# Carbosperse™ K-700 polymers

## Deposit Control Solutions

A trusted solution used around the world, 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.*

When providing water treatment solutions that your customers demand, you need components you trust. Carbosperse K-700 polymers are multi-functional anionic polyelectrolytes that provide leading particulate dispersion and scale inhibition performance to help you achieve success and differentiate your services with outstanding performance.

### 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.

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## Carbosperse™ K-700 Polymer Relative Performance Ranking [1]

| | Carbosperse™ 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 | 0 | X | XX | X | X | XX | X | – |
| | Calcium fluoride | XXX | XX | XX | X | 0 | X | XX | X | X | XX | X | – |
| | Calcium sulfate TI | XXX | XX | X | X | 0 | X | X | 0 | X | X | X | – |
| | Calcium phosphate TI | 0 | 0 | 0 | 0 | 0 | 0 | XX | XX | XXX | XXX | XXX | – |
| | Calcium phosphonate TI | 0 | 0 | 0 | 0 | 0 | 0 | XX | XX | XXX | XXX | XXX | – |
| | Calcium ion tolerance | XX | X | X | 0 | 0 | 0 | XX | XXX | XXX | XXX | XXX | XXX |
| | Barium sulfate TI | XX | XX | X | X | 0 | 0 | X | 0 | X | X | X | – |
| | Magnesium hydroxide TI | XX | XX | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | – |
| | Clay/silt dispersion | XX | XX | XX | XX | XX | XX | XX | XX | XXX | XX | XXX | XXX |
| | Iron oxide dispersion | 0 | 0 | 0 | 0 | 0 | 0 | X | XX | XXX | XX | XXX | XX |
| | Metal ion [4] stabilization | 0 | 0 | 0 | 0 | 0 | 0 | XX | XX | XXX | XX | XXX | – |
| | Silica polymerization inhibition | 0 | 0 | 0 | 0 | – | – | 0 | 0 | 0 | 0 | 0 | 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.carbosperse.com) are not considered herein but can substantially change the ratings noted above.

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.

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

**The Lubrizol Corporation**
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