

DEVELOPMENT OF A STICKY COMPOSITION BASED ON SYNTHETIC RUBBERS

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The creation of self-fixing drugs on the skin is increasing due to their widespread use in various conditions: from household cuts to widespread clinical practice. Especially important is the availability of such drugs in situations of military conflict, accidents, etc. in the presence of mass destruction of people (disaster medicine), since in these conditions, a medical dressing is almost the only way to treat wounds.

Such types of medicines, medical plasters can be considered very promising as a fixing and integumentary element, which are medical products formed on the basis of adhesive tapes, films, etc.

It is the stickiness of the adhesive patch that allows the drug to be fixed on its sticky surface, and when applied to the integumentary tissues, the drug is firmly fixed on the skin, to ensure tight and continuous contact of the drug with it.

Studies are underway to develop an adhesive composition based on synthetic rubbers (isoprene and butyl rubber-copolymer of isoprene and isobutylene) with the addition of rosin for greater stickiness and other substances. Rubbers as the basis of the sticky composition have no irritating effect on the skin, indifference to many medicinal substances, elasticity, air and moisture resistance, but they have poor ductility and stickiness, and stickiness was increased by adding rosin to the sticky composition. Rosin causes skin irritation, therefore zinc oxide was introduced into the composition of the sticky layer, which has a drying effect. To plasticize and prevent hardening of the patch, liquid paraffin and anhydrous lanolin were added to the sticky layer. In order to protect the rubber from aging and loss of elasticity, an antioxidant diphenylamine was introduced, which is first oxidized by oxygen. The number of components of the sticky composition varied as follows: rubbers -20.5-29.5%; rosin-18.6-22.8%; zinc oxide or titanium oxide-28.0-34.0%; paraffin-8.8-10.6% and lanolin-7.9-9.8%; diphenylamine-0.75%.

The optimal composition of the adhesive layer of the patch was developed and uniformity of the layer, tear-off stickiness, acid number, amount of zinc oxide or titanium oxide were determined.

References:

1. The technology of dosage forms: a textbook in two volumes. Volume 2 / Ed. L.A. Ivanova. - M.: Medicine, 1991. - p. 509 - 520.