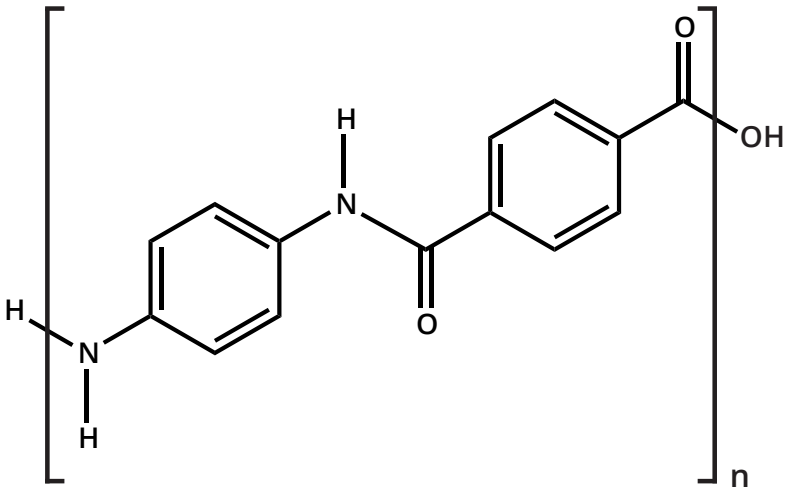
KEVLAR

POLYPARAPHENYLENE TEREPHTHALAMIDE



DISCOVERED 1965

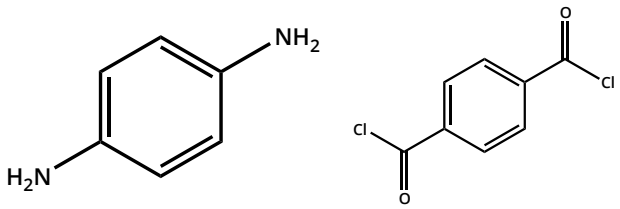
DISCOVERER Stephanie Kwolek

DENSITY 1.44g/cm^3

FIVE TIMES STRONGER THAN STEEL
(on an equal weight basis)

TWO MAIN VARIETIES
Kevlar 29 & Kevlar 49

MANUFACTURE & STRENGTH



MONOMERS: 1,4-PHENYLENE-DIAMINE & TEREPHTYALOYL CHLORIDE

Kevlar is a polymer - a very long, chain-like molecule formed by the reaction of multiple smaller molecules called monomers. Its high strength is a result of strong intermolecular hydrogen bonds between adjacent polymer molecules.

THE USES OF KEVLAR

MOBILE PHONES
Used for back casings of some mobile phones.

PING PONG PADDLES
Added to the paddles to increase bounce and reduce weight.

FORMULA 1 CARS
Used for the bodywork and petrol tanks.

BODY ARMOUR
Used for helmets, face masks and ballistic vests.

AUTOMOBILE TYRES
Used as a reinforcement material for some car tyres. Also for brake pads.

PROTECTIVE GLOVES
Used in the manufacture of gloves designed to protect from cuts & heat.

BICYCLE TYRES
Used as inner lining to prevent punctures.

FIGHTER JETS
Used in manufacture of panels and wings.

FIREPROOF CLOTHING
Kevlar offers protection from high temperatures - useful for firefighters.