

the decreasing particle size, in the stage of reduction of intraparticle pores in the range from 10.063 to 12.509 MPa and in the stage of reduction of the solid substance without pores in the range from 119.954 to 137.437 MPa. It means that with the diminishment of the particles of microcrystalline celluloses energies E_A are decreased with a concurrent increase in the “half-pressure” values.

Another microcrystalline cellulose under evaluation is Avicel PH 301. It differs from Avicel PH 102 in a substantially higher density D_{MAX} at the level of 6.507 g/cm³. Its particle size is 50 µm and humidity content, 5%. In contrast to Avicel PH 102, it has lower values of reductions of both interparticle and intraparticle pores, which may be caused by its particle size. On the other hand, the reduction of the solid substance without pores is higher, caused probably also by a higher density. Energies E_A in Avicel PH 301, in contrast to Avicel PH 102, are in all three stages of compression process lower and “half-pressures” higher.

An important criterion of evaluation is the values of “half-pressures”. Lower values in the stage of reduction of the solid substance without pores mean better compressibility. From the given aspect, the best compressibility is found in Avicel PH 102 with the “half-

pressure” value of 119.954 MPa and the worst compressibility in Avicel PH 301 with the “half-pressure” value of 151.449 MPa.

The study was financially supported by research project MSM 0021620822.

REFERENCES

1. Řehula, M., Rysl, T.: Pharmazie, 2008; in press.
2. Walker, E. E.: Trans. Faraday Soc., 1923; 19, 73–82.
3. Balshin, M. Y.: Dokl. Akad. Nauk. SSSR, 1949; 67, 831–834.
4. Kawakita, K., Lüdde, K.-H.: Powder Technol., 1970; 4, 61–68.
5. Cooper, A. R., Eaton, L. E.: J. Am. Ceram. Soc., 1962; 45, 97–101.
6. Rowe, R. C., Sheskey, P. J., Owen, S. C.: Handbook of pharmaceutical excipients, 5th edition. London, Pharmaceutical Press, 2006, 132.
7. Reier E. G.: Avicel PH microcrystalline cellulose, NF, Ph Eur. JP, BP. Philadelphia, FMC Corporation, 2000, 1–27.
8. Lamberson, R. L., Raynor, G. E.: Manuf. Chem. Aerosol News, 1976; 47, 55–61.

Rada vlády ČR pro výzkum a vývoj

zařadila na základě poskytnutých informací časopis

Česká a slovenská farmacie

do Seznamu recenzovaných neimpaktovaných periodik vydávaných v České republice.
Seznam bude Radou pro výzkum a vývoj využíván při hodnocení těch výsledků výzkumu a vývoje podporovaného z veřejných prostředků, které jsou vykazovány jako články v odborném periodiku.