Stearic Acid are the Fatty acids with long molecules of Hydrocarbon Chains with Carboxylic Acid at the end group. Stearic acid is used majority in the activator system of the Rubber Compounding and more specific for the Curing systems based on Sulfur, in the Activator-Accelerator network.

Because of the Dual nature of Hydrophobic and hydrophilic nature of the Stearic Acid, it becomes more rubber soluble and this property will be very helpful in the Activator system of the rubber compounding/mixing as this will help Zinc Oxide to convert into a rubber-soluble form in effective dispersions / solubility of Zinc Oxide into the rubber matrix. It is also acts as internal lubricant in the polymers.

Depends on the need, the stearic acid is also used in the later part of the mixing cycle to have better lubrication effect in the compound.

Many Studies were done since the usage of rubber products and the role of Stearic acid & generally in a Standard 100% NR compound, the following behaviour is noticed with the change in the dosage of Stearic acid with fixed curing systems & other raw materials.
From the above study, it is evident that the optimum dosage of Stearic Acid is in the region of 2-3 PHR for the 100% NR based standard formulation, to meet the required properties & on the filler loading level.
Kindly also note: Too high dosage of the stearic acid will end up in un-wanted blooming and also it will end up in slowing the curing of the compound in sulphur curing system (i.e. it gives the acidic effect to the compound), Also ending up in higher compression set.

Special Note: In the Sulfur-Soap curing system of Acrylic Rubber, Stearic acid is used as the Retarder upto 1.0 phr.

*The Micro Bead form of the Stearic acid helps in easier handling, in the mixing system & the processors.*

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Mass Spectroscopy standard for Stearic Acid for the Reference

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The micro bead form of the stearic acid is produced by M/s. ADANIWILMAR Group.
About the Adani Wilmar Group

Adani Wilmar Limited is a 50:50 joint venture between two recognized Multinational Corporations – the US$7 Billion Adani Group, the leader in International trading, Power Sector and Private infrastructure, and Wilmar International Limited, Singapore, Asia’s leading Agri business group with revenues exceeding US$44.7 Billion. Wilmar International Limited, founded in 1991 and headquartered in Singapore, is today Asia’s leading agribusiness group. Wilmar is ranked amongst the largest listed companies by market capitalisation on the Singapore Exchange.

Wilmar’s business activities include oil palm cultivation, oilseeds crushing, edible oils refining, sugar milling and refining, specialty fats, oleo chemicals, biodiesel & fertilizers manufacturing and grains processing. At the core of Wilmar’s strategy is a resilient integrated agribusiness model that encompasses the entire value chain of the agricultural commodity processing business, from origination and processing to branding, merchandising and distribution of a wide range of agricultural products. It has over 400 manufacturing plants and an extensive distribution network covering China, India, Indonesia and some 50 other countries. The Group is backed by a multinational workforce of approximately 90,000 people.

Wilmar is one of the world’s largest oleo chemicals manufacturers, accounting for around one-third of Asia’s fatty acid production. Their production facilities are located in China, Malaysia and Indonesia. Expansion plans are in the pipeline to establish operations in India and Europe as well as other accompanying storage locations to service our customers.