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## Polyethylene Glycol (PEG)

**Features:** Polyethylene glycol (PEG) is a polyether compound which has a wide variety of applications depending on the length of the polymer chain and the molecular weight of the final polymer. PEG's are typically prepared by polymerization of ethylene oxide and they can range in molecular weight from 200 g/mole to 8,000 g/mole.

PEG's are non-toxic colorless liquids or white waxes, depending on the molecular weight of the polymer. Polyethylene glycols typically offer good lubricity, heat stability and chemical resistance which make them ideal for dozens of applications.

**Benefits:** Polyethylene Glycols have good water-solubility even in the solid state. Swan Chemical offers PEG-3350 and PEG-4000 industrial grades, which are white waxes. Within the rubber industry these products are used as release agents for foam and latex. They are also used as lubricants and process aids in both natural and synthetic rubber applications, which may otherwise be difficult to process.

PEG-3350 and PEG-4000 are effective activators when compounding with silica and clay fillers. The PEG's will assist in overcoming the retarding effects of mineral pigments, improving both the cure rate and state of cure. These products will also reduce bloom and iridescence due to the polarity added to the polymer. The added polarity will also promote microwave curing of EPDM.

**Usage:** PEG-3350 and PEG-4000 can both be used in all types of polymers using non-black fillers, however, both can be used in black-loaded EPDM formulations. Suggested loading is 1.5 – 3.0 PHR. For EPDM extrusions (including black loaded compounds), increasing the dosage to 4.0 PHR has been shown to be beneficial.

<b>TYPICAL PROPERTIES</b>	<b>PEG-3350</b>	<b>PEG-4000</b>
Appearance	<b>Powder/granular</b>	<b>Powder/granular or Flake</b>
Color Alpha (25% Aq)	<b>20 max</b>	<b>30 max</b>
pH (5% Aq)	<b>4.5 – 7.5</b>	<b>4.5 – 7.5</b>
Viscosity (@210 °F)	<b>85 – 115</b>	<b>110 - 155</b>
Molecular weight (g/mole)	<b>3,150 – 3,550</b>	<b>3,600 – 4,300</b>

**Packaging:** 50-pound bags / 2,000 pounds per pallet (40 bags per pallet)

