Rubber Processing and Profiting

Compounding, Mixing, Vulcanization, Extrusion, Materials, Principles
Rubber Products, Natural Rubber Processing, Rubber Reclaiming
The production of rubber and rubber products is a large and diverse industry. The rubber product manufacturing industry is basically divided into two major sectors: tyre and non-tyre. The tyre sector produces all types of automotive and nonautomotive tyres whereas the non-tyre sector produces high technology and sophisticated products like conveyor belts, rubber seals etc. The wide range of rubber products manufactured by the rubber industry comprises all types of heavy duty earth moving tyres, auto tyres, tubes, automobile parts, footwear, beltings etc.
Rubber is a polymer which is majorly classified as natural rubber and synthetic rubber. Natural rubber only contains the monomers of isoprene whereas; the synthetic rubber may contain different types of monomers. Natural rubber is coagulated latex obtained from certain types of trees that are grown in the tropics. Whereas, synthetic rubber is obtained by mixing butadiene and styrene which are two by-products of petroleum refining. About 70% of rubber consumed belongs to the category of synthetic rubbers. Manufacturers of synthetic rubbers can adapt to different chemical formulations in order to meet specific requirements of end-use industries. Rubber is processed using several chemicals to manufacture useful products such as rubber mats and automobile tires.
The rubber processing chemicals help in improving the resistance of rubber against effects of heat, oxidation, sunlight, ozone and mechanical stress. Rubber processing chemicals also improve the overall process of vulcanization. Rubber processing chemicals include a wide range of products such as antidegradants, accelerators and processing aids among others.

The global rubber processing chemicals market is expected to reach USD 6.11 billion by 2024, increasing demand for rubber products, both tire, and non-tire, exhibiting excellent durability, and superior performance under extreme weather conditions, is expected to augment rubber processing chemicals demand.
There are many reasons for the growth of the rubber additives market, such as the rising number of automobiles, footwear and consumer goods industries. The automobiles sector is growing faster with an impressive CAGR owing to rise in demand for two- and four-wheelers, with rising population as the key factor for the growth of the rubber additive industry, as automobiles mainly require the rubber for manufacturing of tires. There are a number of applications of rubber, like it’s used in making soles of shoes, use in tape manufacturing which is acts as a thermal insulation material and so on. Methods for processing rubber include mastication and various operations like mixing, calendering, extrusion, all processes being essential to bring crude rubber into a state suitable for shaping the final product.
The former breaks down the polymer chains, and lowers their molecular mass so that viscosity is low enough for further processing. After this has been achieved, various additions can be made to the material ready for cross-linking. Rubber may be masticated on a two-roll mill or in an industrial mixer, which come in different types.

**Compounding**

- Rubber is always compounded with additives
- Compounding adds chemicals for vulcanization, such as sulfur
- Additives include fillers which act either to enhance the rubber's mechanical properties (reinforcing fillers) or to extend the rubber to reduce cost (non-reinforcing fillers)
- It is through compounding that the specific rubber is designed to satisfy a given application in terms of properties, cost, and process ability
The rubber industry has been growing tremendously over the years. The future of the rubber industry is tied to the global economy. Rapidly growing automotive sector in developing economies and increased demand for high-performance tyres are expected to contribute to the growth of the global industrial rubber market. The current scenario reveals that there is a tremendous scope for the development of rubber processing industries. The global market for industrial rubber products is projected to increase 5.8% per year. Investment in rubber industry is expected to offer significant opportunities in the near future and realizing returns to investors willing to explore this sector.
This book deals with all aspects of rubber processing; mixing, milling, extrusion and molding, reclaiming and manufacturing process of rubber products. The major contents of the book are rubbers materials and processing, mixing technology of rubber, techniques of vulcanization, rubber vulcanization, rubber compounding, rubber reclaiming, manufacture of rubber products, latex and foam rubber, silicone rubber, polybutadiene and polyisoprene, styrene butadiene rubber, rubber natural etc. The book contains addresses of plant & machinery suppliers with their Photographs.
It will be a standard reference book for professionals, entrepreneurs, those studying and researching in this important area and others interested in the field of rubber processing technology.
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Once per week
Once per month
Every six months

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Niir Project Consultancy Services (NPCS) can provide Process Technology Book on Rubber Processing and Compounding

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- Steel & Steel Products
- Textile Auxiliary And Chemicals
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