Studies on the Second-Order Transition Temperature of Polyvinyl Alcohol. (I) : Influence of Water on the Second-Order Transition Temperature of Polyvinyl Alcohol

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friction of viscose and vinylon fibers treated with surfactants of various
types. Minimum values of the coefficient of friction were observed at the
velocity of about 1 m/min. with fibers treated with anionic and cationic type
surfactants as well as nonionic type. This discrepancy to the result reported,
by Röder was discussed.

The convenient apparatus to estimate the coefficient of static and kinetic
friction of yarn was constructed using the loading pendulum of K.S. Senimeter
(a single fiber tensile tester). Results obtained with this apparatus were
compared with results obtained with Röder type apparatus or the loading
weight method and some differences were observed.

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Studies on the Second-Order Transition Temperature
of Polyvinyl Alcohol. (I)

Influence of Water on the Second-Order Transition Temperature
of Polyvinyl Alcohol

YASUO SONE and Ichiro SAKURADA
(Sakurada Laboratory)

Chemistry of High Polymers (Kobunshi Kagaku), 14, 574 (1957)

The relation between the second-order transition temperature \( T_g \) and the
water content of polyvinyl alcohol was discussed. The water content of
samples of polyvinyl alcohol filament were 0, 1.8, 2.4, 8.6, 14.0, 25.0, 35.9, 48.5,
61.6% respectively. The \( T_g \) of completely dried sample was 73°C, but the
temperature fell gradually with increasing water content of samples. Another
transition temperature \( T_g' \) were observed by the samples whose water content
were greater than 8.6%.

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Studies on the Second-Order Transition Temperature
of Polyvinyl Alcohol. (II)

Influence of Rate of Heating and Degrees of Polymerization on the
Second-Order Transition Temperature of Polyvinyl Alcohol

YASUO SONE and Ichiro SAKURADA
(Sakurada Laboratory)

Chemistry of High Polymers (Kobunshi Kagaku), 14, 577 (1957)

At first the influence of the rate of heating on the second-order transition
temperature of polyvinyl alcohol (PVA) was studied. The samples used in this
series were air dried PVA filament and completely dried PVA film. In no case
the influence of the rate of heating were observed. In the second series of this