S. EPA CLEARANCE
Agent SCB-1	Dispersant /Wetting Agent Blend	Liquid	1.09	0.5 max	Yes	TBD
Agent SCB-2	Dispersant /Wetting Agent Blend	Liquid	1.11	0.5 max	Yes	TBD
STEPSPERSE DF-200	Anionic*/Lignosulfonate Blend	Powder	0.21	6	No	40 CFR 180.910
STEPSPERSE DF-400	Nonionic/Lignosulfonate Blend	Powder	0.28	6	Yes	40 CFR 180.910 40 CFR 180.930
STEPSPERSE DF-500	Anionic/Lignosulfonate Blend	Powder	0.37	6	Yes	40 CFR 180.910 40 CFR 180.930
STEPSPERSE DF-600	Nonionic/Lignosulfonate Blend	Powder	0.37	6	Yes	40 CFR 180.910 40 CFR 180.930

*Free of nonylphenol and nonlyphenol ethoxylates based on the chemistry identified.

SULFONATE SALTS							
TRADE NAME	CHEMICAL DESCRIPTION	ACTIVE %	FORM @ 25°C	DENSITY, G/ML @ 25°C	VISCOSITY, CPS @ 25°C	HLB	U.S. EPA CLEARANCE
BIO-SOFT N-300	Linear Triethanolamine Dodecyl Benzene Sulfonate	60	Liquid	1.08	2,238	-9	40 CFR 180.920 40 CFR 180.930
BIO-SOFT N-411	Linear Isopropyl Amine Dodecyl Benzene Sulfonate	90	Liquid	1.02	5,500	3	40 CFR 180.920 40 CFR 180.930
BIO-TERGE AS-90 Beads	Sodium C14-16 Olefin Sulfonate	88	Beads/ Powder	0.30	-	-	40 CFR 180.910
NINATE 411	Isopropylamine Dodecyl Benzene Sulfonate	88	Liquid	1.02	5,500	-	40 CFR 180.920, 180.930
STEPWET DF-90	Sodium Dodecylbenzene Sulfonate	100	Powder	0.53	-	-	40 CFR 180.910, 180.930, 180.940c

POLYMERICS								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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LIGNOSULFONATE BLENDS								
FORMULATION TYPE*								
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SULFONATE SALTS								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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POLYARYLPHENOL ALKOXYLATES							
TRADE NAME	CHEMICAL DESCRIPTION	FORM @ 25°C	DENSITY, G/ML @ 25°C	VISCOSITY, CPS @ 25°C	POUR POINT, °C	HLB	U.S. EPA CLEARANCE
MAKON TSP-12	Tristyrylphenol Ethoxylate, POE-12	Liquid	1.10	426	19	12	40 CFR 180.910 (<15% in pesticide)
MAKON TSP-16	Tristyrylphenol Ethoxylate, POE-16	Liquid	1.11	920	19	13	40 CFR 180.910 40 CFR 180.920 (<15% in pesticide)
MAKON TSP-20	Tristyrylphenol Ethoxylate, POE-20	Paste	1.09 (@ 50°C)	310 (@ 50°C)	30	14	40 CFR 180.910 40. CFR 180.920 (<15% in pesticide)
MAKON TSP-25	Tristyrylphenol Ethoxylate, POE-25	Solid	1.08 (@ 50°C)	220 (@ 50°C)	40	15	40 CFR 180.910 40 CFR 180.920 (<15% in pesticide)
MAKON TSP-25F	Polyarylphenol Alkoxylate, POE-25	Liquid	1.11	1,190	8	-	40 CFR 180.960
MAKON TSP-40 N	Tristyrylphenol Ethoxylate, POE-40	Solid	1.09 (@ 50°C)	465 (@ 50°C)	35	16	40 CFR 180.910 (<15% in pesticide)
MAKON TSP-40F	Polyarylphenol Alkoxylate, POE-40	Liquid	1.10	1,200	19	-	40 CFR 180.960
MAKON TSP-60	Tristyrylphenol Ethoxylate, POE-60	Solid	1.09	310 (@ 50°C)	44	18	40 CFR 180.910 40 CFR 180.920 (<15% in pesticide)
MAKON TSP-60F	Polyarylphenol Alkoxylate, POE-60	Liquid	1.11	2,150	21	-	40 CFR 180.960

POLYARYLPHENOL ALKOXYLATES								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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PHOSPHATE ESTERS							
TRADE NAME	CHEMICAL DESCRIPTION	ACTIVE %	FORM @ 25°C	DENSITY, G/ML @ 25°C	VISCOSITY, CPS @ 25°C	POUR POINT °C	U.S. EPA CLEARANCE
STEPFAC 3675	Ethoxylated Phosphate Ester	70	Liquid	1.14	190	-21	Non-Food Only
STEPFAC 8170-U	Nonylphenol Ethoxylate Phosphate Ester, POE-10	100	Liquid	1.12	3,070	-2	40 CFR 180.910 40 CFR 180.930 (<7% in pesticide)
STEPFAC 8171	Nonylphenol Ethoxylate Phosphate Ester, POE-6	100	liquid	1.11	9400	-18	40 CFR 180.910, 180.930 (<7% in pesticide)
STEPFAC 8175	Nonylphenol Ethoxylate Phosphate Ester, POE-12	100	liquid	1.12	2370	-4	40 CFR 180.910 (<7% in pesticide)
STEPFAC 8180	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-3	100	Liquid	1.03	760	-18	40 CFR 180.910 40 CFR 180.920 40 CFR 180.930 (<30% in pesticide)
STEPFAC 8181	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-6	100	Liquid	1.06	845	-16	40 CFR 180.910 40 CFR 180.920 40 CFR 180.930 (<30% in pesticide)
STEPFAC 8181 PT3K	Potassium Phosphate Ester	100	liquid	1.06	1200	4	40 CFR 180.910, 180.920, 180.930 (<30% in pesticide)
STEPFAC 8181 K	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-6	50-55	Clear Liquid	1.06	560	-24	40 CFR 180.910 40 CFR 180.930 (<83% in pesticide)
STEPFAC 8182	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-1	100	Liquid	1.06 (@ 50°C)	210 (@ 50°C)	6	40 CFR 180.910 40 CFR 180.920 40 CFR 180.930 (<30% in pesticide)
*Alkylphenol based							
STEPFAC TSP-PE	Tristylphenol Ethoxylate, POE-16 Phosphate Ester	98	Liquid	1.14	4,500	4	40 CFR 180.920 (<15% in pesticide)
STEPFAC TSP-PE K	Tristylphenol Ethoxylate, POE-16 Phosphate Ester Potassium Salt	40	Liquid	1.11	245	0	40 CFR 180.920 (<15% in pesticide)
STEPFAC TSP-PE N	Tristylphenol Ethoxylate, POE-16 Phosphate Ester Triethanolamine Salt	98	Liquid	1.15	4,000	5	Non-Food Only
STEPFAC TSP-PE N-60	Tristylphenol Ethoxylate, POE-16 Phosphate Ester Triethanolamine Salt	60	Clear Amber Liquid	1.1	-	-	Non-Food Only

PHOSPHATE ESTERS								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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EO/PO BLOCK COPOLYMERS							
TRADE NAME	CHEMICAL DESCRIPTION	FORM @ 25°C	DENSITY, G/ML @ 25°C	VISCOSITY, CPS @ 25°C	POUR POINT, °C	HLB	U.S. EPA CLEARANCE
STEP-FLOW 26	Polyalkylene Oxide Block Copolymer	Paste	1.04 (@ 50°C)	640 (@ 50°C)	32	13	40 CFR 180.940a 40 CFR 180.940c 40 CFR 180.960
STEP-FLOW 26-18	Polyalkylene Oxide Block Copolymer	Liquid	1.01-1.03 (@ 20°C)	20 (@ 20°C)	-	-	40 CFR 180.920
STEP-FLOW 26 F	Polyalkylene Oxide Block Copolymer	Liquid	1.04	3,750	7	13	40 CFR 180.940a 40 CFR 180.940c 40 CFR 180.960
STEP-FLOW 1500	Tristyrylphenol Polyalkylene Oxide Block Copolymer	Liquid	1.10	800	4	17	40 CFR 180.960
TOXIMUL 8315	Butyl Polyalkylene Oxide Block Copolymer	Liquid	1.05	555	3	15	40 CFR 180.960
TOXIMUL 8320	Butyl Polyalkylene Oxide Copolymer	Liquid	1.05	2,000	21	14	40 CFR 180.960
TOXIMUL 8321	Polyalkylene Oxide Block Copolymer	Liquid	1.03	900	2	7	40 CFR 180.940a 40 CFR 180.940c 40 CFR 180.960
TOXIMUL 8322	Polyalkylene Oxide Block Copolymer	Paste	1.06 (@ 50°C)	720 (@ 50°C)	35	15	40 CFR 180.940a 40 CFR 180.940c 40 CFR 180.960
TOXIMUL 8323	Polyalkylene Oxide Block Copolymer	Paste	1.04 (@ 50°C)	315 (@ 50°C)	27	15	40 CFR 180.940a 40 CFR 180.940c 40 CFR 180.960
TOXIMUL 8325	Butyl Polyalkylene Oxide Block Copolymer	Liquid	1.05	620	26	14	40 CFR 180.960
TOXIMUL 8350	Butyl Polyalkylene Oxide Block Copolymer	Liquid	1.05	840	21	14	40 CFR 180.960

SULFATES							
TRADE NAME	CHEMICAL DESCRIPTION	ACTIVE %	FORM @ 25°C	DENSITY, G/ML @ 25°C	VISCOSITY, CPS @ 25°C	POUR POINT °C	U.S. EPA CLEARANCE
STEOL CA-330-E	Ammonium Lauryl Ether Sulfate, POE-3	25	Liquid	1.07	100	2	40 CFR 180.920
STEOL CA-460	Ammonium Lauryl Ether Sulfate, POE-3	59	Liquid	1.01	66	4	Non-Food Only
STEOL CS-270 C	Sodium Lauryl Ether Sulfate, POE-2	70	Paste	1.08	4,200	50	40 CFR 180.910, 180.930 (not to exceed 42%)
STEOL CS-330 HP	Sodium Lauryl Ether Sulfate, POE-3	28.5	Liquid	1.03	100	1	40 CFR 180.910, 180.930
STEOL CS-370	Sodium Lauryl Ether Sulfate, POE-3	70	Liquid	1.06	987	-1	40 CFR 180.910, 180.930 (not to exceed 42%)
STEOL CS-460	Sodium Lauryl Ether Sulfate, POE-3	59.4	Liquid	1.06	55	-1	40 CFR 180.910, 180.930 (not to exceed 50%)
STEOL TSP-16N	Ethoxylated Polyarylphenol Sulfate, Ammonium Salt	93	Liquid	1.15	8,600	6	40 CFR 180.920 (<15% in pesticide)
STEOL TSP-16N-60	Ethoxylated Polyarylphenol Sulfate, Ammonium Salt	60	Liquid	1.10	480	-12	40 CFR 180.920 (<15% in pesticide)
STEPWET DF-95	Sodium Lauryl Sulfate	100	Powder	0.48	-	-	40 CFR 180.910, 180.930, 180.940a, 180.940b, 180.940c

EO/PO BLOCK COPOLYMERS								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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Co-Dispersant/Wetting Agent = CD/WA
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SULFATES								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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SULFOSUCCINATE SALTS							
TRADE NAME	CHEMICAL DESCRIPTION	ACTIVE %	FORM @ 25°C	DENSITY, G/ML @ 25°C	VISCOSITY, CPS @ 25°C	POUR POINT °C	U.S. EPA CLEARANCE
STEPWET DOS 60-IP	Sodium Dioctyl Sulfosuccinate	58	Liquid	1.03	94	-22	40 CFR 180.910, 180.930, 180.940c
STEPWET DOS 60 OE	Sodium Dioctyl Sulfosuccinate	60	Liquid	1.02	220	-18	40 CFR 180.910, 180.930
STEPWET DOS 60 ROE	Sodium Dioctyl Sulfosuccinate	60	Liquid	0.99	760	-17	40 CFR 180.910
STEPWET DOS 64A-150ND	Sodium Dioctyl Sulfosuccinate	64	Liquid	1.03	92.75	-66	40 CFR 180.910, 180.930, 180.940c
STEPWET DOS 70	Sodium Dioctyl Sulfosuccinate	70	Liquid	1.05	200	<0	40 CFR 180.910, 180.930, 180.940c
STEPWET DOS 70-DG	Sodium Dioctyl Sulfosuccinate	70	Liquid	1.10	358	-43	40 CFR 180.920
STEPWET DOS 70-EA	Sodium Dioctyl Sulfosuccinate	70	Liquid	1.08	220	-29	40 CFR 180.910, 180.930, 180.940c
STEPWET DOS 70-PG	Sodium Dioctyl Sulfosuccinate	70	Liquid	1.10	375	-39	40 CFR 180.910, 180.930, 180.940a

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SULFOSUCCINATE SALTS								
FORMULATION TYPE*								
SC	SE	OD	FS	WG	WP	PD	CD/WA	WA
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We welcome you to engage with one of our Stepan representatives in effort to outline your global regulatory and supply chain requirements. Please note: It is the responsibility of the end user to review the chemical control regulations for each country where the end product is intended to be sold or used. For REACH registration status inquiries, please contact Stepan Europe Technical Service at tech.service@stepaneurope.com. For other country clearances, consult the product Safety Data Sheet (SDS) or contact Stepan Technical Service at techserv@stepan.com.