

# MasterGlenium<sup>®</sup> SKY 8540 (Formerly Glenium SKY 787)

PCE based superplasticizer for High Quality ready-mix concrete using Total Performance Control<sup>™</sup>

## DESCRIPTION

**MasterGlenium SKY 8540** is the superplasticizer based on second generation polycarboxylic ether polymers, developed using nano-technology. The product has been primarily developed for applications in high performance ready-mix concrete to facilitate Total Performance Control<sup>™</sup>.

**MasterGlenium SKY 8540** is free of chloride & low alkali. It is compatible with all types of cements.

## RECOMMENDED USES

- **MasterGlenium SKY 8540** is used for the production of high quality ready-mix concrete.
- **MasterGlenium SKY 8540** may be used in combination with MasterMatrix 2 (formerly known as GLENIUM STREAM 2) for producing Rheodynamic Concrete, capable of self-compaction, even in the presence of dense reinforcement.

## FEATURES AND BENEFITS

**MasterGlenium SKY 8540** is based on **Total Performance Control<sup>™</sup>** concept – which ensures that ready-mix producers, contractors and engineers get a concrete that is of the same high quality as originally specified; starting from production at the batching plant, to the delivery and application into place and followed by its hardening process. Utilizing Rheodynamic Concrete technology, it provides a concrete mix with exceptional placing characteristics and accelerated cement hydration for early strength development and high-quality concrete.

The product offers the following benefits for:

### The ready-mix producer:

- Capability of delivering high quality concrete at any time to the job site in place
- Production of concrete with low w/c ratio that meets international guidelines for consistency classes(EN 206-1) without loss of workability
- Single product for many application needs

### The Contractor/Applicator:

- Easier placing and faster strength development
- Improved concrete surface
- Guarantee to place the same concrete as specified and ordered from ready-mix plant

### The Engineer/Developer:

- Insurance that concrete meets original specifications
- High quality concrete with improved durability

## Chemistry and mechanism of action

What differentiates **MasterGlenium SKY 8540** from the traditional superplasticisers is a new, unique mechanism of action that greatly improves the effectiveness of cement dispersion. Traditional superplasticizers based on melamine and naphthalene sulphonates are polymers which are absorbed by the cement granules. They wrap around the granules' surface areas at the very early stage of the concrete mixing process. The sulphonic groups of the polymer chains increase the negative charge of the cement particle surface and disperse these particles by electrical repulsion. This electrostatic mechanism causes the cement paste to disperse and has the positive consequence of requiring less mixing water to obtain a given concrete workability.

**MasterGlenium SKY 8540** has a different chemical structure from the traditional superplasticisers based on PCE polymers (first generation PCE polymers). The second generation **MasterGlenium SKY 8540** is derived directly from the Total Performance Control<sup>™</sup> Concept and is specially engineered for ready-mix concrete. The particular configuration of PCE polymer, allow its delayed absorption on to the cement particles and disperse them efficiently. As compared with other first generational PCE superplasticizers, it is possible to obtain a high quality concrete mix with accelerated strength development and extended workability without delayed setting characteristics.

## PERFORMANCE TEST DATA

Aspect	Light brown liquid
Relative Density	1.11 ± 0.01 at 25°C
pH	≥6 at 25°C
Chloride ion content	< 0.2%

## TEST CERTIFICATION/APPROVALS

- ASTM C494 Types B,D&G
- EN 934-2 T11.1/11.2
- IS 9103: 1999

## DOSAGE



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Optimum dosage of **MasterGlenium SKY 8540** should be determined with trial mixes. As a guide, a dosage range of 500 ml to 1500ml per 100kg of cementitious material is normally recommended. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local BASF representative.

## Effects of over dosage

A severe over-dosage of **MasterGlenium SKY 8540** can result in the following:

- Extension of initial and final set
- Bleed/segregation of mix,

A slight overdosing may not adversely affect the ultimate strength of the concrete and can achieve higher strengths than normal concrete, provided it is properly compacted and cured. Due allowance should be made for the effect of fluid concrete pressure on form work, and stripping times should be monitored.

In the event of over dosage, consult your local BASF representative immediately.

## APPLICATION

**MasterGlenium SKY 8540** is a ready-to-use liquid which is dispensed into the concrete together with the mixing water. The plasticizing effect and water reduction are higher if the admixture is added to the damp concrete after 50 to 70% of the mixing

water has been added. The addition of **MasterGlenium SKY 8540** to dry aggregate or cement is not recommended. Automatic dispensers are available.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the **MasterGlenium SKY 8540**, of 60 seconds for forced action mixers is recommended.

## SUGGESTED SPECIFICATION

The hyperplasticiser shall be **MasterGlenium SKY 8540**, high range water reducing, Superplasticizer based on polycarboxylic ether formulation. The product shall have minimum relative density of 1.11 & solid contents not less than 33% by weight. The product shall be able to demonstrate capability to offer Total Performance Control in Ready-mix concrete production by meeting the guidelines as per EN206-1.

## COMPATIBILITY

**MasterGlenium SKY 8540** is compatible with most of the products under the MasterPozzolith & MasterSet series (formerly known as POZZOLITH). Use MasterMatrix 2 (formerly known as Glenium Stream 2) as viscosity modifying agent in self compacting concrete. It must not be used in conjunction with any other admixture unless prior approval is received from BASF Technical Services Department.

## WORKABILITY

### STATEMENT OF RESPONSIBILITY (Disclaimer)

The technical information and application advice given in this BASF Construction Chemicals publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

### NOTE

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MasterGlenium SKY 8540 ensures that rheoplastic concrete remains workable in excess of 90 minutes at +25°C. Workability loss is dependent on temperature, and on the type of cement, the nature of aggregates, the method of transport and initial workability.

It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

## PACKAGING

MasterGlenium SKY 8540 is supplied in 225 kg drums or in bulk on request.

## STORAGE /SHELF LIFE

MasterGlenium SKY 8540 must be stored where temperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local BASF representative.

## PRECAUTIONS

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

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