

## **Expansion of Storage Time of Tread Compound of Fork Lift Tyres without Sulphur Blooming**

D.M.A. Udeshika<sup>1</sup>, A.G.A.W. Alakolanga<sup>1</sup>, M.H.L. Wasantha<sup>2</sup>, A.N.R. Weerawansa<sup>1</sup>

*<sup>1</sup>Department of Export Agriculture, Faculty of Animal Science and Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka*

*<sup>2</sup>Department of Research and Development, Samson Rubber Products (Pvt) Ltd, Galle*

With rapid industrialization and agricultural advancement, road transportation is one of the most promising and potent means for existence of everything. Both solid and pneumatic tyres involved in this process. Solid tyres are used primarily for light commercial applications and personal use vehicles like forklifts. Sulphur blooming is one of the major problems encountered with them. It will cause to loss oftackiness. Therefore, solid tyres are significantly more prone to roll-over than pneumatic tyres. This study was conducted to develop a suitable chemical compound for the tread component of fork lift tyre to have a significantly high storage time without sulphur blooming. Five different compounds including soluble sulphur, insoluble sulphur, silane coupling agent and phenolic resin (bakelite) were prepared and kept for six storage time levels (12 hours, 24 hours, 36 hours, 48 hours, 60 hours and 72 hours). They were tested for cure characteristics and physical properties with respect to product specifications of fork lift tyres. The visual observations revealed that, chemical compound prepared by using soluble sulphur, silane coupling agent and phenolic resin has maximum storage of 60 hrs which did not have sulphur blooms on finished tyre surfaces. The soluble sulphur along with silane coupling agent and phenolic resin (bakelite) is more suitable for fork lift tyre compounding whereas added chemicals have significantly a favorable effect on improvement of cure characteristics and physical properties within the specifications.

**Keywords:** Fork lift tyres, Sulphur blooming, Cure characteristics, Physical properties