

## RAYON: THE ILLUSION OF SILK

Rayon has been a fiber that has been synonymous with the name artificial silk but the name has never quite done it justice. Rayon can be seen as a chameleon fiber as its imitation doesn't stop at silk but also comes close to matching the feel of fibers such as wool, linen and cotton. The fiber is frequently used in the production of clothes because of its imitation quality being able to satisfy not only the appearance but feel that would be produced by a different fiber. The secret to Rayon's flexibility is its overall malleability as a product of its process of purification into a 100% cellulose form from a wood pulp. The process of Rayon development was discovered by Georges Audemars in its nitrocellulose variant. The type of Rayon that he had developed was engineered for the purpose of creating the look and feel of silk without having to give up the time and money that comes with manufacturing silk. Rayon has for this reason gotten the tagline of "Silk for the Masses". The use of Rayon had become very common after Audemars' 1865 discovery led to a subsequent innovation of the doublegoet spinning process.

The many variations of rayon all stem from the way the cellulose is purified and produced. To name a few examples of Rayon there are: Nitrocellulose, Viscose, Acetate, Copramonimium, Modal and Lyocell. Nitrocellulose Rayon had been patented in 1889 by Hilaire de Chardonnet after he created a method heavily reliant on nitric acid. The resulting product however was highly flammable and described as "explosive". This would be the beginning of a numerous modifications to their formula producing numerous types of fibers that have become known as rayons.

The process of creating rayons generally consists of about 17 steps with the intention to chemically deconstruct the the structure of the wood pulp's cellulose in an attempt to make a mass of pure cellulose that can be then pulled through a spinneret and create long filaments that can be used in the same way as any other yarn. One such chemical that has been used frequently in the production of rayon is carbon disulfide. This is not without much controversy. This chemical in particular is highly toxic and according to Fake Silk: The Lethal History of Viscose Rayon (Blanc 2017) a 1935 study shows that 30% of American Rayon workers suffered from work related disability. Rayon's importance in providing work in this time period however can not be questioned as seen with uses not only in apparel and home goods but also car tires. Car tires have been built with rayon post World War 2 as a cheaper alternative to the synthetic fiber nylon. (World ATLAS 2018).

Rayon is a fiber that holds so much versatility. The creation of this so called artificial silk turned out to be so much more. The fiber of rayon boasts strength and reliability that can cover so many bases. Rayon can be easily seen as an intrical part of the overall boosting of advancements in the textile industry. There are plenty of reasons to be suspicious of the environmental or personal health threats associated with Rayon but at the end of the day its benefits are undeniable.