

# ARAMID



# FIBRE

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What is Aramid fibre?



Aramid fibers are a class of heat-resistant and strong synthetic fibers. They are used in aerospace and military applications, for ballistic-rated body armor fabric and ballistic composites, in marine cordage, marine hull reinforcement, and as an asbestos substitute. The name is a portmanteau of "aromatic polyamide".

The term aramid is a portmanteau of the words aromatic and polyamide. As fabrics, aramids are used in the protective and performance clothing industries.

There are two types of aramid fibers, namely, meta-aromatic and para-aromatic polyamide.



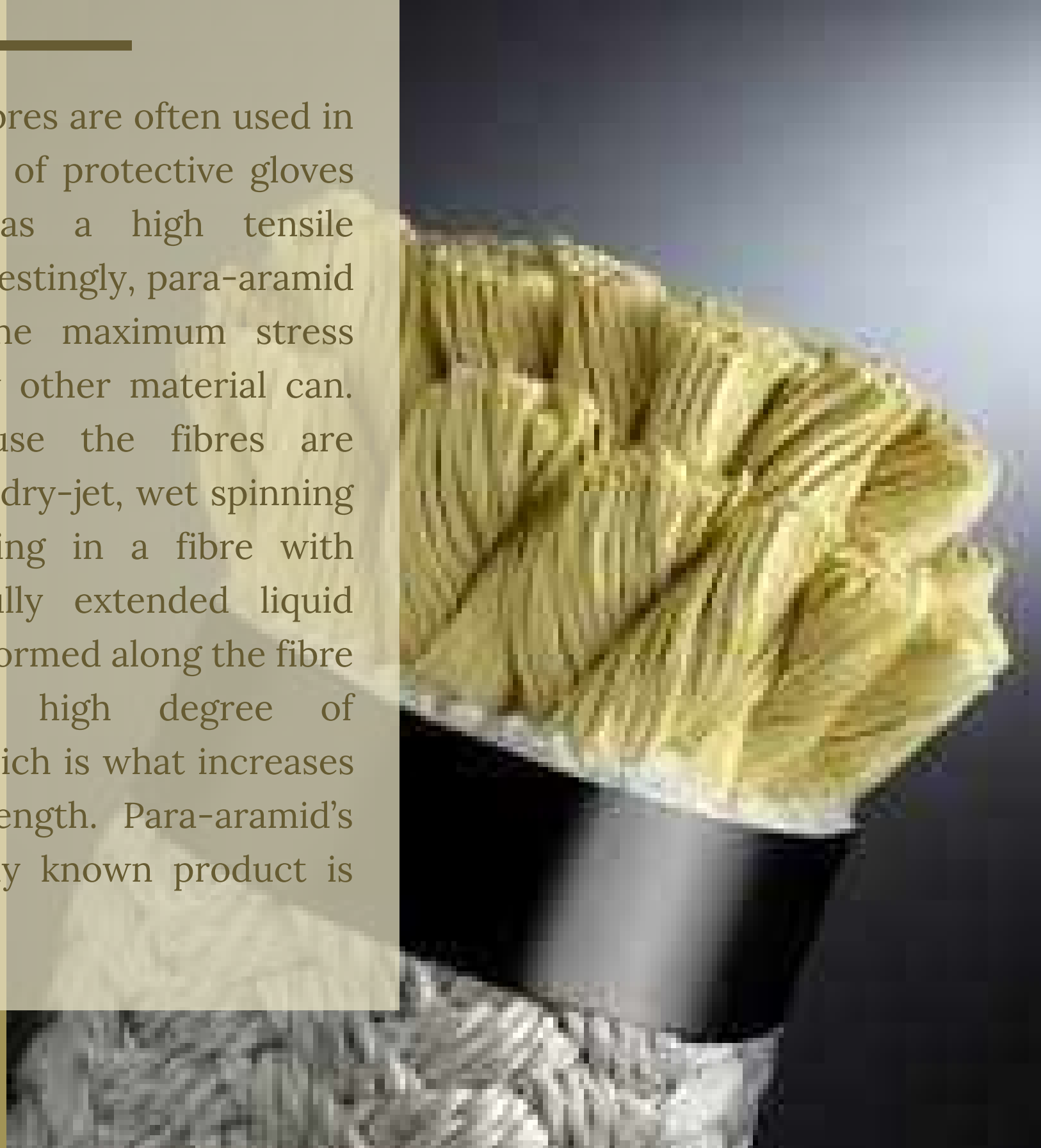
# Para-Aramid Vs. Meta-Aramid Fibres



# *Para-Aramid Fibre*

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Para-Aramid fibres are often used in the production of protective gloves because it has a high tensile strength. Interestingly, para-aramid can endure the maximum stress more than any other material can. This is because the fibres are created by the dry-jet, wet spinning method resulting in a fibre with consists of fully extended liquid crystal chains formed along the fibre axis with a high degree of crystallinity which is what increases the fibre's strength. Para-aramid's most commonly known product is Kevlar.

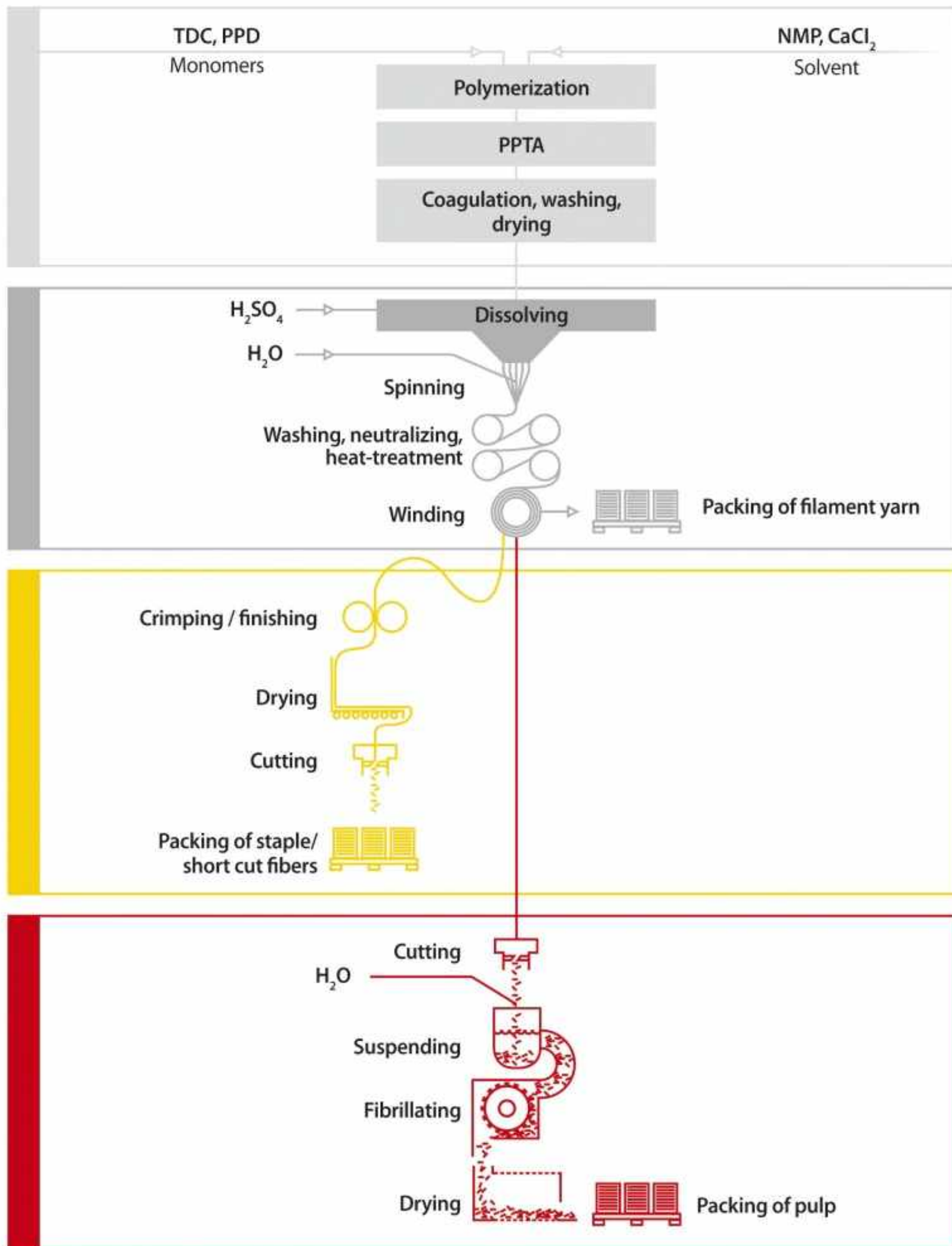




## *Para-Aramid Fibre*

*Meta-Aramid is different to para-aramid in that the fibre is usually manufactured by spinning in a chemical solution, known as wet spinning. The result is a semi-crystalline fibre with its molecular chain partially oriented along the axis of the fibre. Meta-aramid is often used in protective clothing for firefighters and other first responders because of its high resistance to temperature, chemical degradation and abrasion. Meta-aramid's most commonly known product is Nomex.*

# PROCESS



# CHARACTERISTICS

- **HIGH STRENGTH**
- **GOOD RESISTANCE TO ABRASION**
- **GOOD RESISTANCE TO ORGANIC SOLVENTS**
- **NON-CONDUCTIVE**
- **NO MELTING POINT**
- **LOW FLAMMABILITY**
- **GOOD FABRIC INTEGRITY AT ELEVATED TEMPERATURES**

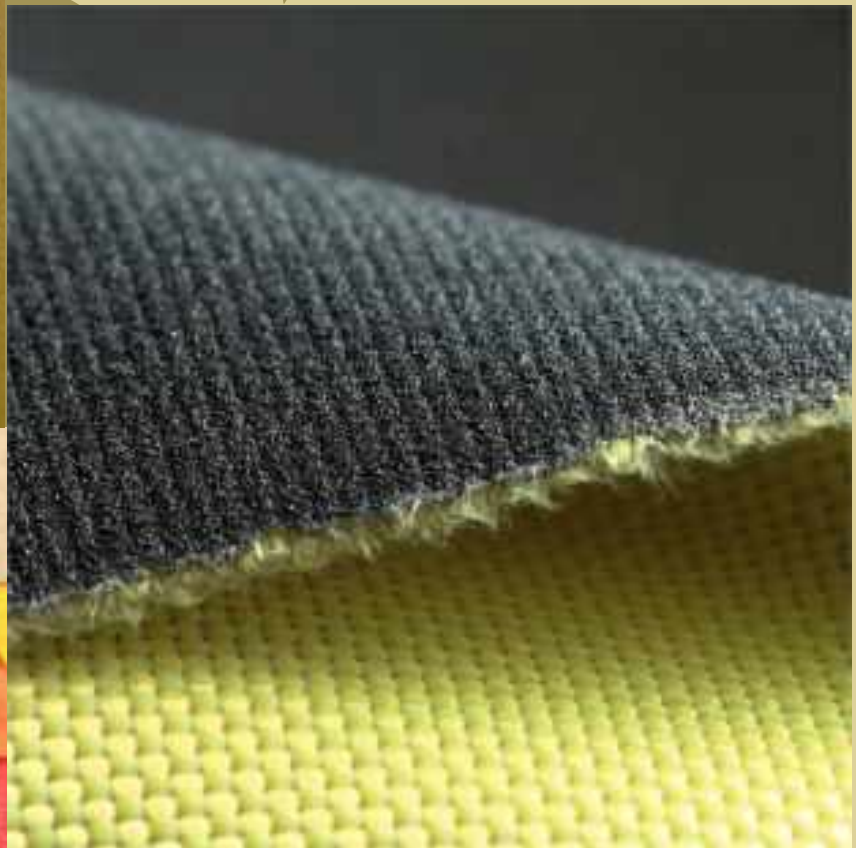


# FABRIC

*Kevlar*



*Twaron*



*Nomex*



- tactical vests
- splinter protection for automotive
- airbag hinges
- automotive
- aircraft construction
- conveyor belts and timing belts
- Flame-resistant clothing
- protective vests and helmets
- asbestos replacement
- hot air filtration fabrics
- tire and mechanical rubber goods
- reinforcement
- ropes and cable
- sail cloth
- sporting goods.
- Snowboards
- Protective
- gloves, helmets, body armour

# End Use

