

Where Performance meets Economics™

Construction Chemicals

Reducer® SPC-1

**High Performance Polycarboxylate
Raw Material.**

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Product Background

Product Information

- The **SPC-1** is a polycarboxylate raw material suitable for formulating normal, mid, and high range water reducing chemical admixtures.
- The Polymer structure makes **SPC-1** suitable for both Ready-Mix and Pre-cast/Pre-Stress concrete applications.

Benefits

- Superplasticizers formulated with **SPC-1** exhibit excellent dispersing capability for all types of cementitious mixtures.
- **SPC-1** produces concrete with highly workable properties such as high slump and extended slump retention.
- With **SPC-1** based admixtures, concrete can be easily produced with very low water/cement ratios at normal to low workability.
- The excellent flowing characteristics of concrete admixed with superplasticizers formulated with **SPC-1** allow easy placement and consolidation.
- The **SPC-1** polycarboxylate is also suitable to make highly-fluidized concrete, such as self-consolidating.

Technical Data	SPC-1 Specs
Appearance	White to yellow liquid
Density (g/cm ³)	1.10 ± 0.1
pH	6.0 ~ 8.0
Solids Content (%)	40.5 ± 1.0
Chloride Content (%)	≤ 0.05%

Product Performance

Advantages

- Superplasticizers with **SPC-1** can produce high slump concrete at very low dosage with normal strength development.
- Superplasticizers with **SPC-1** can be added with the concrete mix water or at the job-site
- Concrete admixed with superplasticizers formulated with **SPC-1** exhibit the unique combination of extended slump life with minimal delay in set times.
- At high slumps and highly flowing rheology, concrete mixtures with an **SPC-1** based superplasticizer exhibit sufficient consistency to assure no segregation compared to the same concrete without a superplasticizer.
- Superplasticizers formulated with **SPC-1** produce concrete that finishes easily without stickiness or tearing.

Guidance For Use

- **SPC-1** can be easily formulated with de-foamers, other types of polycarboxylates, and many other chemical admixture raw materials.
- **SPC-1** should not be formulated with naphthalene and melamine sulfonate formaldehyde condensates. In addition, these types of products are not recommended for use in concrete admixed with polycarboxylate-based admixtures.
- **SPC-1** can be added to the concrete batch water near the end of the batching sequence, or at the job-site. Pre-testing the concrete mix should be performed before use and as conditions and materials change in order to optimize dosage rates for desired slump performance.
- 150 - 500mL/100g of cementitious material, when **SPC-1** is formulated as a 35% solution

Product Performance according to ASTM C494 Specifications

Test	Control Mix	Reductor® SPC-1	
ASTM C494 Test Protocol		Diluted to 13.5%*	
Specific Gravity	N/A	1.041	
Solid Content (%)	N/A	13.5	
Concrete Design			
Admixture Dosage Rate (oz/cwt)	N/A	5.00	
Air Entrainment Dosage Rate (oz/cwt)	0.72	0.25	
Water Reduction (%)	N/A	16.03	
Water Cement Ratio	0.555	0.466	
Plastic Properties			Difference
Slump (inches)	4.00	3.50	-0.50
Air Content (%)	5.5	5.7	-0.4
Unit Weight (lbs)	141.3	143.8	
Initial Time of Setting (min)	283	307	+24 minutes
Final Time of Setting (min)	423	385	-38 minutes
Hardened Properties			
1 day Compressive Strength	1110	1750	158%
3 day Compressive Strength	2010	2870	143%
7 day Compressive Strength	2490	3530	142%

* Without Defoamer

Storage and Handling

- The **SPC-1** is available in bulk in 1250 L (330 gal) disposable totes and in 210 L (55gal) drums. **SPC-1** contains no flammable ingredients. It will begin to freeze at approximately 0°C (32°F), but will return to uniform composition after thawing and thorough agitation.

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The above recommendations are based on extensive results done in the most professional manner. The user must try this product industrially first, to verify if the product is viable for further use. The technical information and application advice given in this **Novachem Chemical Admixtures for Concrete** publication are based on the present state of our best scientific and practical knowledge. As the information herein is of general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. These results however verified and certified by a third party, do not hold us liable in terms of performance deviations. These tests have been conducted in controlled environments. The user is responsible for checking the suitability of products for their intended use.

For further information and to request samples, please visit novachemgroup.com where a qualified technician will assist you.

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