EKOPRENA® is a form of epoxidised natural rubber (ENR) and an established class of specialty rubber obtained by epoxidation of natural rubber (NR) latex. EKOPRENA® is a green material as it is produced from a renewable natural source unlike synthetic rubbers which are derived from non-replenishable petroleum.

\[
\begin{align*}
\text{CH}_2 & \quad \text{CH}_2 \\
\text{H}_2\text{C} & \quad \text{H}_2\text{C} \\
\text{C} & \quad \text{C} \\
\text{C} & \quad \text{O} \\
\text{CH} & \quad \text{CH}_2
\end{align*}
\]

Chemical structure of EKOPRENA®
EKOPRENA® is produced and presented in the form of polythene wrapped 33.3 kg bale. For export purposes, 36 bales of EKOPRENA® are packed into a 1.2 tonne pallet. Two grades of EKOPRENA® are produced commercially namely EKOPRENA 25® and EKOPRENA 50®, containing 25 and 50 mole % epoxidation contents, respectively.

Production of EKOPRENA® incorporates a stringent quality control to ensure the quality of material produced. All EKOPRENA® produced is subjected to comprehensive analytical tests including determination of epoxidation level via Nuclear Magnetic Resonance (NMR).
The two grades of EKOPRENA® covers a wide range of properties desirable for most of the expected applications for ENR.

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EKOPRENA® as a green material for the manufacturing of environmentally-friendly rubber products suits with the global trend towards sustainable development. This leads to waste minimization and efficient use of natural resources (eco-efficient). The use of this green material also exerts less stress to the environment and improves carbon life cycle of rubber products.
Overall Technical Performance of EKOPRENA®

EKOPRENA® - A Renewable Material for Fuel Efficient, Safe Tyres

The use of EKOPRENA® tread compound reinforced with highly disperseable silica fillers is a unique combination that offers very low rolling resistance and exceptionally high wet grip for tyres.

Dynamic Properties of EKOPRENA® Based Tread Compound

Hybrid Reinforcement of Silica and EKOPRENA®
Rolling Resistance and Wet Skid Index

Wet Skid Index vs. Rolling Resistance Index

- ENR-25 silica
- ENR-25 15/35 black/silica
- ENR-25 15/35 black/silica
- ENR-26 black
- OESBR black
- ENR-30 black
- ENR-20 black
- NR black
- NR silica

Improvement in Fuel Efficiency

Rolling Resistance

- Passenger Tyres
  - RETREADED:
    - ENR/Silica
    - SSBR/BR Silane Control

Rolling Resistance Coefficient: 10.6 to 11.8

Enhancement in Wet Grip for Safety

Wet Grip

- Wet Grip Testing
  - Tarmac: 3.2 m, 6.4 m
  - Bridport Pebbles: 6.4 m

- Michelin Energy
- ENR-25
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