

EFFECT OF CANOPUS 100 PROCESSING OIL ON THE BLOOMING EFFECT OF SOLID TYRES

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ABSTRACT

Solid tyres are popular in the industrial world. These type of tyres are primarily used for industrial and light commercial applications. Samson Rubber Products (Pvt) Ltd produces industrial solid tyres by using two compounds namely ST 1125 and ST 9048. To obtain a good quality tyre, the compound must be calendared after compounding which is a time consuming process. Sheets cannot be kept more than 24 hours after calendaring due to the appearing of yellowish marks on the surface of the solid tyres. It is termed as 'blooming effect' and highly affects on the final quality of the solid tyres. This research was conducted to determine the effect of Canopus 100 processing oil contained in the ST 9048 compound on the blooming effect of solid tyres. Seven treatments were prepared by adding Canopus 100 processing oil in 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 level of phr into ST 9048 compound. Each treatment was tested by five replicates. Prepared solid tyre structures were inserted in to a press machine at 130 °C for 85 min. A transparent grid paper (1 mm² scale) was kept on the blooming pots of the tyre and affected area was calculated by counting the number of grids. One way analysis of variance (ANOVA) at 5 % level of significance and mean comparison using Tukey test at 95 % confidence level were done to analyze the data. According to the results, there was a significant difference in area affected due to blooming. The results revealed that there is an effect of Canopus 100 processing oil on blooming effect of solid tyres. Three phr level of processing oil is the best among the seven treatments since it reported the minimum affected area due to blooming. Further research investigations should be done to determine the effect of processing oil beyond 3 phr level of processing oil.

Key words: Blooming effect, Processing oil (Canopus 100), Solid tyres