ADMIXTURES FOR CONCRETE

- Air-Entraining Agents
- Water Reducers
- Retarders
- Accelerators
- Superplasticizers
- Corrosion Inhibitor
- Viscosity-Modifying Agents
- Shrinkage Reducers
- Masonry Products
- Slump-Retention Admixture
- Waterproofing Admixture
- ASR Mitigator
- Silica Fume
- Fiber Reinforcement
- Product for Recycling Concrete
EXPANDING OUR COMPANY FOR STRONGER CHEMISTRY

General Resource Technology, Inc. (GRT) continues to grow and expand as a member of MAPEI Group in the Americas. GRT has four production sites – located in Eagan, MN; Madison, IL; Logan Township, NJ; and Garland, TX.

Originally established in 1937, the parent company MAPEI is a privately owned global corporation headquartered in Milan, Italy, with 81 subsidiaries including 73 plants in 33 countries. The company specializes in manufacturing chemical products for building, including waterproofing products, special mortars and admixtures for concrete, products for the restoration of ancient buildings, and special decorative and protective coatings for concrete surfaces. In addition, MAPEI is the world leader in the manufacturing of mortars, grouts, adhesives and complementary products for the installation of all types of floor and wall coverings.

As part of MAPEI, the GRT brand continues to market a strong offering of concrete admixtures and auxiliary products for the concrete industry. The company’s products are routinely used to produce concrete mixes that provide high performance in all weather conditions. GRT continually incorporates the latest product technology available in its efforts to meet customer needs and is focused on continuing the development of next-generation chemical admixture products.

The combination of GRT with MAPEI’s strong reputation in the construction industry strengthens the regional company as it grows under the auspices of the global corporation. By developing synergies with its own product lines, MAPEI expects to expand the GRT footprint east and west in the United States.

Now designated as MAPEI/GRT, the company is ready to meet its customers’ needs with the best products, customer service and technical support in our market today and in the future.
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### 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

#### 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.

#### 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 775
**Complete-Range Water-Reducing Admixture**
Polychem 775 is a normal-setting, complete-range water-reducing admixture based on polycarboxylate chemistry. Polychem 775 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 775 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

#### 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 pre-stressed.

#### Polychem Super Set III
**Non-Chloride Accelerating Admixture**
Polychem Super Set III is a non-chloride, water-reducing admixture formulated to accelerate the strength development and setting time of concrete in cold weather. Polychem Super Set III can reduce labor costs associated with the finishing process. Polychem Super Set III 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 pre-stressed.

#### 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 pre-stressed.

#### 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™ 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/prestress 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.

**Melchem-M**  
Superplasticizer  
Melchem-M is a water-soluble, melamine-based, high-range water-reducing admixture (superplasticizer). Melchem-M 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. Chloride-free and non-corrosive, Melchem-M is modified to provide a longer slump life to fresh concrete. Melchem-M is recommended for use in all concretes, especially reinforced/prestressed and post-tensioned concretes.

**PC-441**  
Superplasticizer  
PC-441 is a water-soluble, naphthalene-based, high-range water-reducing admixture. PC-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. PC-441 is chloride-free and non-corrosive. PC-441 is recommended for use in all concrete, especially reinforced/prestressed and post-tensioned concrete.
**Concrete Admixtures**

**CORROSION INHIBITOR**

**Polychem CI**
*Calcium Nitrite, 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. (4.61 kg per L) and has exactly the same chemical makeup as other 30% calcium nitrite corrosion-inhibiting admixtures.

**VISCOSITY-MODIFYING AGENTS**

**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.

**SHRINKAGE REDUCER**

**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.

**MASONRY PRODUCTS**

**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.

**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.
## Concrete Admixtures

### Slump-Retention Admixture

**Extendflo RC**  
Specialty Slump-Retaining Admixture  
Extendflo RC 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 RC gives the concrete producer the ability to immediately create the ideal admixture system for fluctuating regional raw materials, environmental conditions and project requirements.

### Waterproofing Admixture

**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

**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.

### Silica Fume

**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.
### 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**  
*Synthetic Macro 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.
Product for Recycling Concrete

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<tr>
<td>Two-Component Powder for Recovering Returned Concrete from Mixer Trucks</td>
<td>Ready Mix</td>
<td>Component A: 1.1 lbs. per 35.3 cu. ft. (0,5 kg per 1 m³)</td>
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<tr>
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<td>Component B: 3.3 lbs. per 35.3 cu. ft. (1,5 kg per 1 m³)</td>
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**STEP 1**
Component B
3.3 lbs. per 35.3 cu. ft. (1,5 kg per 1 m³)
Mix for 3 minutes.

**STEP 2**
Component A
1.1 lbs. per 35.3 cu. ft. (0,5 kg per 1 m³)
Mix for 4 minutes.

**STEP 3**
Discharge

**MORE EFFECTIVE**
**EASY TO USE**
Quality products, innovative application

MAPEI/GRT 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 MAPEI/GRT success is people

People are the true assets of an organization. MAPEI/GRT is made up of individuals who have extensive industry knowledge of the industry and listen to customers’ specific needs. MAPEI/GRT has designed a solid program that addresses specific issues and allows for achievement of performance.

Manufacturing

Not only are MAPEI/GRT 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

MAPEI/GRT manufactures and maintains its own chemical dispenser units with qualified professionals to ensure efficient batching of admixture products.

Transportation

MAPEI/GRT owns and operates multi-compartment tanker trucks used by professional company drivers for timely deliveries of product. Plus, MAPEI/GRT company employees understand the critical aspect of providing the correct products in their proper tanks.

Technical support

MAPEI/GRT is proud to offer the technical expertise, product integrity and customer support that assure customers of a respected position within their construction community. MAPEI/GRT is committed to the continuous improvement and performance of the world’s basic construction material: concrete.