



ebuchem[®]
CONSTRUCTION CHEMICALS

Cement and Concrete Admixtures

www.ebuchem.com

Concrete Admixtures

**Ultra High-Performance
Concrete Admixtures**

**Self-Compacting Concrete
Admixtures**

Pumping Aids

Waterproofing Admixtures

Air Entraining Admixtures

Set Retarding Admixtures

**New Generation
Superplasticizing Admixtures**

**High-range Water Reducing /
Superplasticizing Admixtures**

**Water Reducing /
Plasticizing Admixtures**

We produce for you...

AFA INVEST is an investment and trade company based in Turkey. With our strong financial capacity and resources, and our wide range of production facilities, partners, products and connections, we stand very strong and firmly in the Turkish market, allowing us to offer consultancy services or product based trade opportunities for our foreign business partners.

Investment; Operating in diverse fields of financial- and real estate investments, we directly invest or offer consultancy for the investment in industrial projects, tourism-, health- and education sector.

Products; Afa Invest is specialized in a number of products and exports them all over the world due to its competitive prices and service during the delivery. Some of our featured products are construction chemicals, flooring systems, furniture, carpet, bathroom accessories, mosque woodwork, chandeliers and carpet, medicine, medical products, food and beverage, hotel related products and marble.

Service; Afa invest also delivers services in the tourism industry, interior design sector and as international forwarder.

EBUCHEM was founded by a team of professionals with vast experiences in the construction chemicals business. With our Vision 2050 our products ensure quality and eminence.

We manufacture, design and supply the finest range of construction chemicals, specializing in waterproofing materials, coatings, flooring, and repairing and filling materials. We take pride in our extensive range of building materials that are designed to meet the diverse needs of the construction industry. From foundations to roofs, our products are meticulously crafted to ensure durability, strength, and performance.

Today, with our production facilities throughout Turkey, and an extensive partner network around the globe our company operates mainly in the MENA area. At Ebuchem, we are passionate about innovation, customer satisfaction and building lasting relationships with utmost care and respect to the community, employees, suppliers and environment. Ebuchem offers a wide range of construction chemicals which includes Waterproofing Materials such as Non-shrink Grouts, Concrete Repair Systems, Surface Treatments, Bonding Agents, Floorings & Coatings, Sealants, Tile Adhesives, Grouts and Admixtures.

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Polycarboxylate Copolymer for Concrete Admixtures

Product Definition

EBUSET PC 300 is a high early strength polycarboxylate copolymer designed for the production of polycarboxylate based chemical admixtures for concrete. EBUSET PC 300 provides to high slump retention performance.

Advantages and Properties

- Provides excellent water reduce in concrete.
- Enables to produce flowable concrete mixtures with low water to binder ratios.
- Improves the early and ultimate strength of concrete.
- Provides high workability retention without significantly affecting the setting time of cement.

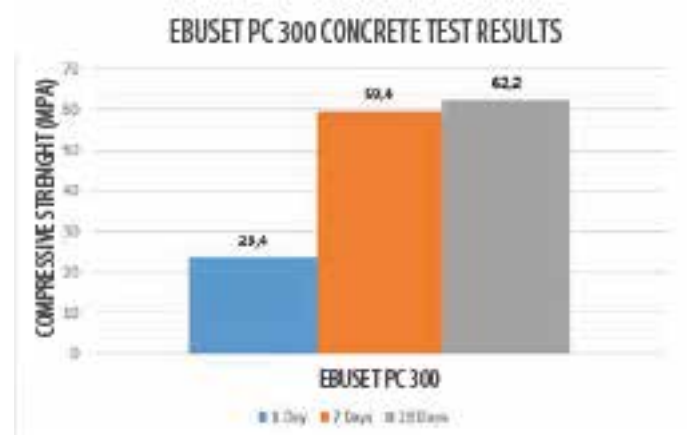
Test Results

Concrete Mix Design					
Ceml 42,5R kg	W/C %	Fine Agg. %	Coarse Agg. %	Admixture % of Cem	Air Content %
350	40%	53%	47%	0.5%	1.8%

Test Results					
Slump/Flow (mm)			Compressive Strength (Mpa)		
Initial	30 min.	60 min.	1 day	7 days	28 days
650	650	650	23.4	59.4	62.2

Technical Properties

Colour and form	Yellowish – Liquid
Chemical base	Polycarboxylate Copolymer
Density (kg/ltr)	1.090 – 1.130 (at +20°C)
pH	3.0 – 7.0
Solid Content %	55.0 ± 2.0



Polycarboxylate Copolymer for Concrete Admixtures

Product Definition

EBUSET PC 355 is a high early strength polycarboxylate copolymer designed for the production of polycarboxylate based chemical admixtures for concrete.

Advantages and Properties

- Provides excellent water reduce in concrete.
- Enables to produce flowable concrete mixtures with low water to binder ratios.
- Improves the early and ultimate strength of concrete.
- Provides high workability retention without significantly affecting the setting time of cement.

Technical Properties

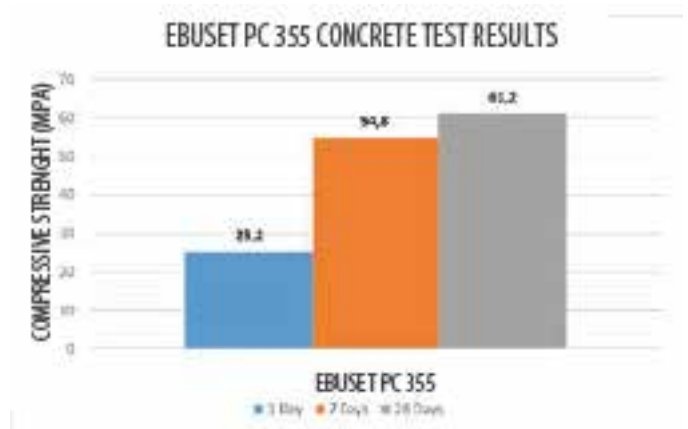
Colour and form	Yellowish, Clear – Liquid
Chemical base	Polycarboxylate Copolymer
Density (kg/ltr)	1.90 – 1.30 (at +20 °C)
pH	3.0 – 7.0
Solid Content %	55.0 ± 2.0



Test Results

Concrete Mix Design					
Ceml 42,5R kg	W/C %	Fine Agg. %	Coarse Agg. %	Admixture % of Cem	Air Content %
350	40%	53%	47%	0.5%	1.8%

Test Results					
Slump/Flow (mm)			Compressive Strength (Mpa)		
Initial	30 min.	60 min.	1 day	7 days	28 days
650	650	630	23.2	54.8	61.2



Polycarboxylate Copolymer for Concrete Admixtures

Product Definition

EBUSET PC 350 is a high early strength polycarboxylate copolymer designed for the production of polycarboxylate based chemical admixtures for concrete.

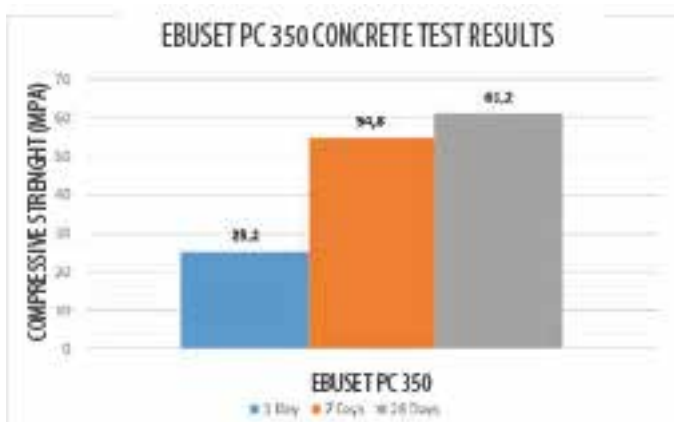
Advantages and Properties

- Provides excellent water reduce in concrete.
- Enables to produce flowable concrete mixtures with low water to binder ratios.
- Improves the early and ultimate strength of concrete.
- Provides high workability retention without significantly affecting the setting time of cement.

Test Results

Concrete Mix Design					
Ceml 42,5R kg	W/C %	Fine Agg. %	Coarse Agg. %	Admixture % of Cem	Air Content %
350	40%	53%	47%	0.5%	1.8%

Test Results					
Slump/Flow (mm)			Compressive Strength (Mpa)		
Initial	30 min.	60 min.	1 day	7 days	28 days
650	650	630	23.2	54.8	61.2



Technical Properties

Colour and form	Yellowish, Clear – Liquid
Chemical base	Polycarboxylate Copolymer
Density (kg/ltr)	1.090 – 1.130 (at +20 °C)
pH	3.0 – 7.0
Solid Content %	55.0 ± 2.0



Monofilament macro-synthetic copolymer fiber for concrete

Product Definition

EBUFIBER 140 is a monofilament macro-synthetic copolymer fiber which is added to fresh concrete or mortar for preventing plastic shrinkage cracks, plastic settlement cracks and reducing crack intensity and width. EBUFIBER 140 has 54 mm length with a rectangular cross-section (0.10 x 1.5 mm, nominal). EBUFIBER 140 is a high performance synthetic fiber which can be used as a secondary reinforcement as well as a primary reinforcement in some special cases.

Use

EBUFIBER 140 is recommended for use in the applications and purposes below.

- Effective crack control in large area industrial floors and concrete covers.
- Culverts, concrete curbs and water structures.
- Precast concrete elements and wall panels
- Concrete parking lots, ramps and loading areas.
- Floors and slabs.
- For improving fire and high temperature resistance of concrete.
- Extruded concretes.
- Repair mortars.



Advantages and Properties

- Reduces plastic shrinkage and plastic shrinkage risk.
- Increases the energy absorbing capacity of concrete.
- Increases the flexural strength and tensile strength of concrete.
- Prevents crack formation and reduces crack density.
- Reduces the permeability of concrete and improves durability.
- Increases cohesion of fresh concrete and reduces bleeding.
- Reduces the amount of mesh reinforcement in light loaded slab on grades.
- Homogeneously disperses without flocculating due to its special surface characteristics.
- Present high bondibg capacity to cementitious matrix.
- EBUFIBER 140 completely melts and decomposes around 200 °C and 365 °C, respectively. Decomposition causes mass loss in the material and the voids left from the decomposed fibers act as interconnected channels allowing the escape of expanded air and prevents the cracking of concrete due to the high temperature. By this mechanism EBUFIBER 140 improves the fire resistance of concrete.
- Provides very effective crack control if used along with steel mesh reinforcement.
- Improves impact and abrasion resistance of concrete.
- Prevents pop-outs and cracks due to freeze and thaw cycles.
- Alkali resistant and non-corrosive material.

Application Details, Suggestions and Warnings

- EBUFIBER 140 is available in plastic bags of 1.0 kg or 5.0 kg.
- An effective mixing is needed for homogeneous fiber distribution without clogging.
- EBUFIBER 140 can be used any type of cementitious matrix produced with the cement and chemical admixture types described in EN 197-1 and EN 934-2, respectively. In addition, it can be used mineral admixture such as F or C class fly ash, ground granulated blast furnace slag, silica fume and metakaolin incorporated concretes. Trial mixes are recommended for use in different type of binders.
- Standard curing procedures for normal concretes should also be applied to EBUFIBER 140 fiber incorporated concretes.
- EBUFIBER 140 fiber is capable of load-induced crack density in the section. On the other hand its reinforcing efficiency is usually not enough for flexural members like beams and floor slabs. However, EBUFIBER 140 can be used in slab-on-grade industrial floors and cover concretes as main or secondary reinforcement. For reinforcing purposes, the required dosage should be determined based on an engineering analysis.
- Reduces crack risk in thin section concretes not requiring reinforcement.
- Joints should be arranged normally. EBUFIBER 140 does not remove the need of joint arrangement in large-area concretes.
- EBUFIBER 140 may negatively influence the workability of concrete particularly in high dosage rates. Increasing the paste volume, decreasing the maximum aggregate size and content is recommended for EBUFIBER 140 incorporated concretes. The flowability of mixture should be enhanced by superplasticizers. The cohesion and the stickiness of the mixture should be as high as possible to avoid fiber appearance on the concrete surfaces.
- Excessive dosage may severely influence the workability of mixture and may increase the porosity of concrete due to the flocculation of the fibers.

Recommended Dosage and Mixing Procedure

The recommended dosage of EBUFIBER 140, depending on the application and the target performance, are in between 1.0 – 6.0 kg for 1 m³ concrete. The ideal incorporation method of EBUFIBER 140 is a gradual adding the fibers to fresh concrete during mixing in the mixer. In ready- mix concrete plants, EBUFIBER 140 is practically incorporated to concrete mixer by homogeneous laying out the fibers onto the aggregates travelling on the conveyor belt. If the production conditions are available, EBUFIBER 140 fibers should be dispersed first by mixing with the half of the mixing water and a high-speed mixing should be applied after adding the remaining concrete ingredients. If it is needed, EBUFIBER 140 can also be added to fresh concrete directly. In such a case, the whole package of 1 kg should not be added at a time, instead a gradual adding should be achieved for avoiding a possible fiber interlocking in concrete.

For obtaining more homogeneous fiber distribution an extra mixing time (3 – 5 minutes at normal transportation rotation speed, at least 70 round) should be applied. For technical assistance please contact R&D department of Ebuchem.

Technical Properties

Color	White
Chemical structure	Synthetic copolymer
Nominal density (g/cm ³)	0.91 (EN 13392)
Water absorption	Not absorbent
Elliptical diameter,D1 (mm)	0,35 ± 0,01
Elliptical diameter,D2 (mm)	0,55 ± 0,01
Fiber length (mm)	54 ± 4
Equivalent fiber diameter (mm)	0.450 (acc. to EN 14889 – 2)
Number of fibres per kg	185.000 (± % 1)
Tensile strength Rm (MPa)	>600
Modulus of elasticity (MPa)	~ 8000 (between %10 Rm—%30 Rm)
Elongation at break (%)	~ 9
Melting temperature (°C)	200
Ignition point (°C)	365
Heat and electrical conductivity	Low
Acid resistance	High
Alkali resistance	High
Corrosion resistance	Does not corrode
Technical Advantages	
Plastic shrinkage crack control	☺☺☺
Drying shrinkage crack control	☺☺☺
Pumpability	Low dosage:☺☺☺ Normal dosage:☺☺ High dozaj: ☺
Uniform distribution	☺☺☺
Surface finishing works	☺☺☺
Secondary reinforcing performance	Low dosage:☺ Normal dosage:☺☺ High dosage: ☺☺☺
Post-crack load carrying performance	Low dosage:☺ Normal dosage:☺☺ High dosage: ☺☺☺

Cleaning of Tools

Concreting tools contact with EBUFIBER 140 incorporated concrete can be easily cleaned mechanically.

Packaging and Storage

Plastic bags of 1.0 kg and 5.0 kg.

Shelf life is 36 months. Should be stored in a dry and clean place.

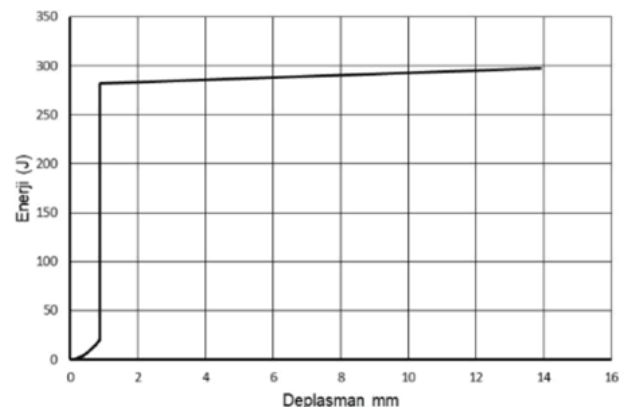
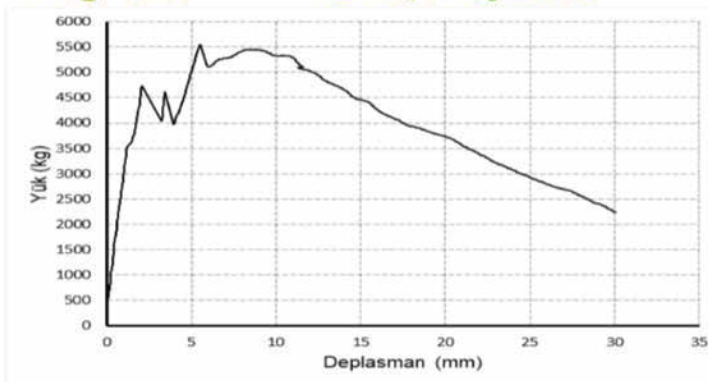
Security and Health

EBUFIBER 140 is not a toxic or harmful material. Please refer to Material Safety Data Sheet (MSDS).

Legal Liability

The technical recommendations in this product data sheet are based on the experimental studies performed on reference concrete mixtures designed in the R&D laboratories of EBUKHEM. The results may not be applicable to different concrete mixtures produced with different materials than the ones used in the experiments in EBUKHEM. All customers and users are required to determine the appropriate EBUKHEM products for their intended use and to test the suitability of EBUKHEM product for their application. Please contact EBUKHEM for the appropriate product selection and usage details. EBUKHEM is not responsible for the improper usage of the products.

4 kg/m³----- 1073,74 joule



High-Range Water Reducing / Superplasticizing / Set Accelerating Raw material for Concrete Admixtures

Product Definition

EBUSET WR CON 100 is vinyl acetate maleic anhydride copolymer designed for high water reducing and early strength enhancement in concrete admixture formulations as raw material.

Advantages and Properties

- Enables high workability at low water / cement ratio.
- Increases early strength of the concrete as concrete reduces mixing water at high rate.
- Provides ease in the placement and pumping.
- Provides high workability and compaction of concrete, shortens vibration time.

Use

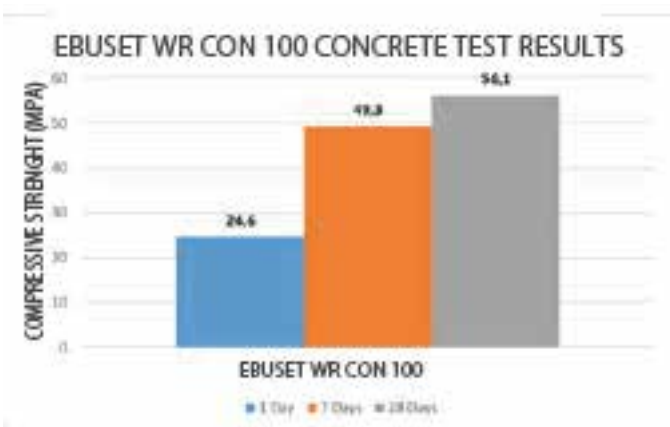
EBUSET WR CON 100 used in the conditions and applications below.

- Provides high performance with high Methylene Blue aggregates.
- Precast concrete production.
- Used in concrete admixtures formulations where high water reducing and early strength are desired.
- Suitable for use in pump and non-pump ready-mixed concrete production.

Application Details

EBUSET WR CON 100 used in the conditions and applications below.

- EBUSET WR CON 100 is generally compatible in use chemical admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate and Polycarboxylate based raw materials. The appropriate dosage according to concrete class and properties should be determined to trial batches.



Technical Properties

Colour and form	Brown – Greenish Liquid
Chemical base	Vinyl acetate maleic anhydride copolymer
Density (kg/ltr)	1.14 – 1.18 (at +20 oC)
pH	4.0 – 8.0
Solid Content %	30.0 ± 2.0



Test Results

Concrete Mix Design					
Ceml 42,5R kg	W/C %	Fine Agg. %	Coarse Agg. %	Admixture % of Cem	Air Content %
350	35%	53%	47%	1.0%	1.8%

Test Results					
Slump/Flow (mm)			Compressive Strength (Mpa)		
Initial	30 min.	60 min.	1 day	7 days	28 days
650	600	5700	24.6	49.3	56.1

High Rate Water Reducing / Superplasticizing Chemical Admixture Raw Material

Product Definition

EBUSET WR 455 is a mixture of organic and inorganic compounds, especially designed for high rate water reducing admixtures.

Use

EBUSET WR 455 is used in the following conditions and applications.

- In high rate water reducing admixture formulations requiring good workability and slump retention.
- In admixture formulations designed for tight reinforced structural elements such as columns, shear wall and beams.
- In admixture formulations designed for Industrial floor.
- It allows economical design of polycarboxylate admixtures.

Advantages and Properties

- Owing to its organic and inorganic compounds, EBUSET WR 455 is highly compatible with polycarboxylate based admixtures, besides high dosages allows more economical admixture cost.
- EBUSET WR 455 shortens the setting time of the concrete when it is used in higher dosages instead of other raw materials that retards the setting time.
- In the admixture recipes the use of EBUSET WR 455 in an appropriate dosage provides a greater ease of workability, makes the concrete easier to mix, transport, place in the formwork and compact concrete.
- EBUSET WR 455 preserves the consistency of concrete for longer than reference blank concrete.
- EBUSET WR 455 improves final strength.
- EBUSET WR 455 improves strength and durability by achieving the targeted consistency class with a lower water / binder ratio.

Application Details

EBUSET WR 455 is compatible to use in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate, Vinyl copolymer and Polycarboxylate based raw materials.

Technical Properties

Colour and form	Brownish – Liquid
Chemical base	Mix of organic and inorganic compound
Density (kg/ltr)	1.200 – 1.240 (at +20°C)
pH	7.0 - 11
Solid Content %	40.0 ± 2.0



High Rate Water Reducing / Superplasticizing Chemical Admixture Raw Material

Product Definition

EBUSET WR 500 is a mixture of organic and inorganic compounds, especially designed for high rate water reducing admixtures.

Use

EBUSET WR 500 is used in the following conditions and applications.

- In high rate water reducing admixture formulations requiring good workability and slump retention
- It can be used as an alternative to Ligno Sulfonate in chemical additive formulations.
- It allows economical design of polycarboxylate admixtures.

Advantages and Properties

- Owing to its organic and inorganic compounds, EBUSET WR 500 is highly compatible with polycarboxylate based admixtures, besides high dosages allows more economical admixture cost.
- In the admixture recipes the use of EBUSET WR 500 in an appropriate dosage provides a greater ease of workability, makes the concrete easier to mix, transport, place in the formwork and compact concrete
- EBUSET WR 500 preserves the consistency of concrete for longer than reference blank concrete.
- EBUSET WR 500 improves strength and durability by achieving the targeted consistency class with a lower water / binder ratio.

Application Details

EBUSET WR 500 is compatible to use in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate, Vinyl copolymer and Polycarboxylate based raw materials.

Technical Properties

Colour and Form	Brownish – Liquid
Chemical Base	Mix of organic and inorganic compound
Density (kg/ltr)	1,19 – 1,23 (at +20°C)
pH	3,0 – 7,0



High Rate Water Reducing / Superplasticizing Chemical Admixture Raw Material

Product Definition

EBUSET WR 550 is a mixture of organic and inorganic compounds, especially designed for high rate water reducing admixtures. It can be used in plasticizer formulations designed for cold weather.

Use

EBUSET WR 550 is used in the following conditions and applications.

- In high rate water reducing admixture formulations requiring good workability and slump retention
- In concrete admixture formulations that require early high strength and are designed for cold weather conditions,
- It can be used as an alternative to Ligno Sulfonate in chemical additive formulations.
- It allows economical design of polycarboxylate admixtures.

Advantages and Properties

- Owing to its organic and inorganic compounds, EBUSET WR 550 is highly compatible with polycarboxylate based admixtures, besides high dosages allows more economical admixture cost.
- It provides an advantage in cold weather conditions as it has high early strength.
- In the admixture recipes the use of EBUSET WR 550 in an appropriate dosage provides a greater ease of workability, makes the concrete easier to mix, transport, place in the formwork and compact concrete
- EBUSET WR 550 preserves the consistency of concrete for longer than reference blank concrete.
- EBUSET WR 550 improves strength and durability by achieving the targeted consistency class with a lower water / binder ratio.

Application Details

EBUSET WR 550 is compatible to use in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate, Vinyl copolymer and Polycarboxylate based raw materials.

Technical Properties

Colour and Form	Brownish – Liquid
Chemical Base	Mix of organic and inorganic compound
Density (kg/ltr)	1,22 – 1,28 (at +20°C)
pH	3,0 – 7,0
Solid Content %	45,0 ± 2,0



Water Reducing / Plasticizing / Set Retarding Chemical
 Admixture Raw Material

Product Definition

EBUSET RETARD 520 is a synthesized L_Glucose Based Sodium Salt specially designed for highly water reducing admixtures.

Use

EBUSET RETARD 520 is used in the following conditions and applications.

- In high rate water reducing admixture formulations requiring good workability and slump retention.
- It allows economical design of polycarboxylate admixtures.

Advantages and Properties

- Owing to its organic and inorganic compounds, EBUSET RETARD 520 is highly compatible with polycarboxylate based admixtures, besides high dosages allows more economical admixture cost.
- EBUSET RETARD 520 increase the setting time of the concrete
- In the admixture recipes the use of EBUSET RETARD 520 in an appropriate dosage provides a greater ease of workability, makes the concrete easier to mix, transport, place in the formwork and compact concrete.
- EBUSET RETARD 520 preserves the consistency of concrete for longer than reference blank concrete.
- EBUSET RETARD 520 improves strength and durability by achieving the targeted consistency class with a lower water / binder ratio.
- It provides performance in admixtures used for high methylene acetates.

Application Details

EBUSET RETARD 520 is compatible to use in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate, Vinyl copolymer and Polycarboxylate based raw materials.



Technical Properties

Colour and form	Clear- yellowish – Liquid
Chemical base	Synthesized L_Glucose Based Sodium Salt
Solid Content	%65 ±2
Density (kg/lt)	1,30 – 1,36 (at 20°C)
Sulphate	≤ 3 ppm
pH	4.0 – 8.0
Cloride	≤ 0,05 %



High-Range Water Reducing / Superplasticizing / Set Accelerating Raw material for Concrete Admixtures

Product Definition

EBUSET ACC 400 is a Melamine Sulfonate based raw material designed for high water reducing and early strength enhancement in concrete admixture formulations as raw material.

Use

The EBUSET ACC 400 is used in the following conditions and applications..

- Used in Glass Reinforced Concrete(GRC) application.
- In the production of prestressed concrete with low water / cement ratio,
- In precast and prefabricated concrete production,
- Where early demolding is desired
- Reoplastic concretes which can easily be placed on dense reinforced concrete elements.
- It is suitable for use in concrete structural elements produced with zero slump.

Application Details

- The early and final strength of the admixture formulated with ACC 400 is increased compared to unleaded concrete. Increases compressive and flexural strength of ACC 400 formulated additive compared to concrete without admixture
- Early high-strength concrete production is achieved even at low temperatures.
- Shorten the mold removal time.
- Increases the abrasion resistance of concrete by reducing segregation and bleeding.
- Increases durability of concrete against freeze-thaw cycle.
- Improves concrete's mechanical properties such as impermeability, durability, shrinkage and creep.
- Saves energy in heat curing of concrete. Concrete could be placed with less vibration even in dense reinforced concrete structures.
- EBUSET ACC 400 is generally compatible in use chemical admixture recipes with Naphthalene Sulfonate, Lignin Sulfonate and molasses based raw materials.

Technical Properties

Colour and form	Colourless Clear Liquid
Chemical base	Melamine Formaldehyde resin
Density (kg/ltr)	1.200 – 1.240 (at +20 °C)
pH	7.0 – 11.0
Solid Content %	40.0 ± 2.0



Defoamer for Concrete / Cement Admixtures

Product Definition

EBUMIX Defoamer controls and prevents air introduction during production and transportation of cement and concrete products.

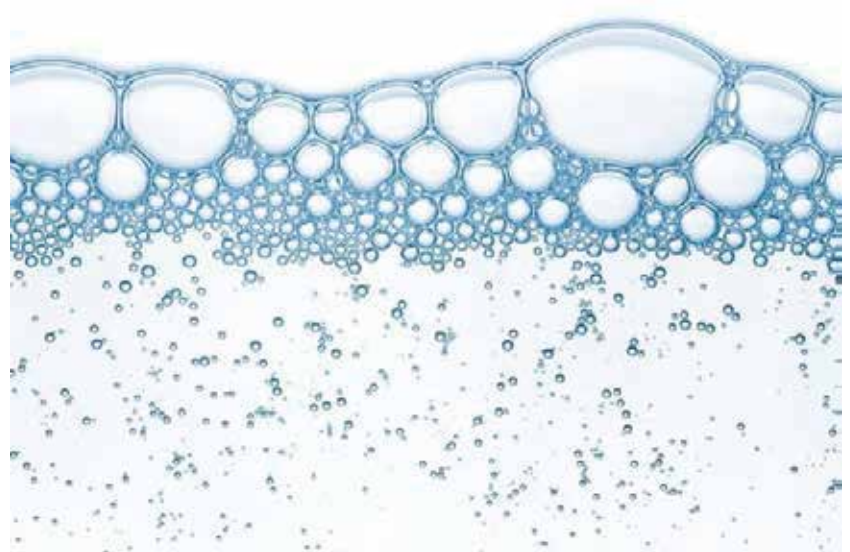
Application Details

EBUMIX Defoamer is used in cement and concrete application as air controlling agent. EBUMIX Defoamer is normally blended in PCE base plasticizer.

The dosage is normally determined with laboratory tests due to different behaviour of concrete admixtures. As an indication, dosage is between 0,05-0.15% on the concrete admixtures.

Technical Properties

Colour and form	Pale Yellowish- liquid
Density	0,970-1,010
pH	4-8
Water Solubility	Dispersible



Set Accelerating Chemical Admixture Raw Material

Product Definition

Calcium Nitrate, also called Norgessalpeter (Norwegian salt meter), is an inorganic compound with the formula $\text{Ca}(\text{NO}_3)_2$.

Use

Calcium Nitrate is used in the following conditions and applications.

- It is used as set accelerator and quality enhancer in the production of concrete and cement chemicals.
- In cold climate concreting.
- Calcium Nitrate is a very common coagulant in latex production, especially in dipping processes.
- Calcium Nitrate can be used as part of the fused salt mixtures.
- Can be used in fertilizers, explosives and pyrotechnics.
- It is used to eliminate calcium deficiency in agricultural plants.
- It can be applied in irrigation systems (especially drip irrigation) with direct soil application or foliar for the treatment and treatment of calcium deficiency in agricultural crops.

Application Details

- There are two effects when calcium nitrate is used in Set accelerating concrete admixtures. Calcium ion accelerates the formation of calcium hydroxide. This effect is also used in cold weather concreting products and some combined plasticizers.

Technical Properties

Colour and form	Yellowish Clear Liquid
Chemical base	Inorganic Material
Density (kg/ltr)	1,22 – 1,26 (at +20°C)
pH	2.0 – 6.0
Solid Content %	40.0 ± 2.0



Corrosion Inhibitor Chemical Admixture Raw Material

Product Definition

Calcium Nitrite is an inorganic compound used as a metal corrosion inhibitor for steel in reinforced concrete with the chemical formula of $\text{Ca}(\text{NO}_2)_2$.

Use

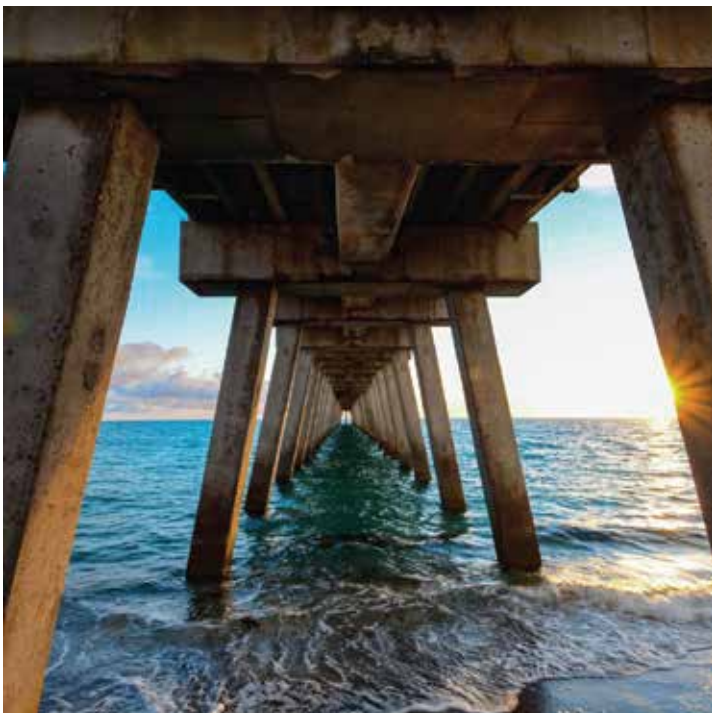
Calcium nitrite is used as a metal corrosion inhibitor for steel in reinforced concrete, antifreeze in cement. It can be used as a heavy oil detergent and in thermal energy storage for air conditioning.

Application Details

- It can be use as metal corrosion inhibitor, so it can protect steel in concrete buildings and structures from rust, to extend life of specific buildings.
- It can promote the hydration of minerals in cement using this antifreeze at sub freezing temperature, the operative temperature can be reduced to $-20\text{ }^\circ\text{C}$.
- It is used as a heavy oil detergent and in pharmaceuticals, dyes and metallurgy industries.

Technical Properties

Colour and form	Yellowish – Liquid
Chemical base	Inorganic Material
Density (kg/ltr)	1,20 – 1,24 (at +20°C)
pH	3 - 7
Solid Content %	30,00 – 36,00



Set Accelerating And Strength Enhancer Raw Material for High-Range Water Reducing / Superplasticizer Concrete-Cement Admixtures

Product Definition

Diethanol Isopropanolamine (DEIPA) is an alkanol amine used in formulation of concrete admixtures and cement additives that requires high early and final strengths.

Use

DEIPA is used in the following conditions and applications.

- For increasing the final and early strength of concrete.
- Precast concrete industry.
- For concrete admixture formulations where early strength is desired,
- Concreting work requiring high early and ultimate strength.

Application Details

It is generally compatible to use DEIPA in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate and Polycarboxylate based raw materials.



Technical Properties

Colour and form	Colourless to light yellow liquid
Structure Formula:	C ₇ H ₁₇ NO ₃
DEIPA Content:	85.0% Min.
Water Content:	10.0-15.0 %
DEA Content:	2.0% Max.
Smelling:	Very light ammoniacal odour
Molecular weight:	163.22
Freezing Point:	< 0°C
Boiling Point:	120-130°C
Flash Point:	Min.160°C on dry base
Specific Gravity (25/4°C):	1.083



Set Accelerating And Strength Enhancer Raw Material for High-Range Water Reducing / Superplasticizer Concrete-Cement Admixtures

Product Definition

Triisopropanolamine (TIPA) is a hydroxylamine compound with organic amine and Hydroxyl used in admixture especially for increasing final strengths of cement, concrete and mortar.

Use

TIPA is used in the following conditions and applications.

- For high performance concrete production.
- For precast and precast concrete production.
- For concrete admixture formulations where early strength is desired.
- For Ready-mixed concrete production with and without pump.
- For increasing the final and early strength of concrete.
- Improves the grinding efficiency resulting energy savings.

Application Details

It is generally compatible to use TIPA in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate and Polycarboxylate based raw materials.



Technical Properties

Colour:	Colourless to light yellow liquid
Physical Form(25°C):	Liquid
Structure Formula:	C ₉ H ₂₁ NO ₃
TIPA Content:	85.0% Min.
Water Content:	10.0-15.0 %
MIPA and DIPA Content:	3.0% Max.
Smelling:	Very light ammoniac odour
Molecular weight:	163.22
Freezing Point:	3-8°C
Boiling Point:	104-107°C
Flash Point:	Min.154°C on dry base
Specific Gravity (25/4°C):	1.027
Viscosity (25°C):	400-500cps



High-Range Water Reducing / Superplasticizing / Set Accelerating Raw Material for Concrete / Cement Admixtures

Product Definition

TEA is a raw material which contains amine compounds that enhances especially early strengths of cement, concrete and mortar.

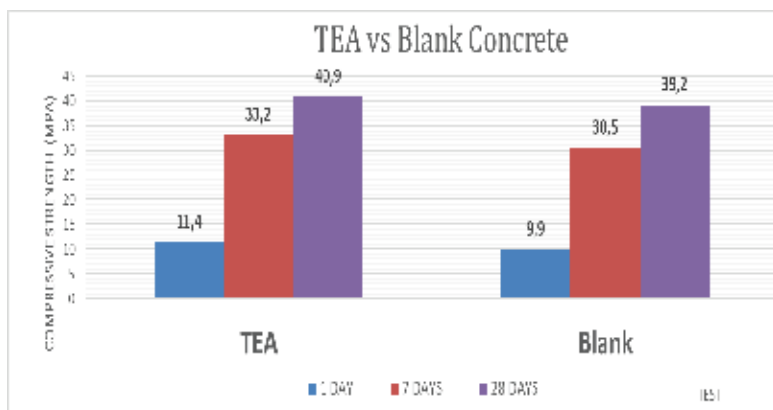
Use

TEA is used in the following conditions and applications.

- For high performance concrete production,
- For precast and precast concrete production,
- For concrete admixture formulations where early strength is desired,
- For Ready-mixed concrete production with and without pump
- For increasing the early strength of cement in cement production.

Application Details

It is generally compatible to use TEA in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate and Polycarboxylate based raw materials.



Technical Properties

Colour and form	Transparent liquid
Structure Formula:	$C_6 H_{15} NO_3$
Iron as Fe	0.00-10.00 ppm
TEA Content:	85.0 % Min.
Water Content:	0.00-0.20 %
MEA Content:	0.00-0.50 %
DEA Content:	11.0-15.0 %
Equivalent weight:	140.0-144.0 g/EQ
Specific Gravity (20/20°C):	1.1243



Set Accelerating Raw Material for Concrete Admixtures

Product Definition

LTEA is a raw material which contains amine compounds that enhances especially early strengths of cement, concrete and mortar.

Use

LTEA is used in the following conditions and applications.

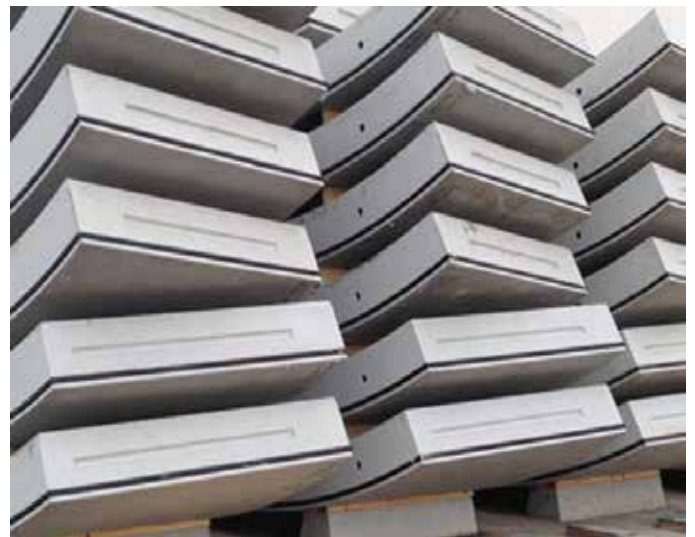
- For high performance concrete production,
- For precast and precast concrete production,
- For concrete admixture formulations where early strength is desired,
- For Ready-mixed concrete production with and without pump
- For increasing the early strength of cement in cement production

Application Details

It is generally compatible to use LTEA in concrete admixture recipes with Naphthalene Sulfonate, Melamine Sulfonate, Lignin Sulfonate and Polycarboxylate based raw materials..

Technical Properties

Colour and form	Brown –liquid
Chemical base	Amine Salt
Density (kg/ltr)	1.2050 – 1.2450 (at +20 °C)
pH	10 – 14
Solid Content %	40.0 ± 2.0





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