

Phosphate Esters

Product Overview

Stepan Agricultural Solutions offers a complete line of tridecyl alcohol ethoxylate and tristyrylphenol ethoxylate-based phosphate esters with an array of ethoxylation, mono- and di-ester ratios and neutralization agents. Stepan Company's manufacturing capabilities allow for a wide range of customized phosphate esters to meet the growing demands of formulators.

Trade Name	CAS No. (Alt. CAS No.)	Chemical Description	Actives, %	pH ¹	Appearance at 25°C	Denisty, g/ml at 25°C	Flash Point, PMCC, °C	Pour Point, °C	Viscosity at 25°C, cps	U.S. EPA ² Clearances
STEPFAC™ 3675	68610-21-9 (68130-47-2)	Ethoxylated Alcohol Phosphate Ester	70	2.0	Clear Liquid	1.14	>70	-21	190	Non-Food Use Only
STEPFAC 8180	9046-01-9 (78330-24-2)	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-3	100	2.6	Hazy Liquid	1.03	>94	<-18	760	40 CFR 180.910 40 CFR 180.920 40 CFR 180.930
STEPFAC 8181	9046-01-9 (78330-24-2)	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-6	100	2.4	Hazy Liquid	1.06	>94	<-16	845	40 CFR 180.910 40 CFR 180.920 40 CFR 180.930
STEPFAC 8181 K	261627-68-3	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-6, Potassium Salt	100	6.0 - 7.0	Clear Liquid	1.06	>94	<-18	650	40 CFR 180.910 40 CFR 180.930
STEPFAC 8181 PT3K	261627-68-3	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-6, Potassium Salt	100	4.0 - 7.0	Hazy Liquid	1.07	>94	<-18	1150	40 CFR 180.910 40 CFR 180.930
STEPFAC 8182	9046-01-9 (78330-24-2)	Tridecyl Alcohol Ethoxylate Phosphate Ester, POE-12	100	2.5	White Paste	1.06	>94	6	210 ³	40 CFR 180.910 40 CFR 180.920
STEPFAC 8170-U	51811-79-1 (68412-53-3/ 7664-38-2)	Nonylphenol Ethoxylate Phosphate Ester, POE-10	100	2.0	Clear Amber Liquid	1.12	>94	-2	3070	40 CFR 180.910 40 CFR 180.930
STEPFAC 8171	51811-79-1 (68412-53-3/ 7664-38-2)	Nonylphenol Ethoxylate Phosphate Ester, POE-6	100	2.0	Clear Amber Liquid	1.11	>94	<-18	9400	40 CFR 180.910 40 CFR 180.930
STEPFAC 8175	51811-79-1 (68412-53-3/ 7664-38-2)	Nonylphenol Ethoxylate Phosphate Ester, POE-12	100	2.0	Clear Amber Liquid	1.12	>94	-4	2370	40 CFR 180.910 40 CFR 180.930
STEPFAC TSP-PE	114535-82-9 (90093-37-1)	Tristyrylphenol Alcohol Ethoxylate, POE-16, Phosphate Ester	98	2.0	Hazy Yellow Liquid	1.14	>94	4	4500	40 CFR 180.920
STEPFAC TSP-PE K	163436-84-8	Tristyrylphenol Alcohol Ethoxylate, POE-16, Phosphate Ester, Potassium Salt	100	8.0	Yellow Liquid	1.11	>94	0	245	40 CFR 180.920
STEPFAC TSP-PE N	105362-40-1	Tristyrylphenol Alcohol Ethoxylate, POE-16, Phosphate Ester, Triethanolamine Salt	98	7.6	Hazy Yellow Liquid	1.15	>94	5	4000	Non-Food Use Only

¹ Measured at 5% in H₂O

² U.S. EPA: United States Environmental Protection Agency

³ Measured at 50°C

Compatibility

Stepan's phosphate esters can be used as compatibility aids to help improve the compatibility of liquid fertilizers with various types of pesticides, either as an "in-can" aid or as a "tank mix."



Tank Mix Formulation Example

Component	Amount (wt%)
30-0-0 Liquid Fertilizer	94.00
S-Metolochlor EC	3.00
Atrazine 4L	2.00
STEPFAC 8181 or STEPFAC 8181K	1.00

Formulation Examples

Propanil 360 g/L Emulsifiable Concentrate

Component	Amount (wt%)
Propanil	36.00
STEPFAC 8170	3.10
Other Surfactants	6.10
Solvent	54.80

Metribuzin and S-Metolochlor Emulsifiable Concentrate

Component	Amount (wt%)
Metribuzin	58.20
S-Metolochlor	13.80
STEPFAC 8171	4.66
Other Surfactants	8.29
Solvent	15.06

Bifenthrin 200 g/L Emulsifiable Concentrate

Component	Amount (wt%)
Bifenthrin	20.00
STEPFAC TSP-PE	10.00
Solvent	70.00

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