

Fibre type	Fibre composition	Microscopic test	Burning test		Other test		
Cotton	Cellulose	Longitudinal: Spirally twisted tube with rough surface	In flame	Removed from flame	Solubility test	Dry tearing test	Wet tearing test
			ignites quickly, burning with a steady flame,	Continues to burn rapidly, has afterglow smells like burning paper, Light and feathery grey ash which crumbles easily	Dissolved by sulphuric acid	Short fibre ends	High wet strength
Flax	Cellulose	Cross section: irregular polygon	Takes longer to ignite and burns less quickly than Cotton	Continues to burn, smells like burning paper, Light and feathery grey ash	Dissolved by sulphuric acid	Long fibre ends	-
Wool	Keratin (protein)	Cross section: three layers-epidermis, cortex and the medulla	Burns slowly with small flickering flame	Ceases to flame, smells like burning hair, dark ash	strong alkali dissolves wool	-	-
Silk	Fibroin (protein)	Cross section: elliptical and triangular	Burning slowly, sputtering	Ceases to flame, smells like burning hair, dark ash	Dissolved by sulphuric acid	-	-
Viscose	Regenerated cellulose	Depends on spinning conditions	Burns more quickly than cotton	Continues to burn rapidly, has no afterglow, smells like burning paper, Light and feathery grey ash	Dissolved by sulphuric acid	-	Low wet strength
Acetate	Regenerated acetate	Depends on spinning conditions	burns quickly, sputters, melts, and drips	Continues to melt and burn, smells like vinegar, sets hard	Soluble in acetone and acetic acid	-	-

			like burning tar				
Polyester	Poly(ethylene- terephthalate)	Longitudinal: smooth and straight Cross section: Depends on spinneret	Fuses and shrinks away from flame, melts and burns slowly	Burns with difficulty, sets hard	Soluble in dichlorobenzene and sulphuric acid	-	-
Nylon	polyamide	Longitudinal: smooth and translucent Cross section: Depends on spinneret	Fuses and shrinks away from flame, melts	Flame ceases, smells like celery, sets hard	Soluble in formic acid and hydrochloric acid	-	-
Acrylic	Poly- acrylonitrile	Depends on spinning conditions	Fuses and shrinks away from flame flames rapidly; sputters and melts	Continues to melt and burn, sets hard	Soluble in dimethylformamide and nitric acid	-	-
Polypropylene	polypropylene	Depends on spinneret	Shrinks, melts, burns, plastic drips	Burns slowly, has sweet odor, sets hard	Soluble in xylol	-	-
Elastane	polyurethane	Cross section: fibrillar	Shrinks, melts, burns, plastic drips	sets hard	Soluble in cyclohexanone and dichlorobenzene	-	-