ADHESIVE COMPOSITIONS

Description
Adhesives for the food (label adhesives), woodworking, printing, rubber, etc. industries are being commercially produced from domestic raw.
The environmentally safe, water soluble, label adhesive compositions (PET, KET, and UKL grades of different modifications) based on naturally occurring materials (casein adhesives) are intended to be used for manual and automatic application of paper labels and excise duty stamps to containers from glass, tin, aluminum, and synthetic polymer materials (polyethylene, polystyrene, polypropylene, polyethylene terephthalate, etc.). The label adhesives are certificated for use in the food-processing industry.

KKST grade casein adhesive is intended for woodwork.
Water-resistant AK, BK, PVB, LAT, UK, etc. adhesive compositions based on synthetic polymers are designed for gluing together paper, cardboard, plywood, tree, chipboard, plastic, and rubber in various combinations.

A constant analytical quality inspection is performed. Each batch of the products is supplied with an analytical certificate, a duplicate of the hygienic certificate of the regional center of Epidemiological Surveillance, and product manuals specifying the application of adhesive using high-speed labeling machines.

The designed soft technology of adhesive production includes the following elements:

a) adhesive formulation;
b) regulations of the manufacture of adhesives from raw (description of the process procedure);
c) a plant for producing ready adhesive compositions;
d) engineering supervision of the startup and commissioning of the adhesive production process.

Technical appraisal and economic benefits
PET, KET, and UKL grade casein label adhesives:

a) have a 2-3 times lower cost than imported adhesives with similar application properties,
b) are characterized by a lack of toxicity and odor;
c) retain their consumer properties after 3-4 months of storage and after transportation under low temperatures, and do not require special storage conditions;
d) form a colorless adhesive film on paper;
e) have a small setting time, which ensures high labeling accuracy and quality;
f) adhesive traces are easily removed from returnable package.

UKL adhesive is suitable for labeling containers with products stored under cold conditions with high humidity (fish products).
The water-resistant polymer-based adhesives are more universal in their ability to glue together various materials, are characterized by a high gluing speed and performance.

Application areas
The water-soluble casein adhesives are used in continuous productions to label glass and polymer containers with beer, nonalcoholic and alcoholic drinks, medicinal drugs, paste-like and granular materials, etc. KKCT grade adhesive is used in furniture making.
The synthetic adhesives were used in the manufacture of articles that have prolonged exposure to
water: self-adhesive and laminated paper labels, carpet cushioning, outdoor signs (chipboard and plywood), facing materials, including, pebble, etc.

Development stage
Formulations and nonwaste production processes and special production equipment have been developed for adhesive compositions of various applications. Batch production of adhesive compositions of the entire nomenclature has been launched at the Experimental Chemical Production of the Vorozhtsov Institute of Organic Chemistry, SB RAS.

Patent situation
The adhesive formulations and production technologies are know-how of the IOC SB RAS.

Commercial offers
Sale (without transportation) of ready-to-use label, joiner’s, etc. adhesives to enterprises located within 1000 km from Novosibirsk.
Sale of the complete production technology of a particular adhesive composition to enterprises at a distance of more than 1000 km from Novosibirsk.
Dealer’s offer for marketing adhesive compositions is considered.
Customized research and engineering developments of adhesive compositions with specified properties.

Estimated cost
The price of casein label adhesives (packages of 40-50 liters) is 45-50 rubles/kg (including VAT, without transportation cost) (June, 2003).
The price of joiner's adhesive (June, 2003) is 145 rubles/kg (including VAT, without transportation services).
The price of synthetic polymer based adhesives is 40-200 rubles/kg, depending on the grade.
The estimated cost of the formulation and production technology of a label adhesive of one grade is ~100,000 rubles (without the cost of the adhesive production plant and engineering supervision).

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