

# PC-R

## (PC-R) Polycarboxylate Retarder Polycarboxylate Super Plasticizer Liquid

### Product Description:

PC-R is a mixture that slows down the chemical process of hydration so that the concrete remains plastic and workable for a long time. Retarders are used to overcome the accelerating effect of high temperature on establishing the properties of concrete in hot climates.

PC-R is based high range water-mother liquid which enables concrete to be produced with very low water to cement ratios. It does not contain added chlorides and will not promote corrosion in steel, when applied to concrete, retarding admixtures reduce the initial compressive strength relative to untreated concrete.

PC-R has been shown to greatly improve the initial workability of concrete by decreasing slump loss. And it is expected that retarded concrete when properly cured, will have the same durability as ordinary concrete of the same volume.

PC-R is high-performance aqueous dispersion agent, which is special designed for self-compacting concrete, high-performance concrete and precast components. It is key ingredient in admixture of concrete. It can improve the flow ability of concrete while significantly reduce the mixing water of concrete. It has high water-reducing to meet the performance requirements of self-compacting concrete, high-performance concrete and precast. And it also has the function on early strength.

### Standards:

Complies with the requirements of the following standards:  
ASTM C 494, Type A & F. BS EN 934-2.

### Typical Analysis:

Name of Material	PC-R Liquid
Natural Characteristics	Polycarboxylic Aqueous Solution
Appearance	Light Yellow to Red Liquid
Solid Content	% 45 ± 3%
pH Value	5~7
Specific gravity	1.1 ± 0.02
Chloride Content (%)	< 0.01
Alkali Content (%)	< 1.5

### Advantage of PC-R:

- It is expected that retarded concrete when properly cured, will have the same durability as ordinary concrete of the same volume.
- The workability of concrete is also marginally affected by retarding admixtures. They can lead to a 60-100mm more initial slump.
- The addition of retarding admixtures does not significantly alter creep or drying shrinkage, although it may increase plastic shrinkage
- Most retarding admixtures do not bring in air, but some do. Especially those based on Hydroxycarboxylic acid, which can reduce air content
- While retarding admixtures does not diminish concrete's heat production, they do delay the peak temperature rise by an amount of time equal to that by which the concrete was retarded.

**Application:**

PC-R is widely used in the production of self-compacting concrete, mass concrete, suitable for high-strength and high performance concrete, various precast.

It can significantly reduce the water consumption and improve the workability and final strength of the concrete.

When PC-R is compounded with other varieties of admixture, please pay attention on the compatibility, and it should be tested before used.

- High water-reducing rate
- Achieve high efficiency at low dosage
- Low air-entraining effect.
- Broad adaptability with many kinds of cement.
- For the preparation of various levels of pumping concrete, long-distance transport of commercial concrete.
- For a variety of civil works, high-rise reinforced concrete frame structure, Especially for highway, railway, bridge engineering, tunnel engineering, hydraulic dams, nuclear power engineering, ports, docks, and other underground facilities that require high durability of concrete large concrete structure, but also for large prestressed concrete beams, plates production , steam curing concrete and so on.

**Using Method of PC-R:**

- The recommended dosage is 0.5%~0.8% (based on weight of cementing material).The most suitable dosage should be finalized according to the materials and characters of project and tests.
- Can be mixing with water, or can be added into the concrete batching plant separately.
- Can be mixed with high plastic retention type polycarboxylate superplasticizer and all kinds of retarders.

**Storage of PCR:**

- Sealed storage if unused, storage temperature is 0~40°
- Storage period to maintain optimum performance is 24 months

**Safety Precautions of PCR:**

Polycarboxylate super plasticizer PC-R Liquid, if direct and prolonged contact with eyes and skin may cause irritation. Wash the affected area of body with plenty of tap water immediately. If irritations persist for long time, please contact with doctor.

**Packing:**

200 Kg/Drum, 1100 Kg (IBC- Tank), Tanker.

**Compatible:**

It is compatible with air-entraining agents, micro silica, accelerators and many other admixtures; however, each material should be added to the concrete separately, and with all types of cement.

**Fire:**

PC-R is non-flammable

