

# High Strength Water Swellable Rubber

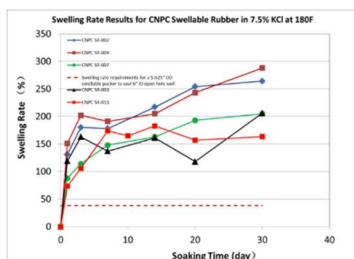
CNPC USA developed proprietary swellable rubber with high strength. A short length, small OD, multi-segment swellable packer was designed and manufactured. Our swellable packer has higher pressure rating per length than the commercial swellable packers in the market that can greatly reduce the run-in risk and provide stable isolations in downhole. The swellable rubber could have many applications in Oil and gas applications.

## APPLICATIONS

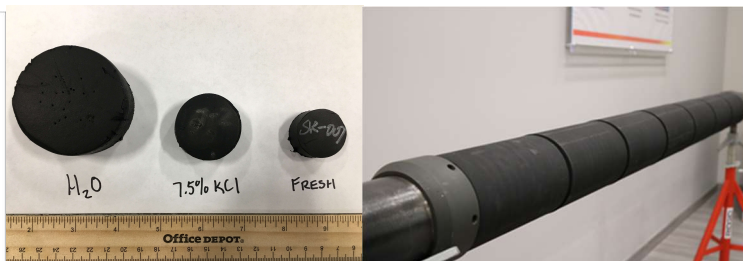
- Open hole and cased hole swellable packers
- Long-term isolation
- Effective reservoir compartmentalization
- Inflow control device completions
- Straddle assemblies
- Gravel-pack assemblies
- Multistage matrix acidizing
- Loss circulation control

## FEATURES & BENEFITS

- High tensile strength
- High sealing force (Hardness of the swellable rubber is 50% higher than that in the market)
- Temperature rating up to 300°F
- Engineered delay mechanism can be applied
- Wide adaptability of swell fluid from 0-10% salinity



Swelling rate of swellable rubber in 7.5% KCl at 180°F



swelling rubber in fresh water and 7.5% KCl at 250°F

The multi-segment swellable packer with 6 ft long swellable rubber passed 7500 psi pressure testing at 250C in 7.5%KCl

## SPECIFICATIONS

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Properties	CNPC-USA SR-007 #1	CNPC-USA SR-007 #2	CNPC-USA SR-011	Typical Swellable Rubber	Improvement (%)
Tensile strenght (psi)	1077	1072	1084	200-500	100-450
Tensile Elongation (%)	262	208	125	150	60
Hardness fresh (Shore A)	98	95	98	75	30
Hardness in 7.5%KCl at 180F (Shore A)	51	53	56	35	50
90% full swelling rate, in 7.5%KCl, at 180 °F (days)	10	15	8	20	40