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KEYWORD

APPLIED POLYMER SCIENCE AND TEXTILE TECHNOLOGY

NATAYA EUAPITAKSAKUL : HEAT SEALING OF POLYPROPYLENE FILM
IN FLEXIBLE PACKAGING. THESIS ADVISOR : ASSIS. PROF. KHEMCHAI

HEMACHANDRA, Ph.D. 136 pp. ISBN 974-635-195-8

Five kinds of flexible packaging films composed of oriented polypropylene as a substrate from packaging industry are OPP/PE/LLDPE OPP/PE OPP/PP OPP/CPP and OPP/MCPP used for heat sealing. The main objective is to study both machine and film factors influencing seal integrity by considering seal strength and mode of failure. The study include the relation between sealing method and seal properties by measuring seal strength , peel strength and hot tack. All heat sealing are made by heat sealing machine which is continuous heating and does not let the seal cool under pressure.

Seal strength increases as seal bar temperature and sealing time increase , and it will increase until it reaches appropriate seal bar temperature and sealing time or changes mode of failure , and then seal strength will be constant. Sealing pressure has less measurable effect on seal strength. Thicker sealant film has higher seal strength than thinner one. Thicker substrate film has lower seal strength than thinner one. To achieve appropriate heat sealing , seal bar temperature should be set slightly above the melting point of sealing film and has enough heat to melt the sealant ; sealing time should be sufficiently long to permit sealant film to reach its melting point and to bond at the interface ; sealing pressure should be kept low in order to prevent seal distortion.

ภาควิชา.....วิทยาศาสตร์.....

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