

Carbospense™ K-700 Polymers

Deposit Control Solutions



Lubrizol

Deposit Control Solutions

Lubrizol's Carbosperse™ K-700 polymers can help you develop water treatment programs that:

- Achieve greater product stability and wider formulating latitude.
- Reduce customer operating costs.
- Increase system reliability, throughput, and profits.

Deposit Control Technologies That Deliver

When providing water treatment solutions that your customers demand, you need components you trust and performance that stands out. Focusing on our core competencies, Lubrizol delivers deposit control technology that can help differentiate your business. Carbosperse K-700 polymers provide leading particulate dispersion and scale inhibition performance to help you achieve success.

Carbosperse K-700 polymers are deposit control agents used as components of water treatment formulations and programs for boiler, cooling, remediation, oil & gas, and other water applications.



Carbosperse K-700 Polymer Key Properties

Carbosperse Polymer	Chemical Type ^(a)	Molecular Weight ^(b)	pH	Total Solids	Active Solids ^(c)
K-7058 ^{(d),(e)}	PAA	7,300	2.5	50%	49.2%
K-732 ^(e)	PAA	6,000	2.6	50%	49.5%
K-7028	PAA	2,300	3.6	55%	51.7%
K-752 ^(e)	PAA	2,000	2.6	63%	62.2%
K-765	NaPMAA	30,000	7.0	30%	24.3%
K-766	NaPMAA	5,000	7.0	40%	30.1%
K-775	AA/SA	NP ^(f)	3.5	50%	48%
K-776	AA/SA	NP	4.8	37%	30.6%
K-781	AA/SA/SS	NP	2.8	55%	52.8%
K-797 ^(e)	AA/SA/SS	NP	2.7	50%	48.5%
K-798	AA/SA/SS	NP	2.8	50%	48%
K-XP229	Proprietary	NP	3.6	42.5%	41.6%

^(a) Chemical Type: PAA = Polyacrylate, NaPMAA = Sodium Polymethacrylate, AA = Acrylic Acid, SA = Sulfonic Acid, SS = Sulfonated Styrene

^(b) Molecular Weight expressed as polyacrylic acid as determined by an aqueous GPC method.

^(c) Active Solids = Total Solids minus counter ions (sodium) from post polymerization neutralization with NaOH.

^(d) Available as a liquid sodium polyacrylate.

^(e) Available as a powdered sodium salt.

^(f) NP = Not published.

Carbospense™ K-700 Polymers:

- Include solvent and water polymerized polyacrylates, polymethacrylates, acrylate copolymers, and acrylate terpolymers.
- Are multi-functional anionic polyelectrolytes that disperse particulates (e.g., silt, clay, iron oxide, pigments), and inhibit scale formation (e.g., calcium carbonate, calcium sulfate, calcium oxalate, barium sulfate, calcium phosphate, calcium phosphonate), and sequester di- and trivalent cations (e.g., calcium, magnesium, iron, copper, chromium, zinc).
- Are used around the world and have earned a reputation for high quality, consistency, stability, formulating flexibility, high total and active solids, and narrow molecular weight distributions.



Customize your water treatment programs with leading deposit control technology.

Differentiate your services with outstanding performance.

Support your reputation with proven performance data.

Collaborate with Lubrizol's technical team to develop the right solutions for your applications.

Carbospense™ K-700 Polymer Relative Performance Ranking ⁽¹⁾

Carbospense™ K-700 Polymer		K-752	K-7028	K-732	K-7058	K-765	K-766	K-775	K-776	K-781	K-797	K-798	K-XP229
Composition: ⁽²⁾		AA	AA	AA	AA	MAA	MAA	AA:SA	AA:SA	AA:SA:SS	AA:SA:SS	AA:SA:SS	Prop.
Performance Parameter	Calcium carbonate TI ⁽³⁾	XXX	XX	XX	X	O	X	XX	X	X	XX	X	---
	Calcium fluoride	XXX	XX	XX	X	O	X	XX	X	X	XX	X	---
	Calcium sulfate TI	XXX	XX	X	X	O	X	X	O	X	X	X	---
	Calcium phosphate TI	O	O	O	O	O	O	XX	XX	XXX	XXX	XXX	---
	Calcium phosphonate TI	O	O	O	O	O	O	XX	XX	XXX	XXX	XXX	---
	Calcium ion tolerance	XX	X	X	O	O	O	XX	XXX	XXX	XXX	XXX	XXX
	Barium sulfate TI	XX	XX	X	X	O	O	X	O	X	X	X	---
	Magnesium hydroxide TI	XX	XX	O	O	O	O	O	O	O	O	O	---
	Clay/silt dispersion	XX	XX	XX	XX	XX	XX	XX	XX	XXX	XX	XXX	XXX
	Iron oxide dispersion	O	O	O	O	O	O	X	XX	XXX	XX	XXX	XX
	Metal ion ⁽⁴⁾ stabilization	O	O	O	O	O	O	XX	XX	XXX	XX	XXX	---
	Silica polymerization inhibition	O	O	O	O	---	---	O	O	O	O	O	XXX
	Silica dispersion	XX	---	X	---	---	---	XXX	---	---	---	XXX	XXX
	Magnesium silicate dispersion	XX	---	X	---	---	---	XX	---	---	---	XXX	XXX

⁽¹⁾ Relative performance rating abbreviations: O = Poor, X = Fair, X = Good, XXX = Excellent, --- = Not Rated.

⁽²⁾ Composition abbreviations: AA = Acrylic Acid, MAA = Methacrylic Acid, SA = Sulfonic Acid (AMPS®), SS = Sulfonated Styrene, Prop. = Proprietary.

⁽³⁾ TI = Threshold inhibition.

⁽⁴⁾ Metal ions include Fe, Cu, and Mn.

Note: The performance of synergistic blends including (a) two or more polymers and (b) polymer(s) and phosphonate(s) such as discussed in Lubrizol's AWT 2004, 2011, and 2012 technical papers (see www.carbospense.com) are not considered herein but can substantially change the ratings noted above.

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When your company and ours combine energies, great things can happen.

You bring ideas, challenges and opportunities. We'll bring powerful additive and market expertise, unmatched testing capabilities, integrated global supply and an independent approach to help you differentiate and succeed.

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