Arena Petro Gas

Producer and Supplier in the fields of Chemical ,Oil ,Gas and Petrochemical industries

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Technical Data Sheet

PEG 400

Polyethylene Glycol 400

Polyethylene glycols (PEGs) are condensation polymers of ethylene oxide and water with the general formula $H(OCH_2CH_2)_nOH$. They are the most commercially important type of polyether. The low molecular weight compounds up to 700 are colorless, odorless viscous liquids with a freezing point from -10˚C (diethylene glycol), while polymerized compounds with higher molecular weight than 1,000 are wax like solids with melting point up to 67˚ C for n=180. While PEGs with different molecular weights find use in different applications and have different physical properties (e.g. viscosity) due to chain length effects, their chemical properties are nearly identical. The numbers that are often included in the names of PEGs indicate their average molecular weights, e.g. a PEG with n=9 would have an average molecular weight of approximately 400 and would be labeled PEG 400. Most PEGs include molecules with a distribution of molecular weights, i.e. they are polydisperse.
PEGs are soluble in water, methanol, benzene, dichloromethane and is insoluble in diethyl ether and hexane.

The typical characteristics of polyethylene glycols are:

- Highly compatible to various kinds of organic compounds: PEG is compatible with most organic solvents, and has excellent water-solubility.
- High boiling point: Effective as a non-volatile solvent because of its high boiling point.
- Easy control of the degree of condensation: As the degree of condensation is properly governed, PEG has a broad spectrum of products ranging from rigid solids to oily liquids.
- Controllable hygroscopic property: Every PEG type surfactant has excellent hygroscopic property, and this is controllable by adjusting the degree of condensation. As the degree of condensation increases, the hygroscopic property is degreased.
- Less toxicity: PEG is characterized by less toxicity and less skin irritation. There is no damage in case of contact with skin or lips.

Application:

Polyethylene glycols are non-toxic, odorless, neutral, lubricating, nonvolatile and nonirritating and are used in a variety of Industrial applications such as adhesives, ceramic, pulp and paper, metalworking, lubricants, agrochemicals, detergents and cleaners.

Test	Standard	Reference
Color, pt-co	Max 25.0	ASTM D 1209
Viscosity at 98.9 ˚C, cSt	6.8-8.0	USP41-NF36
PH,5% Solution	4.5-7.5	USP41-NF36
Residue on ignition, %wt	Max 0.1	USP41-NF36
Assay (Average Molecular Weight),g/mol	380-420	USP41-NF36
Water, Percent	Max 2.0	ASTM E203

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