

# GLENIUM 79

New generation polycarboxylic ether hyperplasticiser for high performance concrete

## DESCRIPTION

**GLENIUM 79** has been primarily developed for applications in the premixed and precast concrete industries where the highest durability and performance is required in conjunction with improved workability and finishing.

**GLENIUM 79** is free from chlorides and complies with AS 1478.1 – 2000 Type HWR and ASTM C494 Types A and F.

Conventional superplasticisers, such as those based on sulphonated melamine and naphthalene formaldehyde condensates, at the time of mixing, become absorbed onto the surface of the cement particles. This absorption takes place at a very early stage in the hydration process. The sulphonic groups of the polymer chains increase the negative charge on the surface of the cement particle and dispersion of the cement occurs by electrostatic repulsion.

**GLENIUM 79** is differentiated from conventional superplasticisers in that it is based on a unique carboxylic ether polymer with long lateral chains. This greatly improves cement dispersion. At the start of the mixing process the same electrostatic dispersion occurs as described previously but the presence of the lateral chains, linked to the polymer backbone, generate a steric hindrance which stabilises the cement particles capacity to separate and disperse.

This mechanism provides flowable concrete with greatly reduced water demand.

## FEATURES AND BENEFITS

- Flowable concrete with low water/cement ratio without segregation or bleeding
- Allows reduction of curing cycles - i.e. time or temperature
- Possibility of elimination of steam curing
- Less vibration required even in case of congested steel reinforcement
- Less labour required
- Improves concrete surface finish and texture
- Compared to traditional superplasticisers, the addition of **GLENIUM 79** will improve the physical properties and thus the durability of concrete

**GLENIUM 79** increases:

- Early and ultimate compressive strength
- Early and ultimate flexural and tensile strength
- E-modulus
- Adhesion to reinforcement and prestressed steel
- Resistance to carbonation and chloride ion attack of concrete
- Resistance to aggressive atmospheric conditions

**GLENIUM 79** decreases:

- Risk of shrinkage
- Creep

## APPLICATION

The excellent dispersion properties of **GLENIUM 79** make it the ideal admixture for precast and premixed concrete where low water cement ratios are required. This property allows the production of very high early and high ultimate strength concrete with minimal voids and therefore optimum density. Due to the strength development characteristics, the elimination or reduction of steam curing in precast works may be considered as an economical option.

**GLENIUM 79** is a ready-to-use admixture to be added to the concrete mix as a separate component.

Optimal concrete plastising effect (and thus maximum water reduction) is obtained if **GLENIUM 79** is poured into the concrete mix right after the addition of the first 50-70% of the mixing water.

Avoid adding the admixture to the dry aggregate or sand.

**GLENIUM 79** is not compatible with admixtures containing melamine or naphthalene sulphonates. Contact your local BASF Technical Sales Representative to obtain the recommended compatible admixtures.

## DOSAGE

The normally recommended dosage rate is between 0.2-0.8 litres per 100kg of cementitious material (binder) depending on specific mix design and requirements. Other dosages may be recommended or used in special cases according to specific job conditions but the performance must be verified with trial mixes before committing to supply (consult your local BASF Technical Sales Representative for advice).

## PACKAGING

**GLENIUM 79** is available in 1000L pallecons and bulk.

## STORAGE

It is recommended to store **GLENIUM 79** in tightly closed packaging at moderate temperatures not below +5°C.

Recirculation of **GLENIUM 79** in bulk tanks is required on a regular daily basis and with all other containers prior to its actual use in concrete.

If frozen, thaw at approximately +30°C and agitate slowly until completely reconstituted. Do not use pressurized air to mix.

## SHELF LIFE

Up to 12 months if stored in unopened containers, according to manufacturer's instructions

## PRECAUTIONS

**GLENIUM 79** contains no hazardous substances requiring labelling. For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the



The Chemical Company

# GLENIUM 79

BASF Material Safety Data Sheet (MSDS) from our office or our website.

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## 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

Field service where provided does not constitute supervisory responsibility. Suggestions made by **BASF** either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not **BASF**, are responsible for carrying out procedures appropriate to a specific application.

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