

# MasterGlenium® ACE 456

Essential component of ZERO ENERGY SYSTEM – A new generation of high-performance polycarboxylate ether (PCE) superplasticizers for the Precast industry.

## DESCRIPTION

**MasterGlenium ACE** (Admixture Controlled Energy) **456** consists of a range of innovative superplasticizers based on newly developed polycarboxylate ether polymers. The particular molecular configuration of

**MasterGlenium ACE 456** accelerates the cement hydration by exposing increased surface of the cement grains to react with water. As a result, it is possible to obtain earlier development of the heat of hydration, rapid development of the hydration products and, as a consequence, higher strengths at very early age. The polymer structure of **MasterGlenium ACE 456** is specially designed to improve the rheology of precast concrete, making it very flowable and low viscous even at very low water/cement ratios, without increasing stickiness. Robustness is a distinctive feature of the precast concrete produced with **MasterGlenium ACE 456**.

## TYPICAL APPLICATIONS

**MasterGlenium ACE 456** is suitable for making precast concrete elements with highly-fluid concrete without segregation but low water cement ratio and, consequently, high early and final strengths. **MasterGlenium ACE 456** may be used in combination with **MasterMatrix** for producing advanced self-compacting concrete like Smart Dynamic Concrete (SDC, latest V-type SCC), without the aid of vibration, for economic, ecological and ergonomic precast production.

## ADVANTAGES

**MasterGlenium ACE 456** offer the following benefits for the precast concrete industry:

- Production of highly flowable, robust self-compacting concrete having a low water cement ratio along with an optimal rheology
- Enhanced robustness and consistency in concrete quality with low stickiness
- Environmentally friendly, CO<sub>2</sub> reduced mix-design optimization
- Elimination of heat curing
- Improved surface appearance

- Durable precast concrete elements as per EN 206-1
- Elimination of the energy required for placing, compaction and curing
- Optimization of the curing cycles by reducing curing time or curing temperature
- Increased productivity

## PACKAGING

**MasterGlenium ACE 456** is available in bulk, containers, drums or cans.

## STANDARDS

**MasterGlenium ACE 456** meets the requirements of EN EN934-2 and ASTM C494 Type A, E & F.

## TYPICAL PROPERTIES\*

Appearance and Form	Whitish to light Brownish liquid
Specific gravity @ 25°C	1.060 typical
pH value	4.0 – 7.0
Chloride ion content	≤ 0.01%
Alkali content (Na <sub>2</sub> O equivalent %)	< 3%

## APPLICATION GUIDELINES

**MasterGlenium ACE 456** is a liquid admixture to be added to the concrete during the mixing process. The best results are obtained when the admixture is added to the mixing water that is used for the concrete mix after all the other components are already in the mixer and after the addition of at least 80% of the total water. The water content is adjusted to obtain the desired consistence or workability.

Optimal water reduction is obtained if the **MasterGlenium ACE 456** is poured into the concrete mix right after the addition of the initial 80-90% of mixing water. Avoid adding the admixture to the dry aggregates. dispersion. Continue mixing and adjust the water content to obtain the required workability.

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After adding **MasterGlenium ACE 456** admixture provide enough mixing time to secure a homogenous.

## Dosage rate

The recommended dosage rate is 0.3 - 2.0 L/100kg of the binder. Other dosages may be used in special cases according to specific production conditions. In this case please consult our Technical Services Department.

## MIXING

**MasterGlenium ACE 456** is compatible and recommended for use with:

- **MasterMatrix** to modify the viscosity of SCC.
- **MasterAir**, air entraining admixture, to improve freeze-thaw resistance (exposure class XF1 to XF4, EN 206-1)
- **MasterFinish**, demoulding agent for easy formwork removal and improved finish.
- **MasterKure**, curing compound for highly efficient water retention and friendly use.

Note: **MasterGlenium ACE 456** is not compatible with all admixtures of **MasterRheobuild** series.

## STORAGE AND SHELF LIFE

**MasterGlenium ACE 456** must be stored in a place where the temperature does not drop below 5°C. In case of freezing, warm up and homogenise the admixture solution before using. If stored in unopened containers according to manufacturer's instructions, the shelf life is 12 months.

The occurrence of a surface layer with **MasterGlenium ACE 456** is normal and will have no effect on the performance of the product.

## HEALTH AND SAFETY

No special requirements must be observed while the product is used. Protection gloves and glasses are recommended. Do not eat, drink or smoke during the application.

**MasterGlenium ACE 456** is not-flammable, non-toxic or irritant and are not subject to special transport requirements.

## QUALITY AND CARE

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.

\* Properties listed are based on laboratory controlled tests.

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BASF\_CC-UAE/GI\_ACE456\_11\_08/v1/03\_14/v2/05\_19

## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF 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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