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# Concrete Admixtures

## Air-Entraining Agents

### Polychem AE

**Air-Entraining Admixture**

*Polychem AE* is a specially developed, multi-component air-entraining agent that produces an air-void system superior to that produced by Vinsol-resin-based air-entraining agents. *Polychem AE* typically has lower dosage rates than Vinsol-resin-based agents and produces smaller, more well-distributed bubbles with excellent dispersion.

### Polychem VR

**Air-Entraining Admixture**

*Polychem VR* is a ready-to-use air-entraining agent in an aqueous solution of neutralized Vinsol resin. *Polychem VR* is used in exterior concrete such as sidewalks, curbs, highway paving, bridge decks, parking structures, and any other areas requiring protection from de-icing salts and freeze/thaw damage.

### Polychem VRC

**Air-Entraining Admixture (Concentrate)**

*Polychem VRC* is a concentrated, ready-to-use air-entraining agent in an aqueous solution of neutralized Vinsol resin. *Polychem VRC* is used in exterior concrete such as sidewalks, curbs, highway paving, bridge decks, parking structures, and any other areas requiring protection from de-icing salts and freeze/thaw damage.

### Polychem SA

**Air-Entraining Admixture**

*Polychem SA* is a specifically developed, multi-component air-entraining admixture that has been stabilized to produce an air-void system consistent with industry requirements and standards. When added separately, *Polychem SA* will produce an air-void system that is equivalent to or exceeds that of pure Vinsol-resin-based admixtures at substantially reduced dosage rates. *Polychem SA* is a synthetic-based alpha olefin that will produce a small, more well-defined and spaced bubble structure, which is stabilized to be more efficient when used in producing concrete mixtures containing low-alkali cement or supplementary cementitious materials.

### Polychem SA-50

**Air-Entraining Admixture**

*Polychem SA-50* is a specifically developed, multi-component air-entraining admixture that has been stabilized to produce an air-void system consistent with industry requirements and standards. *Polychem SA-50* is a reduced-solids version of *Polychem SA*. When added separately, *Polychem SA-50* will produce an air-void system that is equivalent to or exceeds that of pure Vinsol-resin-based admixtures at reduced dosage rates. *Polychem SA-50* is a synthetic-based alpha olefin that will produce a small, more well-defined and spaced bubble structure, which is stabilized to be more efficient when used in producing concrete mixtures containing low-alkali cement or supplementary cementitious materials. *Polychem SA-50* has been formulated specifically for ready-mix and precast concrete applications where the need for accurate dispensing with a small load size may be an issue.

## Water Reducers

### Mapeplast MR107

**Mid-Range, Water-Reducing Admixture**

*Mapeplast MR107* is a multi-range, water-reducing admixture for normal, mid-range and high-range water reduction. Concrete manufactured with *Mapeplast MR107* has a high level of workability and exhibits excellent mechanical properties when hardened.

### Mapeplast N

**Water-Reducing Admixture**

*Mapeplast N* is a normal-setting, multi-component, highly concentrated, water-reducing and retarding admixture for concrete. It will increase strengths, improve workability and finishing characteristics.

### KB-1200

**Finishing Aid / Water Reducer**

*KB-1200* is used in all concrete where ease of placement, normal set times and increased workability are desired. Used in all flatwork, curb mixes and walls, *KB-1200* is compatible with a wide range of cements, fly ashes and aggregates. *KB-1200* provides concrete with lower permeability, little or no bleeding, and greater workability at the surface. *KB-1200* does not contain calcium chloride.

### Polychem 400 NC

**Water-Reducing Admixture**

*Polychem 400 NC* is a normal-setting, multi-component, highly concentrated, water-reducing admixture conforming to ASTM C494 Type A. *Polychem 400 NC* will reduce the quantity of water required to produce concrete of a desired consistency, while providing greater economy for a given strength. It will increase strengths and improve workability and finishing characteristics. *Polychem 400 NC* does not contain calcium chloride, and is compatible with air-entrained and non-air-entrained mixes.
### Concrete Admixtures

**Polychem 383**  
**Mid-Range Water-Reducing Admixture**  
*Polychem 383* is a normal-setting, mid-range water-reducing admixture based on polycarboxylate chemistry. *Polychem 383* is designed to be used in all concrete applications by varying the dosage rate while maintaining workability, neutral-setting characteristics and improved finishability characteristics. *Polychem 383* does not contain calcium chloride or any chloride-based components. Its use will not contribute to the increased corrosion of reinforcing steel in concrete.

**Polychem Paver Plus**  
**Water-Reducing Admixture**  
*Polychem Paver Plus* is a normal-setting, multi-component, highly concentrated water-reducing admixture. *Polychem Paver Plus* will reduce the quantity of water required to produce concrete of a desired consistency while providing greater economy for a given strength. It will increase strength and improve workability and finishing characteristics. *Polychem Paver Plus* does not contain calcium chloride, and is compatible with air-entrained and non-air-entrained mixes. *Polychem Paver Plus* was specifically designed for concrete slip-form paving operations to extend haul time and maintain workability.

### Retarders

**Mapetard Plus**  
**Set-Retarding Admixture**  
*Mapetard Plus* is a high-performance set-retarding and water-reducing admixture for concrete.

**Polychem R**  
**Retarder**  
*Polychem R* is a highly concentrated liquid admixture conforming to ASTM C494, Type D. *Polychem R* reduces the quantity of mixing water required to produce concrete of a standard consistency with the benefit of extended slump life and workability. Concrete produced with *Polychem R* will experience rapid strength development after the initial set occurs. If retardation is within the normal ASTM C494, Type B and D specifications, *Polychem R* will develop higher early and ultimate strengths than regular concrete under normal comparable curing conditions.

**Polychem Renu**  
**Hydration-Stabilizing Admixture for Concrete**  
*Polychem Renu* is a ready-to-use liquid solution manufactured to control the hydration process in Portland-cement concrete and concrete washwater. This advanced-set retarder coats the hydrating cement particles in the concrete and washwater, resulting in the suspension of the hydration chemical reaction. *Polychem Renu* maintains the plasticity, slump and temperature as it postpones the set of the concrete for a predictable period of time. Eventually, the *Polychem Renu* dosage is chemically consumed, allowing normal hydration to continue.

### Accelerators

**Polychem Super Set**  
**Accelerating Admixture**  
*Polychem Super Set* is a non-chloride, water-reducing admixture formulated to accelerate the strength development and setting time of concrete in cold weather. *Polychem Super Set* can reduce labor costs associated with the finishing process. *Polychem Super Set* is non-corrosive and, therefore, will not aid in the corrosion of reinforcing steel embedded within the concrete. It is recommended for use in all types of concrete, especially reinforced and prestressed.

**Polychem Super Set II**  
**Non-Chloride Accelerating Admixture**  
*Polychem Super Set II* is a non-chloride, accelerating and water-reducing admixture formulated to accelerate strength development and setting time of concrete in cold weather.

**Polychem Super Set Plus**  
**Non-Chloride Accelerating Admixture**  
*Polychem Super Set Plus* is a non-chloride, water-reducing admixture formulated to accelerate the strength development and setting time of concrete in cold weather. *Polychem Super Set Plus* can reduce labor costs associated with the finishing process. Because the non-corrosive *Polychem Super Set Plus* will not aid in the corrosion of reinforcing steel embedded within the concrete, it is recommended for use in all types of concrete, especially reinforced and prestressed.

**Polychem HE**  
**Water-Reducing, Accelerating Admixture**  
*Polychem HE* is a combination accelerating/water-reducing admixture for concrete. *Polychem HE* is designed to accelerate the set and increase strength of concrete at all ages. *Polychem HE* contains chloride and is specifically formulated to promote earlier finishing. It improves the plastic and hardened properties of concrete.
Concrete Admixtures

**SUPERPLASTICIZERS**

**Dynamon NRG 1092**
High-Range, Water-Reducing Admixture

Concrete manufactured with *Dynamon NRG 1092* has a high level of workability and exhibits excellent mechanical properties when hardened. *Dynamon NRG 1092* has been designed for use in precast/prestressed concrete applications.

**Mapefluid N200**
High-Range, Water-Reducing Admixture

*Mapefluid N200* is a high-range, naphthalene-sulfonate-based, water-reducing admixture for normal-setting, high-performance and durable concrete. Concrete manufactured with *Mapefluid N200* has a high level of workability and exhibits excellent mechanical properties when hardened.

**Dynamon SX37**
High-Range, Water-Reducing Admixture

*Dynamon SX37* is a high-performance admixture for concrete that is based on polycarboxylate technology and belongs to MAPEI’s *Dynamon* system. *Dynamon SX 37* meets the requirements of ASTM C494 Type F and AASHTO M194 Type F.

**Dynamon NRG 546**
High-Range Water-Reducing Admixture

*Dynamon NRG 546* has been developed for use in both ready-mixed and precast concrete applications where improved water reduction, extended slump life and normal setting characteristics are desired.

**Dynamon™ SX**
High-Range, Water-Reducing Admixture

*Dynamon SX* is a high-performance admixture for concrete based on polycarboxylate technology, belonging to the MAPEI *Dynamon* system. *Dynamon SX* meets the requirements of ASTM C-494 Type F and AASHTO M-194 Type F. *Dynamon SX* has been designed for use in both ready-mix and precast/prestressed applications and where greater water reduction is needed, along with high mechanical strength at all ages. Its performance makes it particularly suitable for manufacturing self-consolidating concrete (SCC). *Dynamon SX* ensures high workability and cohesiveness in all concrete mixes.

**EVO 2500**
Complete-Range Water-Reducing Admixture

*EVO 2500* is the latest in polycarboxylate technology that has been formulated to effectively meet demanding expectations for high-performance concrete. *EVO 2500* will increase dispersion and hydration of all cementitious materials, while enhancing the rheology and strength characteristics of concrete at all ages. *EVO 2500* is designed to be used in all concrete applications by varying the dosage rate, including those that may require high flowability or complete self-consolidating concrete (SCC) while maintaining workability and normal-setting characteristics. *EVO 2500* does not contain calcium chloride or any chloride-based components. Its use will not contribute to the increased corrosion of reinforcing steel in concrete.

**Polychem 850**
Multi-Range Water-Reducing Admixture

*Polychem 850* is a normal-setting, multi-range water-reducing admixture for concrete utilizing polycarboxylate technology. *Polychem 850* is designed to facilitate the placing and finishing of ready-mixed concrete that is highly flowable and workable for extended periods of time with normal-setting characteristics.

**Polychem 3000**
Multi-Range Water-Reducing Admixture

*Polychem 3000* is a normal-setting, multi-range water-reducing admixture for concrete utilizing polycarboxylate technology. *Polychem 3000* is designed to facilitate the placing and finishing of ready-mixed concrete that is highly flowable and workable for conventional periods of time with normal-setting characteristics.

**Polychem SPC**
Complete-Range Water-Reducing Admixture

*Polychem SPC* is a normal-setting complete-range water-reducing admixture based on polycarboxylate chemistry. *Polychem SPC* is designed to be used in all concrete applications by varying the dosage rate, including those that may require high flowability or complete self-consolidating concrete (SCC) while maintaining workability and normal-setting characteristics. *Polychem SPC* does not contain calcium chloride or any chlorine-based components. Its use will not contribute to the increased corrosion of reinforcing steel in concrete.
Melchem Superplasticizer

Melchem is a water-soluble, melamine-based, high-range water-reducing admixture (superplasticizer). Melchem can reduce mixing water up to 30%, producing high-strength concrete with a low water/cement ratio that can be placed at normal levels of workability or can be added to a mix to produce flowing concrete with increased strength. Melchem is chloride-free and non-corrosive. Melchem is recommended for use in all concretes, especially reinforced/prestressed and post-tensioned concretes.

Polychem 441 Superplasticizer

Polychem 441 is a water-soluble, naphthalene-based, high-range water-reducing admixture. Polychem 441 can reduce mixing water up to 30%, producing high-strength concrete with a low water/cement ratio that can be placed at normal levels of workability or can be added to a mix to produce flowing concrete with increased strength. Polychem 441 is chloride-free and non-corrosive. Polychem 441 is recommended for use in all concrete, especially reinforced/prestressed and post-tensioned concrete.

Polychem CI Corrosion-Inhibiting, Non-Chloride Accelerating Admixture for Concrete

Polychem CI is a calcium nitrite, liquid corrosion-inhibiting admixture for concrete containing steel reinforcement. Polychem CI chemically inhibits the onset of corrosion from chlorides on the reinforcing steel. Polychem CI has a minimum of 30% calcium nitrite by mass. Polychem CI weighs approximately 10.6 lbs. per U.S. gal. (4,81 kg per L) and has exactly the same chemical makeup as other 30% calcium nitrite corrosion-inhibiting admixtures.

Mapecrete™ V3K Viscosity-Modifying Admixture

Mapecrete V3K is a liquid admixture specially formulated for use in the production of ready-mixed and precast concrete that requires high fluidity with no segregation. Control of the viscosity achieved using Mapecrete V3K allows for the production of self-compacting concrete with little or no fillers.

Polychem VMA Viscosity-Modifying Admixture

Polychem VMA is specifically formulated to improve the viscosity of highly flowable mixes, decrease the potential for segregation and improve the finishing characteristics of lean concrete mixes. Polychem VMA is recommended for use in Self-Consolidating Concrete (SCC), concrete containing manufactured sand and high water-to-cement ratio mixes.

DG-F Anti-Washout and Viscosity-Modifying Admixture

DG-F is a dry powder (biopolymer / highly refined diutan gum) admixture packaged in a ready-to-use, water-soluble bag that can be added to Portland-cement concrete based upon the application and specific load size. DG-F is a fast-hydrating biopolymer that has been specifically designed for use in applications of Portland-cement concrete, gypsum products and calcium aluminate cement. DG-F may be used as an AWA (anti-washout admixture) or a VMA (viscosity-modifying admixture) depending on project requirements or contractor needs.

SRA-157 Shrinkage-Reducing Admixture

SRA-157 is a liquid shrinkage-reducing admixture that can be used in any Portland-cement-based product to significantly reduce drying shrinkage. SRA-157 is not expansive material, but rather functions by blocking capillaries of pore water, which is the major mechanism that causes drying shrinkage in concrete. When added to concrete at a rate of 2% by weight of cementitious material, SRA-157 can reduce shrinkage by up to 80% at 28 days of age and by up to 50% at one year of age.

MP-10 Efflorescence Reducer / Water Repellent

MP-10 is a high-performance, efflorescence-reducing, water-repelling admixture for both wet- and dry-cast concrete applications. MP-10 dry and semi-dry applications include concrete masonry units, SRWs and pavers. MP-10 wet-cast applications include architectural precast and stone veneer.
**Polychem BP**  
**Block Plasticizer**  
*Polychem BP* is a ready-to-use, high-performance, liquid plasticizer recommended for use in concrete block (both standard weight and lightweight). *Polychem BP* is also effective in the production of concrete pipe, especially when low slump is required. *Polychem BP* is added to pipe or block mixes during the mixing process. It should not be added directly to cement. No additional mixing time is necessary.

**HCSP**  
**Low-Slump Concrete Superplasticizer**  
*HCSP* is a highly concentrated plasticizer that is designed for use in low-slump concrete pipe production. *HCSP* is formulated to produce a web on the concrete pipe that has a very smooth texture. *HCSP* can be used in the production of other low-slump concrete products (such as concrete block and roof tile) to achieve a medium-to-heavy swipe. *HCSP* is a ready-to-use liquid that improves workability while maintaining cohesiveness and achieving fuller hydration rates of the cement in low-slump concrete mixes. *HCSP* does not contain calcium chloride or any chloride-based components. It will not promote or contribute to corrosion of reinforcing steel in concrete pipe.

**Extendflo X90**  
**Specialty Slump-Retaining Admixture**  
*Extendflo X90* is a revolutionary new technology based on significant advances in the admixture industry. When used as part of an admixture system, it provides slump retention without retardation. *Extendflo X90* gives the concrete producer the ability to immediately create the ideal admixture system for fluctuating regional raw materials, environmental conditions and project requirements.

**Idrocrete KR 1000**  
**Waterproofing Admixture**  
*Idrocrete KR 1000* is a waterproofing admixture in powdered form made from special hydrophilic components which, when added to a concrete mix, reduces permeability of hardened concrete.

**Krystol Internal Membrane™ (KIM®)**  
**Waterproofing Admixture for Concrete**  
*Krystol Internal Membrane* (KIM) is a chemical admixture in dry powdered form, effective in creating waterproof concrete. KIM is used in place of externally applied surface membranes to protect against moisture transmission, chemical attack and corrosion of reinforcing steel. When combined with fresh concrete, Kryton’s unique and proven Krystol® technology reacts with un-hydrated cement particles to form millions of needle-like crystals. Over a period of weeks and months, these crystals grow, filling the naturally occurring pores and voids in concrete, and permanently blocking the pathways for water and waterborne contaminants. Later, if cracks form due to settling or shrinkage, incoming water triggers the crystallization process and additional crystals form, filling cracks and ensuring that the structure’s waterproofing barrier is maintained and protected. In addition to filling the pores and capillaries of the concrete matrix with crystals, KIM enhances the natural hydration process by intensifying and prolonging the hydration of the cementing materials. This reduces the size and number of capillary pores within the concrete matrix, making it dramatically less porous, and improving strength and durability characteristics.

**MP-10**  
**Efflorescence Reducer / Water Repellant**  
*MP-10* is a high-performance, efflorescence-reducing, water-repelling admixture for both wet- and dry-cast concrete applications. *MP-10* dry and semi-dry applications include concrete masonry units, SRWs and pavers. *MP-10* wet-cast applications include architectural precast and stone veneer.

**ASR Mitigator**  
**Lithium Nitrate**  
*ASR Mitigator* admixture is a lithium-based, specially formulated admixture that is designed to control alkali-silica reactivity (ASR) in concrete.

**Microsilica**  
**Silica Fume**  
*Microsilica* is an amorphous silicon dioxide (silica) consisting of sub-micron spherical primary particles and agglomerates of these. The material is highly reactive in cementitious and ceramic bond systems.

* Krystol Internal Membrane (KIM) is available in the USA only.
# Concrete Admixtures / Fiber Products

## Specialty Admixture

**Mapecrete™ Film**
Evaporation Retardant and Finishing Aid

*Mapecrete Film* is designed to retard moisture evaporation on concrete surfaces and aid in finishing of concrete flatwork. *Mapecrete Film* forms a thin film to prevent rapid moisture loss on newly placed concrete surfaces and is particularly effective when concrete is placed in areas with direct sun, low humidity, high winds or high temperatures.

## Fiber Reinforcement

**Polymesh™ M**
Monofilament Fiber Reinforcement System for Concrete

*Polymesh* is manufactured to optimum graduations from 100% pure virgin polypropylene, which increases the homogenization of concrete to produce a more favorable consistency at equal slump. Although concrete with *Polymesh* fibers may appear stiffer than non-fibrous concrete, it still maintains the same level of workability without the addition of extra water.

**Polymesh™ F**
Fibrillated Fiber Reinforcement System for Concrete

*Polymesh* is manufactured to optimum graduations from 100% pure virgin polypropylene, which increases the homogenization of concrete to produce a more favorable consistency at equal slump. Although concrete with *Polymesh* fibers may appear stiffer than non-fibrous concrete, it still maintains the same level of workability without the addition of extra water.

**Advantage Macrosynthetic Fiber**
Macrosynthetic Fiber Reinforcement

*Advantage Macrosynthetic Fiber* provides post-first-crack toughness and enhanced fatigue strength, impact resistance and surface abrasion resistance, which leads to a more durable concrete with a longer service life.

**Advantage HP Fiber**
Macrosynthetic Fiber Reinforcement

*Advantage HP Fiber* provides concrete with a uniformly distributed three-dimensional reinforcement system. It is able to proactively control cracking for plastic and drying shrinkage and to provide post-first-crack residual strength.

## Form-Release Agent

**Mapeform Oil**
Form-Release Agent

*Mapeform Oil* is a VOC-compliant, stable mixture of select organic materials that promotes easy stripping of concrete.

**Mapeform ECO 31**
Vegetable-Based Form Oil

*Mapeform ECO 31* is a form-release agent based on vegetable oil. It is particularly suitable for vertical applications.
### Product for Recycling Concrete

<table>
<thead>
<tr>
<th>PRODUCT / DESCRIPTION</th>
<th>MAIN APPLICATION</th>
<th>RECOMMENDED DOSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Re-Con Zero EVO US</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-Component Powder for Recovering Returned Concrete from Mixer Trucks</td>
<td>Ready Mix</td>
<td>Component A: 1 bag per cubic yd. (0.76 m³)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Component B: 1 bag per cubic yd. (0.76 m³)</td>
</tr>
</tbody>
</table>

**Diagram**

**Step 1**
- **Component B**
  - Mix for 3 minutes.

**Step 2**
- **Component A**
  - Mix for 4 minutes.

**Step 3**
- **Discharge**

**More Effective, Easy to Use**
About Admixtures for Concrete

Quality products, innovative applications
Our products are designed and used by leading-edge concrete producers with an emphasis on performance concrete. The products uniquely incorporate the optimum utilization of Portland cement and cementitious material in combination with local aggregate to achieve superior strength development, workability and enhanced finishing at low water-to-cement ratios.

The key to our success is people
People are the true assets of an organization. Our company is made up of individuals who have extensive industry knowledge of the industry and listen to customers’ specific needs. We have designed a solid program that addresses specific issues and allows for achievement of performance.

Manufacturing
Not only are our admixtures manufactured to exacting specifications, they are formulated to produce optimum improvement in quality and uniformity of concrete under a variety of climatic conditions.

Dispenser systems
We manufacture and maintain our own chemical dispenser units with qualified professionals to ensure efficient batching of admixture products.

Transportation
We own and operate multi-compartment tanker trucks used by professional company drivers for timely deliveries of product. Plus, our employees understand the critical aspect of providing the correct products in their proper tanks.

Technical support
We are proud to offer the technical expertise, product integrity and customer support that assure customers of a respected position within their construction community. We are committed to the continuous improvement and performance of the world’s basic construction material: Concrete.

DISTRIBUTION CENTERS
USA
Calhoun, GA
Charlotte, NC
Fowlerville, MI
Kansas City, KS
Grimes, IA
Wildwood, FL
Canada
Calgary, AB

MANUFACTURING PLANTS
USA
Dalton, GA
Eagan, MN
Fort Lauderdale, FL
Fredericksburg, VA
Garland, TX
Madison, IL
San Bernardino, CA
Swedesboro, NJ
Tempe, AZ
West Chicago, IL
Canada
Brampton, ON
Delta, BC
Laval, QC
Maskinongé, QC
Puerto Rico
Dorado

MAPEI manufacturing plants
MAPEI liquid-admixtures facilities
Distribution centers