

عنوان مقاله:

Simulation of nutrients release from fertilizer granules

محل انتشار:

سومین کنفرانس ملی کاربرد CFD در صنایع شیمیایی (سال: 1390)

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خلاصه مقاله:

In this paper, a computational mass transport simulation is presented for nutrients release from a spherical fertilizer granule. The granules of fertilizer was assumed non porous spheres contains three types of materials: a strong electrolyte, potassium chloride (KCl); a weak electrolyte, diammonium phosphate ((NH₄)₂HPO₄); and a non-electrolyte, urea ((NH₂)₂CO). Mass transport equations have been got for three nutrients. A comparison between the concentration value of these nutrients in different granule radiuses and as function of time is performed and shows that the maximum of variation of concentration of solute (N, P and K) in the aqueous phase is in the surface of sphere, and as the time increases, the disintegration of nutrients increases. The concentration gradient is examined at the different pH values.

کلمات کلیدی:

Simulation, Nutrients, Fertilizer granules, Variation of concentration

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