

## Carbospense™ K-765 and K-766 Sodium Polymethacrylates

### GENERAL

Carbospense K-765 and K-766 are “30,000” and “5,000” molecular weight, respectively water soluble sodium salts of methacrylic acid polymers. These polymers provide high quality reliable deposit control performance in boiler water treatment formulations and/or programs that may include corrosion inhibitors and other additives.

	Features	Benefits
•	Excellent sludge dispersant	Minimizes blow down requirements thereby increasing equipment operating efficiency and reducing downtime
•	Compatible with most water treatment chemicals	Provide formulating latitude and prolonged shelf life
•	Hydrolytically stable over broad pH range	Provide wide formulating latitude (pH 2 to 13) and retain activity under storage and use conditions
•	Thermally stable	Suitable for use and retains activity in boiler water treatment applications
•	Consistent product quality	Ensures predictable performance
•	Effective at low dosages	Facilitates cost-effective products for formulators and end users

### REGULATORY CLEARANCES AND SIMILAR CONSIDERATIONS

Carbospense K-765 and K-766 polymethacrylates meet FDA Regulation 21CFR173.310. In addition, the U.S. Department of Agriculture (USDA) has found Carbospense K-765 and K-766 to be chemically acceptable as ingredients in boiler water treatment formulations for use in federally inspected meat and poultry processing establishments.

In accordance the United States’ clean air laws, a definition of ozone depleting chemicals (ODCs) was published in 40 CFR Part 82 on 11-February-1993. None of the Carbospense K-700 polymers including K-765 and K-766 polymethacrylates contain nor are they manufactured with ODCs (according to the CFR definitions).

Lubrizol has not pursued either Halal or Kosher certification for any of the Carbospense K-700 polymers. However, these polymers are of petrochemical and inorganic origin. Furthermore, to the best of our knowledge, none of Carbospense K-700 polymers nor any of the raw materials used to manufacturer these products contain any animal-based derivatives, grains (e.g., barley, corn, oat, rye, wheat), or grain derivatives. Therefore, Carbospense K-765 and K-766 polymethacrylates should not have any adverse impact on the Halal or Kosher status of formulated products.

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### TYPICAL PROPERTIES AND CHARACTERISTICS

Carbospense K-765 and K-766 sodium polymethacrylates are supplied as water white to amber, slightly hazy water solutions. The typical properties and characteristics of these polymers include:

Parameter	K-765	K-766
Nominal molecular weight <sup>(a)</sup>	30,000	5,000
Total solids, % <sup>(b)</sup>	30	40
Active solids, % <sup>(c)</sup>	24.3	30.1
Neutralization, % <sup>(d)</sup>	>90	>90
pH	7.0	7.0
Viscosity, cP at 25°C	225	450
Specific gravity	1.25	1.25

- (a)  $M_w$  = Weight-average molecular weight expressed as polyacrylic acid as determined by an aqueous GPC method.
- (b) Determined via Lubrizol's automated computerized microwave oven procedure.
- (c) Active solids = total solids - counter ions (sodium) from post polymerization neutralization with sodium hydroxide.
- (d) Percent neutralization of available carboxylic acid.

### PACKAGING, HANDLING, AND STORAGE CONSIDERATIONS

Lubrizol's technical bulletin entitled "Packaging, Handling, and Storage of Carbospense K-700 Polyacrylates" includes a variety of general information that is applicable to the Carbospense K-700 sodium polymethacrylates. Carbospense K-765 and K-766 are packaged and stocked in 55-gal plastic drums (525 lb net).

Lubrizol maintains comprehensive Material Safety Data Sheets (MSDSs) for Carbospense K-765 and K-766 polymethacrylates. These MSDSs provide information on the potential hazards, potential sources of exposure, protective measures, responses to emergencies, etc.

The quantity of 50% caustic soda needed to neutralize Carbospense K-765 and K-766 polymethacrylates to a desired pH is shown graphically in the technical data sheet for each product.

### FURTHER INFORMATION

For more information, contact Lubrizol or go to the web site noted on the preceding page.