

DePHOS 8028

DePHOS 8028 is an anionic, 80% active, potassium salt of ethoxylated, phosphated 2-ethylhexanol with CAS# 68238-84-6. This low- to-moderate foaming, multifunctional phosphate ester exhibits a wide variety of properties including multi-metal corrosion inhibition, lubricity, detergency, wetting, hydrotrope, and scale inhibition.

SPECIFICATIONS

Appearance @ 25°C:	Clear to slightly hazy liquid
% Activity:	79% min.
pH (5% in DI water):	6.5 -7.2
Color (APHA / Gardner):	100 max. / 1max.
% Moisture:	20% max.

SOLUBILITY (10% by weight): DePHOS 8028 is soluble in water, alcohols, glycols, aromatic and chlorinated solvents. It is dispersible or insoluble in aliphatic solvents or oils.

TYPICAL PROPERTIES

Density @ 25°C ~1.12 g/ml

- High performance detergent, emulsifier, and hydrotrope
- Excellent wetting properties
- Antistat properties
- Low to moderate foam
- Corrosion and scale inhibitor
- Dispersant
- Cost effective
- Biodegradable
- Stable in hydrogen peroxide
- Hydrotrope

APPLICATIONS

- Low foam alkaline and acid cleaners
- Peroxide-based cleaners
- Scouring agents
- Synthetic cooling and cutting fluids
- Corrosion inhibitor in aerosol cans
- Emulsion cleaners
- Textile wetting agent
- Dry cleaning detergents
- Pigment dispersant
- Down hole applications

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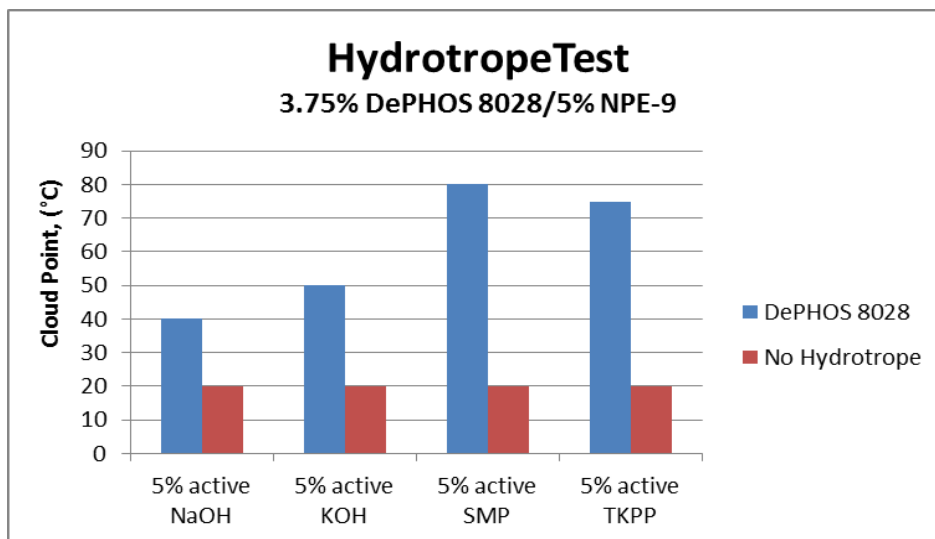
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APPLICATION DATA

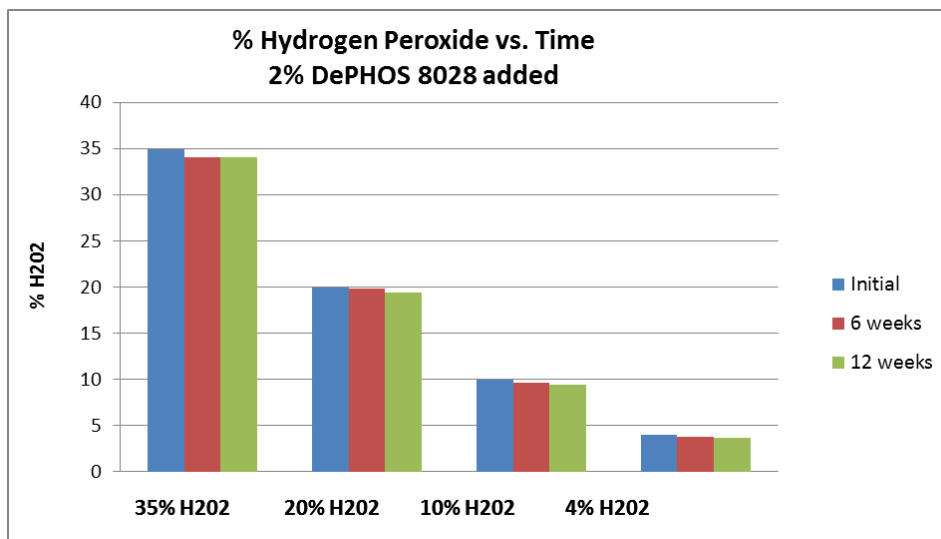
Hydrotrope Properties

DePHOS 8028 was evaluated for its ability to hydrotrope NPE-9 into several alkaline electrolytes. 3.75% by weight of DePHOS 8028 was added to an electrolyte solutions followed by 5% by weight NPE-9. The solution was heated until reaching the cloud point, the temperature at which the NPE-9 clouds out of solution.



Hydrogen Peroxide Stability

2% DePHOS 8028 by weight was added to varying concentrations of hydrogen peroxide and monitored over time. After 12 weeks at ambient temperature, very little peroxide degradation was observed. All samples were clear and free from precipitate initially as well as at the end of the test period.



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DePHOS 8028 APPLICATION DATA

Draves Wetting

DePHOS 8028 exhibits fast wetting properties at low concentrations. At 0.1% by weight in deionized water the wetting speed is **22 seconds**.

Modified Ross-Miles Foam Height

DePHOS 8028 has relatively fast breaking foam. Foam height was conducted via modified Ross-Miles graduated cylinder shake test at 0.1% in deionized water at ambient temperature.

	0.1% DePHOS 8028 by weight (mLs)
Initial	>100
30 seconds	63
60 seconds	55
2 minutes	39

Corrosion Testing using DePHOS 8028

DePHOS 8028 is an effective corrosion inhibitor suggested for use in aqueous systems.

Metal coupons were partially submerged in a solution containing from 0.25% -1% by weight DePHOS 8028 in hard water (100 ppm as CaCO₃ and 71 ppm as chloride) and stored in sealed glass jars at room temperature. The top halves of the panels were exposed to the vapor phase.

Type of Metal	Weight %	Result
12 months test results		
Bare Aluminum	0.25%, 0.50%, 1%	No rusting/darkening of panels in liquid or vapor phase.
Steel, Cold-Rolled	0.25%	No rust/darkening of panels in liquid phase. Slight rusting of panels in vapor phase.
Steel, Cold-Rolled	0.50% & 1%	No rusting/darkening of panels in liquid or vapor phase.
22 months test results		
Copper	0.5%	No rust/darkening of panels in liquid phase. Slight rusting of panels in vapor phase.
Copper	1.0%	No rust/darkening of panels in liquid phase. Some copper leaching noted in liquid phase. Slight rusting of panels in vapor phase.
Brass	0.5%, 1%	Some rusting of panels in liquid phase. Some darkening/rusting in vapor phase.

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