PROPERTIES AND PERFORMANCE OF WOOD ADHESIVES

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Wood adhesive is one important element in wood-based processing industries. Most of wood based industries such particle boards, glulam, plywood, boat construction, and more use good wood adhesive. The adhesives like Urea-formaldehyde (UF), Phenol-Formaldehyde(PF),Melamine-Urea-Formaldehyde, Resorcinol Formaldehyde, Thermoplastic Adhesives, Polyvinyl Acetate, Elastomeric Adhesives and other. Each of adhesive could use for certain wood based product. This is because the strengthness for each wood-based products are differences. Also, the combinations in adhesive contents are differences. Other than that, pH, presence of extractive, relative humidity, also contribute wood based.

CHAPTER ONE

1.0 INTRODUCTION

Adhesives were already in use thousands of years ago and during the time, they were mainly derived from natural plant and animal products. Modern adhesives commonly known as synthetic adhesives, are derived from petroleum products. They have largely replaced the natural adhesives because of their stronger adhesion and the generally greater flexibility to many varying processing operations.

Adhesives can be classified as either natural or synthetic. Natural adhesives can be further classified according to the source where the adhesives is derived or according to the adhesives chemical constituents. Synthetic adhesives are produced by the controlled polymerisation of various monomeric organic substances and these adhesives can be further divided into the various categories according to their properties. The present discussion deals only with the major sources where the adhesives are derived and the common adhesives (Anonymous, 1991).

1.1 Natural Adhesives

Typical natural adhesives are carbohydrate or protein-based. They are derived from either animal or vegetable sources, or may be form an inorganic material. Starch and vegetable gums are carbohydrate-based adhesives derived from vegetable sources while soyabean and animal adhesives are protein-based derived from vegetable and animal sources respectively.