Polypropylene (PP)

Belongs to the group of polyolefin and is partially crystalline and non-polar. Its properties are similar to polyethylene, but it is slightly harder and more heat resistant. It is a white, mechanically rugged material and has a high chemical resistance.

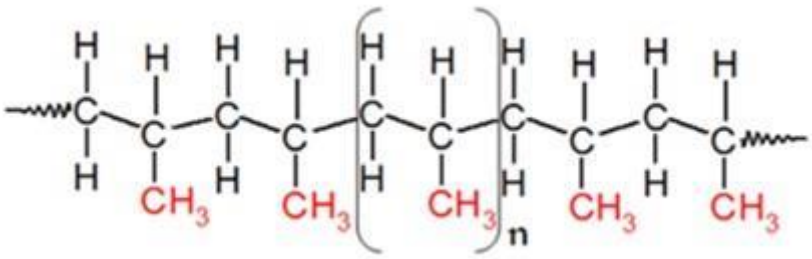
At ARK IMPEX, we offer a wide range of PPCP (Polypropylene Copolymer) and PPHP (Homo-Polymer) 2.0 to 6.0 mm welding rods in all required colours.

PROPERTIES OF POLYPROPYLENE EXTRUDED RODS

Property	ASTM	Polypropylene
Specific Gravity	D769	0.902 - 0.910
P.S.I. Tensile Strength	D638	4300 – 5500
% Elongation	D638	200.0 - 700.0
P.S.I. Comprehensive Strength	D695	5500 – 8000
Impact strength (1/2x1/2 in. notched)	D256	0.5 - 2.280 (1/8 x 1/2 In bar)
Hardness Rockwell	D785	80 -110
105 P.S.I. 73 0F Flexural Modulus	D790	1.7 - 2.5
Coefficient of friction	---	0.3
-10 4cal sec cm3 C cm Thermal Conductivity	C177	2.8
Thermal Expansion 105 per 0C	D696	5.8 - 10.2
Resistance to heat 0C (Continuous)	---	1100 C
Ω - cm (23 0C50%) Volume resistivity	D257	1016
1/8 in thickness volts mil Dielectric Strength	D149	500-650
1 KHz Dielectric constant	D150	2.2 - 2.6
1 KHz Dissipation	D150	0.0005

(power) factor		
24 / j3.2 mm% Water absorption 24 hr. 3.2 thickness, %	D570	0.01 - 0.03
in mm Burning rate	D635	0.75 - 0.82
Effect of weak acids	D534	None
Effect of strong acids	D543	Attacked slowly by oxidizing acids
Effect of weak alkalies	D543	None
Effect of Strong Alkalies	D543	Resistant
Effect of organic solvents	D543	Resistant below 800 C

Molecular Structure of Polypropylene:



Characteristics of Polypropylene:

***Chemical Resistance*:** Diluted bases and acids don't react readily with polypropylene, which makes it a good choice for containers of such liquids, such as cleaning agents, first-aid products, and more.

***Elasticity and Toughness*:** Polypropylene will act with elasticity over a certain range of deflection (like all materials), but it will also experience plastic deformation early on in the deformation process, so it is generally considered a "tough" material. Toughness is an engineering term which is defined as a material's ability to deform (plastically, not elastically) without breaking.

Fatigue Resistance: Polypropylene retains its shape after a lot of torsion, bending, and/or flexing. This property is especially valuable for making living hinges.

***Insulation*:** polypropylene has a very high resistance to electricity and is very useful for electronic components.

***Transmissivity*:** Although Polypropylene can be made transparent, it is normally produced to be naturally opaque in color. Polypropylene can be used for applications

where some transfer of light is important or where it is of aesthetic value. If high transmissivity is desired then plastics like Acrylic or Polycarbonate are better choices.

Application of PP welding rods:

- Acid tank & vessel linings
- Storage tanks
- Wall & ceiling claddings
- Fans
- Cutting boards
- PP sheets
- The Automotive Industry
- Consumer products