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(54) Title: INFERRED WATER ANALYSIS IN POLYPHENYLENE SULFIDE PRODUCTION

(57) Abstract: A method for producing polyphenylene sulfide (PPS) polymer, including polymerizing reactants in a reaction mixture in a vessel to form PPS polymer in the vessel, measuring values of operating variables of the vessel and/or PPS process, and determining the amount of quench fluid to add to the vessel based on the values of the operating variables. The technique may rely on the vapor liquid equilibrium (VLE) of the mixture to calculate the concentration of water existing in the reactor prior to quench, and accounts for the effectiveness of the upstream dehydration process and in the amount of water produced during the polymerization. The technique is a striking improvement over the trial-and-error estimation of the amount of quench water based on human operating experience, and avoids direct measurements of the existing water concentration in the reactor. The result is improved control of PPS particle size and other properties.

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