

Title (en)

ADVANCED PLANT FOR THE PRODUCTION OF UREA IN AQUEOUS SOLUTION IN OPERATING UNITS OF LIMITED SIZE

Title (de)

ERWEITERTE ANLAGE ZUR HERSTELLUNG VON HARNSTOFF IN WÄSSRIGER LÖSUNG IN BETRIEBSEINHEITEN MIT BEGRENZTER GRÖSSE

Title (fr)

INSTALLATION AVANCÉE POUR PRODUIRE DE L'URÉE EN SOLUTION AQUEUSE DANS DES UNITÉS DE FONCTIONNEMENT DE TAILLE LIMITÉE

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Application

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Abstract (en)

[origin: WO2022243742A1] The invention describes a plant for the production of urea in aqueous solution comprising: a pure water treatment apparatus (Imp_H2O); a storage and heating tank (S1) for the pure water (H2O), comprising a temperature probe (ST1), a conductivity probe (SC1) and a level probe (SL1); the plant further comprising a urea loading means (LOAD_urea), a hold-up tank (S2) comprising a temperature probe (ST2), a conductivity probe (SC2), a level probe (SL2) and a refractometer (Q01); a nanoemulsion system (5) for mixing the loaded urea (urea) and the loaded pure water (H2O), thereby determining the urea in aqueous solution (SOL) at an adjustable solution temperature (TSOL) and at a concentration (CONG) of urea; the nanoemulsion system (5) further comprising a dissolution means (CAV), preferably a pumping means P3 and a mixing motor M5; wherein the water filtration apparatus (Imp_H2O) comprises a first adjustment means (M_H2O) for adjusting the pure water (VH2O) exiting from the water treatment apparatus (Imp_H2O) and entering the storage and heating tank (S1), on the basis of one or more among: the data received from the temperature probe (ST1), the data received from the level probe (SL1) and the data received from the conductivity probe (SC1); wherein said urea loading means (LOAD urea) comprises a second adjustment means (M urea) for adjusting an adjustable mass of urea (m_UREA) entering said nanoemulsion system (5) on the basis of one or more among: the data received from the temperature probe (ST2), the data received from the level probe (SL2) and value of the concentration (CONG) of urea (urea) measured by the refractometer (Q01); wherein an adjustment means (M_H2O;M_urea) sets a variation (ATSOL) of the adjustable solution temperature (TSOL) such as to modify the measured concentration value (CONG) until arriving at a target concentration value (CONCTARG) at a target solution temperature (TSOLTARG), such that $17^{\circ} < TSOLTARG < 30^{\circ}$.

IPC 8 full level

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