HYDROGENATION CATALYSTS IN PRODUCTION OF MEDICAL PREPARATIONS AND EDIBLE FATS

Description
A family of catalysts, palladium on Sibunit carbon carrier, is designed for liquid-, vapor- and gas-phase hydrogenation processes. The catalysts can be produced as a powder with a bulk density of 0.3-0.4 kg/dm³ with breakup varying from 1 to 90 mm for hydrogenation of vegetable oils and as spherical granules 1-2 mm dia with bulk density 0.35 – 0.6 kg/dm³ for production of medicinal preparations.

Technical appraisal and economic benefits
Utilization of the catalysts provides:
• reduced energy consumption in production of margarines due to process temperature decrease to 140-150 °C and two- or three-fold reduction of the filtration time of hydrogenated vegetable fats;
• obtaining high-clean products with the output of 98-99% in drug production;
• non-pollution process.

Application areas
For hydrogenation of organic substances in industrial production of medicinal preparations and high-quality cooking and baking fats, as well as new domestic liquid margarines.

Development stage
The catalyst was tested for hydrogenation of vegetable fats at industrial plants. On the basis of palladium catalysts, new domestic technologies were developed for obtaining key intermediate products (2,6-xylidine and 1-ethyl-2-aminomethylpyrrolidine) for manufacturing substances of lidocaine and sulphiride medicinal preparations. The synthesis technology of 2,6-xylidine was developed together with the Novosibirsk Institute of Organic Chemistry SB RAS; the synthesis technology of 1-ethyl-2-aminomethylpyrrolidine was designed together with the Research Institute of Physical Chemistry (Novokuznetsk).
An industrial capacity (100 kg/year) for producing palladium catalysts has been set up at the Boreskov Institute of Catalysis. A pilot lot of sulphiride substance was produced for clinical tests, production of a setting batch of SULPHIRIDE preparation will be arranged at ORGANICA Joint-Stock Company, Novokuznetsk. A pilot plant for producing 2,6-dimethylaniline (output 1 t/year) is created at the Novosibirsk Institute of Organic Chemistry. Based on the pilot lots of 2,6-dimethylaniline, the LIDOCAINE substance lots were produced by PURIN Joint-Stock Company, Anzhero-Sudzhensk.

Patent situation

Commercial offers
Supply of the catalyst.

Estimated cost
Negotiated price.

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