

Product Data Sheet

CasTech HPS-003

Nov-2025, Ver. 01.01



High-Performance Hyper Plasticizer based on Poly-carboxylate Ether

DESCRIPTION

CasTech HPS-003 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-003** 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 only, **CasTech HPS-003** also stabilizes mixes through the steric 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

Key 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

TYPICAL PROPERTIES

Consistence	Liquid
Colour	Light Brown
Chloride Content (BS 5075)	Nil
Classification According to ASTM C494 / BS EN 934-2	Type G / Complies
Specific Gravity	1.10 ± 0.02 @ 25°C
pH	4.0 ± 1.0

COMPATIBILITY

CasTech HPS-003 is fully compatible with all Portland cements that comply with recognized international standards. **CasTech HPS-003** 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.

INSTRUCTIONS FOR USE

CasTech HPS-003 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-003** to dry aggregate or cement is not recommended.

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 litres per 100 kg of total cementitious material. Different dosages may be recommended depending on specific site conditions. Trial mixes are strongly advised to identify the optimal dosage.

Overdosing:

Exceeding the recommended dosage may lead to increased retardation and enhanced workability; with proper curing, the ultimate strength of the concrete should remain unaffected. The impact is more pronounced with cement replacement materials or Type V cement. Overdosing may also increase air entrainment, which could reduce strength.

PRECAUTIONS

Health & Safety:

CasTech HPS-003 is a 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.

Curing:

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Curing methods to protect concrete surfaces should be adopted.

STORAGE

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

Fire:

CasTech HPS-003 is not a fire hazard.

PACKAGING

CasTech HPS-003 is available in 210-litre drums and in 1000 L IBC tanks upon request.

TECHNICAL SUPPORT

CasTech provides technical support service on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical Department in these cases.

CasTech MIDDLE EAST FZE

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