

## CONCERNING THE ROLE OF PLASTIC STRENGTH IN GRANULATION

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**Introduction.** Wet granulation method is widely used in industrial technology of solid dosage forms, especially at creation drugs with a different range of technical and physicochemical properties. To substantiate the choice of the humidifier is applied such an important rheological characterization of binders mass like plastic strength.

**Aim.** Study plastic strength of the drug substances of Valaciclovir, Ornidazole and Nifuroxazide which belong to a group of antiviral and antimicrobial drugs.

**Materials and methods.** Plastic strength of powder is express "resistance" of the granular medium to the effect of mechanical load and measured by the depth of immersion of the standard cone in the test medium under effect of constant load. Plastic strength value depends on the humidity. The main characteristic of the cone method is the value of limiting shear stress by P. A. Rebinder.

**Results and discussion.** At the beginning, at the humidification of the powder occurs hydration and structuring process, the plastic strength increases and reaches its maximum value ( $0.076 \text{ kg} / \text{cm}^2$ ) due to adsorption and capillary moisture. Further increase of moisture leads to the appearance so-called "free moisture", resulting in reduced plastic strength. As a result of research as a humidifier when obtaining tablet mass of Ornidazole substance, which not soluble in water and by natural consistency has tight plasticity, justified the use of "moderately binder system" 5% solution plasdone S-630. Application of this humidifier improves pharmaco-technological characteristics of tablet mass with Ornidazole, increasing its plasticity and solubility. As a humidifier for the tablet mass with the easily soluble substance of Valaciclovir, which by nature consistency has the soft plasticity, justified the use of a 1% solution of HPMC with plasdone S630, the combination of which helps to delay the so-called "local dissolution of the substance. Maximum plastic strength for Nifuroxazide powder reaches a maximum in different ways, depending on the nature, moisture and humidifier concentration. Results of experimental research showed that the maximum strength of the plastic is reached when used as a humidifier solution of PVP K-29/32 at 10% concentration and minimum humidity of 17%. For other humectants (34% sugar syrup, 2% solution of HPMC (50 cP), a 10% starch paste, mortar plasdone S-630 10%) this value is higher and make up 18-25%.

**Conclusion.** The value of the plastic strength used in the development of composition and technology of tablets with Valaciclovir of antiviral action "Gerpeval 500" tablets with Ornidazole of antimicrobial action "Meradazol" and Nifuroxazide capsules for the treatment of acute intestinal infections "Diaplant".