

# CasTech HPS 002

High-Performance Hyper Plasticizer Admixture Based on Poly-Carboxylate Ether

Technical Data Sheet

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## Description

**CasTech HPS 002** is a high-performance hyper plasticizer based on advanced polycarboxylate technology, engineered to deliver exceptional water reduction for high-strength concrete.

It ensures excellent fluidity during placement and remarkable slump retention without compromising the initial setting time.

Designed for a broad spectrum of concrete mixes, **CasTech HPS 002** enhances workability while achieving both high early and ultimate compressive strengths. It is particularly suited for ready-mix and precast concrete applications where top-tier durability and performance are essential.

Unlike conventional superplasticizers that rely on electrostatic repulsion, **CasTech HPS 002** provides superior plasticizing action. It is not only inducing electrostatic repulsion but also stabilizes mixes through the static hindrance of long lateral chains connected to the polymer backbone, offering enhanced performance and stability.

## Uses

- Precast concrete with low water-cement ratios
- Ready-mix concrete
- Conventional concrete production
- Self-compacting concrete
- Hot weather concreting
- Highly durable concrete
- Pumped concrete
- High-performance concrete
- Concrete requiring long workability retention

## Advantages

- High workability without segregation.
- Self-compacting with no vibration needed.
- Easier placement in congested areas
- Reduced labor and improved surface finish.
- Chloride-free with enhanced strength and durability
- Better adhesion, lower permeability, and resistance to environmental factors
- Versatile for ready-mix, contractor, and engineering needs Improved surface finish.
- Reduced labor cost.

## Typical Properties at 25°C

Property	Value
Colour	Light Brown Liquid
Specific Gravity	1.10 ± 0.02 @ 25 °C
Chloride Content	NIL to BS 5075
pH	4.0 ± 1.0

## Standard

**CasTech HPS 002** complies with ASTM C 494 Type G and BS EN 934-2 1988.

## Dosage

Dosage rates will vary based on the desired level of plasticity and water reduction. The suggested dosage ranges from 0.50 to 1.5 liters per 100 kg of total cementitious material. In certain cases, different dosages may be recommended depending on specific site conditions. Conducting trial mixes is strongly advised to identify the optimal dosage for particular performance needs.

## Overdosing

Surpassing the recommended dosage may lead to increased retardation and enhanced workability. However, as long as proper curing is ensured, the ultimate strength of the concrete should remain unaffected. The impact of overdosing can be more pronounced when using cement replacement materials or Type V cement. Additionally, overdosing may result in higher air entrainment, which could potentially reduce strength.

## Curing

Curing methods to protect concrete surfaces should be adopted.

## Compatibility

**CasTech HPS 002** is fully compatible with all Portland cements that comply with recognized international standards. **CasTech HPS 002** is ideal for use in mixes containing micro silica, pulverized fuel ash, and ground granulated blast furnace slag cement.

Avoid using this product alongside naphthalene-based admixtures

## Dispensing

**CasTech HPS 002** 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 concrete after 50 to 70% of the mixing water has been added. The addition of **CasTech HPS 002** to dry aggregate or cement is not recommended.

## Storage and Shelf Life

Up to 1 year in unopened original packing, protected from extremes of heat and cold and stored under shade.

## Packaging

**CasTech HPS 002** is available in IBC, 210-liter drums and in 1000 L IBC tanks upon request.

## Precaution

**CasTech HPS 002** is water-based liquid and is not a fire or health hazard. However, it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Spillages should be washed down immediately with cold water. For further information refer to the Material Safety Data Sheet.

## Warranty

**CASTECH** products are guaranteed against defective materials and manufacture and sold subject to **CASTECH** standard terms and conditions of sale. Whilst **CASTECH** endeavors to ensure that any advice, information or recommendation given is correct, the company cannot accept any liability either directly or indirectly arising from the use of its products, since the company has no control over the application of its products. Information contained in this document is given on the best current knowledge. **CASTECH** policy is one of continuous improvement and the company reserves the right to change the company products without prior notice.

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