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A STUDY OF THE EFFECT OF TYPE AND CONCENTRATION OF
PLASTICISER ON THE DRY BLENDING, FUSION BEHAVIOUR,
EXTRUDABILITY AND MECHANICAL PROPERTIES OF POLY
VINYL CHLORIDE

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ABSTRACT

A Study of the effect of type and concentration of plasticiser on the dry blending, fusion behavior, extrudability and mechanical properties of poly vinyl chloride

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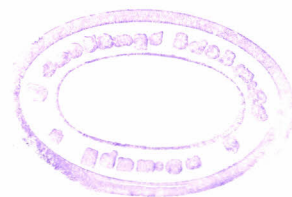
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Plasticised PVC dry blends containing three different plastisers at three different levels were prepared and torque temperature curves for dry blending characteristic and fusion behavior were obtained for each using a Brabender planetary mixer and torque rheometer. Each sample was extruded at three different screw speeds to study the processability. Tensile tests were conducted on these extruded samples.

The activity of the plasticisers was governed by their molecular weight and polarity. Efficiency of the plasticiser can be measured how fast plasticiser absorption take place during dry blending. Low molecular weight plasticiser generally are absorbed faster.

Fusion is taken to imply the extent to which individual powder grains have fused together to form a continuous matrix. Fusion levels also depended on plasticiser type. In general more compatible plasticisers enhanced fusion. The torque at fusion peak increased with



PVC/plasticiser compatibility, because fusion occurred at lower temperatures, where melt viscosity was higher.

The type and concentration of plasticisers have significant effect on mechanical properties. The different plasticisers appeared to behave in a similar manner in reducing mechanical properties with increasing concentration. Mechanical properties increased with PVC/plasticiser compatibility.

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