



**GUJARAT POLYSOL
CHEMICALS LIMITED**

ISO (9001/14001) CERTIFIED

**OUR POWER OF
EXPERIENCE...**

**YOUR STRENGTH
TO PROSPER**

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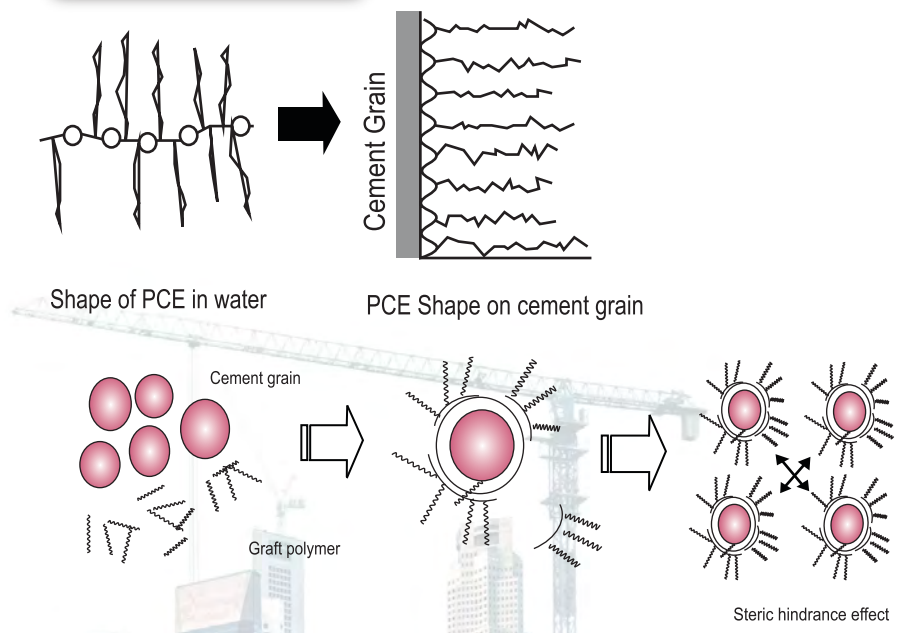
INFRA-TECH CHEMICALS



Material, which although added to concrete in negligible proportion to the total volume, are used to enhance the properties of concrete with the surfactant activity.

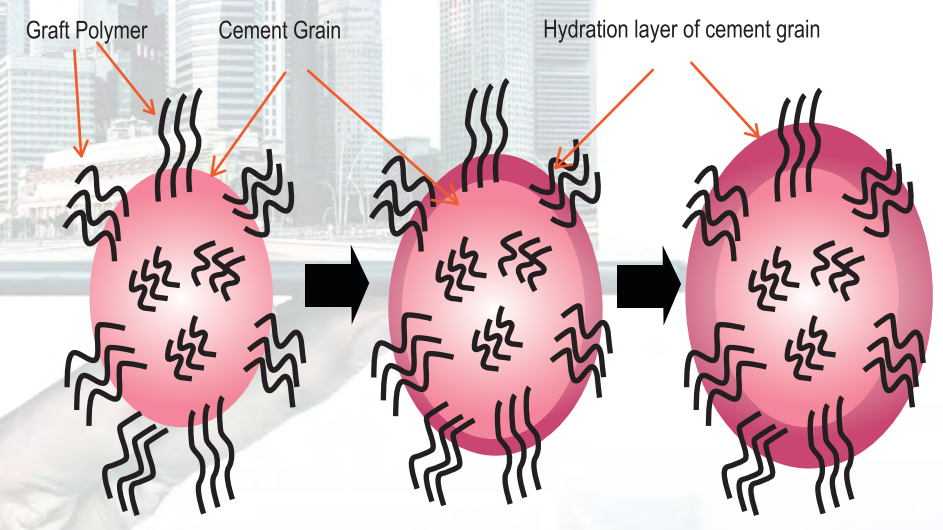
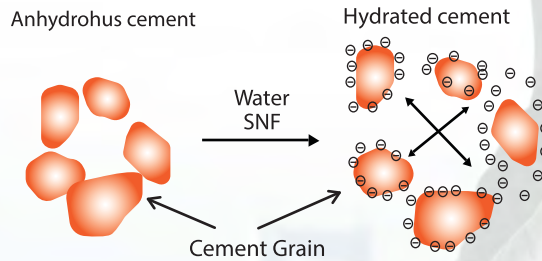
Division	Chemical structure	Features
1 Generation		<ul style="list-style-type: none"> • 1940~1950 • Improved workability of concrete. • Resistance to freeze-thawing. • Water-reducing effect and increased early strengths
2 G.		<ul style="list-style-type: none"> • 1960~ • Exerted high-range water reducing effect. • Large slump loss.
3 G.		<ul style="list-style-type: none"> • 1990~ • Excellent slump retention ability • High durability to BEST water reducing • Self-Compacting concrete.

2. Steric Hindrance



1. Electrostatic Repulsion

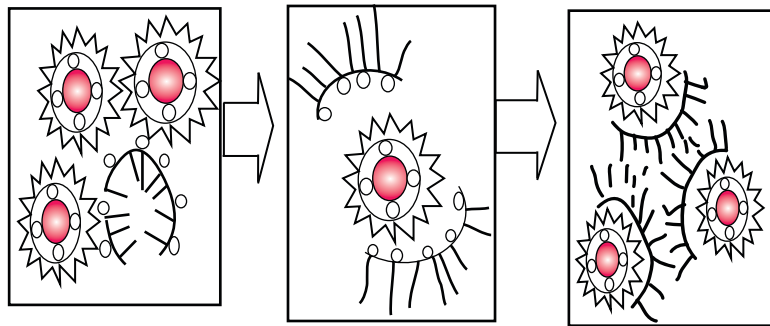
□ Dissociation to negative and positive ion in water
 □ A negative ion is adsorbed onto cement grain.
 => Formation of electrication layer:
 Electrostatic repulsion eect



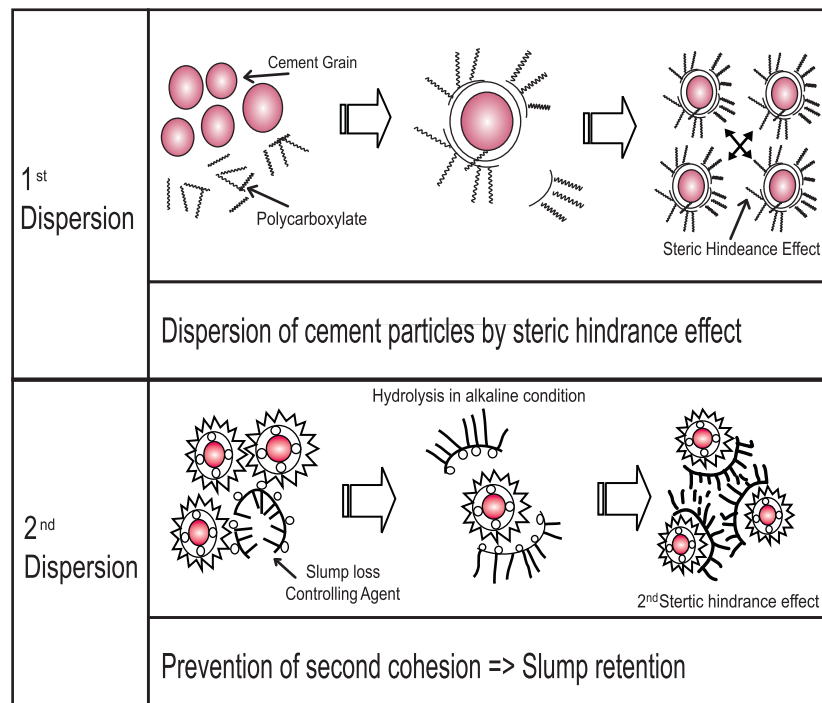
□ 1st dispersion with Graft polymer -> Growth of hydration layer on cement grain-> Encroachment of 1st dispersion effect by hydration layer -> Occurrence of slump loss by elapsed time

□ Dissociation of cement particles by electrostatic repulsion eect
 => SNF, SMF, Lignin

□ With elapsed time, ingredient for prevention of cohesion of cement hydrate is slowly released



Prevention of second cohesion => slump retention



	Normal concrete	High-Strength concrete	Ultra-Strength concrete
Compressive Strength (MPa)	35	60	120
W/C	75 - 42%	42 - 27%	27 - 16%
Cement (kg/m)	250 - 450	380 - 580	510 - 530 (excluding other mineral materials)
	Water reducing agent	Superplasticizer	Superplasticizer + Silica-fume, Fly Ash

• Water reducing capability

Water Reducer	Dosage (C X %)	Reducing capability (Up to %)
Lignin Sulfonate	1 ~ 1.5	~10
SMF	1 ~ 2	~20
SNF	1 ~ 2	~20
PCE	0.2 ~ 0.7	30 ~ 42

• Mixing availability

	Lignin Sulfonate	Melamine Sulfonate	Naphthalene Sulfonate	PCE
Lignin Sulfonate	○	○	○	○
SMF	○	○	△	×
SNF	○	△	○	×
PCE	○	×	×	○

○ : possible, △ : carefull, X: impossible

Product	Chemical Nature	Appearance	pH Level	Salt Content %	Solid Content %	End Use
SNF						
Gujmol SNF Powder	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Powder	7 - 9	Max 8	Min 95	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 22%. Higher slump with lower water – cement ratio.
Gujmol SNF-C1 Powder	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Powder	7 - 9	Max 5	Min 90	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 22%. Higher slump with lower water – cement ratio.
Gujmol SNF-C2 Powder	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Powder	7 - 9	Max 10	Min 90	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 20%. Higher slump with lower water – cement ratio.
Gujmol SNF-C3 Powder	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Powder	7 - 9	Max 20	Min 90	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 18%. Higher slump with lower water – cement ratio.
Gujmol SNF-C4 Powder	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Powder	7 - 9	Max 25	Min 90	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 18%. Higher slump with lower water – cement ratio.
Gujmol SNF Liquid	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Liquid	7 - 9	Max 4.5	43 ± 1	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 22%. Higher slump with lower water – cement ratio.
Gujmol CNF Powder	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Powder	7 - 9	Max 0.9	Min 95	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 25%. Also used where alkali–silica reaction (ASR), more commonly known as "concrete cancer". Gives excellent strength.
Gujmol CNF Liquid	Superplasticizer based on Sulphonated Naphthalene Formaldehyde condensate	Dark Brownish Liquid	7 - 9	Max 0.4	43 ± 1	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 25%. Also used where alkali–silica reaction (ASR), more commonly known as "concrete cancer". Gives excellent strength.

Product	Chemical Nature	Appearance	pH Level	Salt Content %	Solid Content %	End Use
SMF						
Gujmol SMF Powder	Superplasticizer based on Sulphonated Melamine Formaldehyde condensate	White Coloured Powder	8 - 10	Max 10	Min 95	1. High strength mortar, gypsum products, self-flowing ground, stuffing materials, grouting materials. 2. Specifically designed as an admixture for manufacture of white cement/concrete tiles.
Gujmol SMF Liquid	Superplasticizer based on Sulphonated Melamine Formaldehyde condensate	Pale Yellowish Liquid	8 - 10	Max 4	40 ± 1	1. High strength mortar, gypsum products, self-flowing ground, stuffing materials, grouting materials. 2. Specifically designed as an admixture for manufacture of white cement/concrete tiles.
SAF						
Gujmol SAF Powder	Superplasticizer based on Sulphonated Acetone Formaldehyde condensate	Brick Red Coloured Powder	8 - 11	Max 5	Min 95	Oilfield : It is a cement friction reducer Its improves fluid loss control and provide slight slurry retardation. It also reduces the apparent viscosity and improves the rheological properties of cement slurry.
Gujmol SAF Liquid	Superplasticizer based on Sulphonated Acetone Formaldehyde condensate	Brick Red Coloured Liquid	8 - 11	Max 2	30 ± 1	Oilfield : It is a cement friction reducer Its improves fluid loss control and provide slight slurry retardation. It also reduces the apparent viscosity and improves the rheological properties of cement slurry.

Product	Chemical Nature	Appearance	pH Level	Salt Content %	Solid Content %	End Use
Acrylic Polymer						
Gujmol 7647	Styrene-Acrylic Emulsion Polymer	White, Milky Liquid	9 - 10	N/A	47 ± 2	Construction industry: It is an aqueous polymer emulsion specially designed for cementitious compositions. It has excellent water proofing capability and widely used for water proofing of floors, rooftops, basements and maintenance of seepage and leakage.
Gujmol 4057	Styrene-Acrylic-Acrylamide Emulsion Polymer	White, Milky Liquid	7.5 – 8.5	N/A	57 ± 2	Construction industry: It is an aqueous polymer emulsion specially designed for cementitious compositions. It has excellent water proofing capability and widely used for water proofing of floors, rooftops, basements and maintenance of seepage and leakage.
Aluminium Sulphate						
Aluminium Sulphate Powder	Sulphuric acid, Aluminium salt (3:2), Tetradeca-Octadecahydrate.	White Coloured Free Flowing Powder	2 - 4	N/A	Min 90	Construction industry: It is widely use in the concrete technology as accelerating agent. Other Industry: It is also used as a flocculating agent in the purification of drinking water and waste water treatment plants, and also in paper manufacturing.
Aluminium Sulphate Liquid	Sulphuric acid, Aluminium salt (3:2), Tetradeca-Octadecahydrate.	Off White to Light Greenish Liquid	1.5 - 3.5	N/A	41 ± 2	Construction industry: It is widely use in the concrete technology as accelerating agent. Other Industry: It is also used as a flocculating agent in the purification of drinking water and waste water treatment plants, and also in paper manufacturing.

Product	Chemical Nature	Type	Appearance	pH Level	Solid Content %	Air Content %	End Use
PCE							
Gujplast PCF-400	Superplasticizer based on Polycarboxylate Ether	Water Reducer cum Slump Retention	Brownish Viscous Liquid	5.5 – 6.5	50 ± 1	Max 2	Construction industry: High Range water reducer cum slump retention in concrete. Water reduction in concrete up to 38 %.
Gujplast PCF-400M	Superplasticizer based on Polycarboxylate Ether	Water Reducer cum slump retention	Brownish Viscous Liquid	5.5 – 6.5	50 ± 1	Max 2	Construction industry: High Range water reducer cum slump retention in concrete. Water reduction in concrete up to 38 %.
Gujplast PCF-700	Superplasticizer based on Polycarboxylate Ether	Water Reducer	Brownish Viscous Liquid	5.5 – 6.5	50 ± 1	Max 2	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 42 %.
Gujplast PCF-750	Superplasticizer based on Polycarboxylate Ether	Water Reducer	Colourless Clear Viscous Liquid	5 – 6	50 ± 1	Max 2	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 42 %.
Gujplast PCF-800	Superplasticizer based on Polycarboxylate Ether	Water Reducer	Dark Brownish Viscous Liquid	5.5 – 6.5	50 ± 1	Max 1.5	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 42 %. Its gives high early strength.
Gujplast PCF-855	Superplasticizer based on Polycarboxylate Ether	Water Reducer	Brownish Viscous Liquid	5 – 6	55 ± 1	Max 1.5	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 42 %. Its gives high early strength.
Gujplast PCF-860	Superplasticizer based on Polycarboxylate Ether	Water Reducer	Brownish Viscous Liquid	5 – 6	60 ± 1	Max 1.5	Construction industry: High Range water reducer in concrete. Water reduction in concrete up to 42 %. Its gives high early strength.
Gujplast PCT-125	Superplasticizer based on Polycarboxylate Ether	Delayed dispersion	Colourless Clear Viscous Liquid	4 - 5	50 ± 1	Max 2.5	Construction industry: A slump retention type of PC super plasticizer with low water reduction rate. It behaves as a continuous ability in slump retention. It can be used as a slump retention modifying agent in water reducing formulation to increase the workability and slump retention ability.
Gujplast PCT-135	Superplasticizer based on Polycarboxylate Ether	Normal Slump Retention	Brownish Viscous Liquid	5.5 - 6.5	50 ± 1	Max 2	Construction industry: Normal Range water reducer cum slump retention in concrete. Water reduction in concrete up to 36 %. Gives excellent rheology.

Product	Chemical Nature	Type	Appearance	pH Level	Solid Content %	Air Content %	End Use
PCE							
Gujplast PCT-135F	Superplasticizer based on Polycarboxylate Ether	Slump Retention	Brownish viscous liquid	6 - 7	55 ± 1	Max 2.5	Construction industry: A slump retention type of PC super plasticizer with average water reduction rate. It behaves a continuous ability in slump retention.
Gujplast PCT-151	Superplasticizer based on Polycarboxylate Ether	Slump Retention	Colourless Clear Viscous Liquid	5 - 6	50 ± 1	Max 2.5	Construction industry: A slump retention type of PC super plasticizer with average water reduction rate. It behaves as a continuous ability in slump retention.
Gujplast PCT-155	Superplasticizer based on Polycarboxylate Ether	Slump Retention	Brownish Viscous Liquid	6 - 7	55 ± 1	Max 2.5	Construction industry: A slump retention type of PC super plasticizer with average water reduction rate. It behaves as a continuous ability in slump retention.
Gujplast PCT-165	Superplasticizer based on Polycarboxylate Ether	Delayed dispersion modifier	Colourless Clear Viscous Liquid	3 - 4	55 ± 1	Max 2.5	Construction industry: A slump retention type of PC super plasticizer with low water reduction rate. It behaves as a continuous ability in slump retention. It can be used as a slump retention modifying agent in water reducing formulation to increase the workability and slump retention ability. It gives excellent rheology and soft mix.
Gujplast PCF-3714	Superplasticizer based on Polycarboxylate Ether	Water Reducer cum Slump Retention	Cream Colour Powder	5 - 7	Min 95	Max 1.0	Construction industry: Water reducer and slump retainer in micro concrete, grouts, dry mortar.
Gujplast PCF-1529	Superplasticizer based on Polycarboxylate Ether	Water Reducer cum Slump Retention	Light Reddish Colour Powder	5 - 7	Min 95	Max 1.0	Construction industry: High range water reducer in micro concrete, grouts, dry mortar. Gives excellent high early strength
Gujplast PCF-9219	Superplasticizer based on Polycarboxylate Ether	Water Reducer cum Slump Retention	White Colour Powder	8 - 10	Min 95	Max 1.0	Construction industry: High range water reducer in micro concrete, grouts, dry mortar. Gives excellent high early strength
Gujplast PCA-510	Superplasticizer based on Polycarboxylate Ether	Water Reducer cum Slump Retention	Brownish viscous liquid	6.0 - 7.0	55 ± 1	Max 2.5	Construction industry: A slump retention type of PC super plasticizer with average water reduction rate. It behaves a continuous ability in slump retention.