Table II. Mechanical properties of films.

Kinds of acetals	Degree of acetalization (Mole %)	Strength* (Kg/mm^2)	Elongation* (%)	Softning Temp. in water (°C.)
Enant-	64.0	2.72	237.9	64
Octyl-	63.4	0.93	255.2	46

*) Measured at 22°C.

Some properties were found to be almost the same as those obtained from the plasticized butyral.

In the direct acetalization from polyvinylacetate in methanol phase, only small percentages of acetyl groups in the acetate could be replaced by both aldehyde groups.

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36. Some Experiments on the Bubble-type Emulsion Polymerization

Seizo Okamura and *Masakazu Ohara*

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The experimental results on the bubble-type emulsion polymerization of vinylchloride were already reported in the case of one-component catalyst system such as pottasium persulphate (The Chem. of High Polymer, Japan. **6** 436, 1949). We extended these methods of polymerization to the three-components system such as pottasium persulphate, ferrous sulphate and oxalic acid. Also at room temperature, the rate of polymerization was found to be pronouncedly acceralated by light. The results obtained were summarized as follows.

(a) At various concentrations of catalyst, the rate of polymerization was almost constant and the initial one was found to be nearly equal to the rate of blowing-in.

(b) The rate was not changed by the polymerization-temperature, but decreased slowly with the time of polymerization, is due to the screening effect of light by the turbidity of emulsion.

(c) The relations were found to be almost linear between the rate of decomposition of catalyst and the rate of polymerization. The amount of polyvinylchloride polymerized per atom of oxygen produced by decomposition of catalyst was experimentally same as the degree of polymerization of polyvinylchloride measured.

(d) The relationships between the diffusion rate of vinylchloride gas and the rate of emulusion polymerization were considered quantitatively, and the necessary height of polymerization-tower was also calculated.

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37. A New Plastic Treatment on the Rayon Yarns and Staples, and the Characteristic Features of the Products Thereof. (I)

Narao Saito

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The plastic treatment by a urea-formaldehyde resin or its derivatives on those viscose rayon yarns and staples has not yet been successful in this country. The author has been developing a new method of processing rayon yarns and staples with the plastics as stated in the foregoing abstracts. This paper deals with the pronounced results obtained, of the pile fabrics prepared by several miils, using the treated and untreated viscose rayon yarns or spun yarns.

The following table gives some of the results shown in terms of the pile recovery in % of the fabrics tested by a newly contrived pile recovery tester of a simple form.

Applied pressure	Pile recovery in % of pile fabric of rayon Yarn		Pile recovery in % of pile fablic of rayon Spun yarn	
	Treated	Untreated	Treated	Untreated
115 g/m²	78.5	59.0	95.0	55.0
515 〃	81.5	69.0	90.0	54.5
1115 〃	69.0	50.0	85.0	50.0
1615 〃	57.0	44.5	80.0	48.5

The pile recovery in % given here was calculated by the following equation:

$$[P.\ R]=(c-b)/(a-c)\times 100,$$

in which a; the thickness of the pile fabric, b; the thickness of the pile fabric at the end of 5 minutes remaining under load for that time, and c; the height of the pile after the pile fabric was allowed to recover free from pressure for 3 munutes.

As clearly seen in the table the pile recoveries of the fabrics of the treated yarns are exceedingly higher than those of the fabrics of the untreated one.

Various pile fabrics made of viscose rayon yarns, benberg yarns and silk were mutally compared for reference.
