

# ADVA<sup>®</sup> Cast 575 Data Sheet

High-range water-reducing admixture -- ASTM C494 Type A and F and ASTM C1017 Type I

## Product Description

ADVA<sup>®</sup>Cast 575 is a high efficiency, low addition rate polycarboxylate-based high-range water reducer designed for the production of a wide range of concrete mixes, from conventional to Self-Consolidating Concrete (SCC). It is designed to impart extreme workability without segregation to the concrete.

ADVA<sup>®</sup>Cast 575 is supplied as a ready-to-use liquid that weighs approximately 8.9 lbs/gal (1.1 kg/L). ADVA<sup>®</sup>Cast 575 does not contain intentionally added chlorides.

## Product Advantages

- Excellent dosage efficiency, moisture control and air control
- Superior air entrainment control
- Enhanced concrete cohesiveness with low viscosity for rapid placement
- Superior finish on cast surfaces
- Enhanced strength development

## Uses

ADVA<sup>®</sup>Cast 575 is a plant-added superplasticizer that is formulated to impart improved workability to the concrete and to achieve high early compressive strength as required by the precast industry. ADVA<sup>®</sup>Cast 575 can be used for the production of SelfConsolidating Concrete in precast/prestressed applications and may be used in conventional concrete production.

ADVA<sup>®</sup>Cast 575 may be used in low water-cementitious ratio applications where concrete stability and improved tolerance to concrete material variability are required.

ADVA<sup>®</sup>Cast 575 may be used to produce concrete with very low water/cementitious ratios while maintaining normal levels of workability.

## Addition Rates

ADVA<sup>®</sup>Cast 575 is an easy to dispense liquid admixture. Dosage rates can be adjusted to meet a wide spectrum of concrete performance requirements. Addition rates for ADVA<sup>®</sup>Cast 575 can vary from 2 to 10 fl oz/100 lbs (130 to 650 mL/100 kg) with the type of application, but will typically range from 3 to 6 fl oz/100 lbs (200 to 390 mL/100 kg) of cementitious.

Should conditions require using more than the recommended addition rate, please consult your GCP Applied Technologies representative.

Mix proportions, cementitious content, aggregate gradations and ambient conditions will affect ADVA®Cast 575 dosage requirements. If materials or conditions require using more than the recommended addition rates, or when developing mix designs for Self-Consolidating Concrete please consult your GCP Applied Technologies representative for more information and assistance.

## Compatibility with Other Admixtures and Batch Sequencing

ADVA®Cast 575 is compatible with most GCP admixtures as long as they are added separately to the concrete mix. However, ADVA® products are not recommended for use in concrete containing naphthalene-based admixtures including DARACEM®19 and DARACEM®100 and melamine-based admixtures including DARACEM®65. In general, it is recommended that ADVA®Cast 575 be added to the concrete mix near the end of the batch sequence for optimum performance. Different sequencing may be used if local testing shows better performance. Please see GCP Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations.

Pretesting of the concrete mix should be performed before use and as conditions and materials change in order to assure compatibility with other admixtures, and to optimize dosage rates, addition times in the batch sequencing and concrete performance. For concrete that requires air entrainment, the use of an ASTM C260 air-entraining agent (such as DARAIR® or DAREX® product lines) is recommended to provide suitable air void parameters for freeze-thaw resistance. Please consult your GCP Applied Technologies representative for guidance.

## Packaging & Handling

ADVA®Cast 575 is a light blue liquid available in bulk, delivered by metered trucks, in totes and drums. ADVA®Cast 575 will freeze at approximately 32°F (0°C) but will return to full functionality after thawing and thorough mechanical agitation.

## Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available.

## ADVA® Cast 575 ASTM C494 Type F High-Range Water Reducer Test Data

|   | US UNITS - CONTROL | US UNITS - ADVA® CAST 575 | METRIC - CONTROL | METRIC - ADVA® CAST 575 |
|---|--------------------|---------------------------|------------------|-------------------------|
| Cement (pcy) (kg/m <sup>3</sup> )           | 517                | 517                       | 307              | 307                     |
| Coarse aggregate (pcy) (kg/m <sup>3</sup> ) | 1944               | 1944                      | 1153             | 1153                    |
| Fine aggregate (pcy) (kg/m <sup>3</sup> )   | 1144               | 1214                      | 679              | 720                     |
| Water (pcy) (kg/m <sup>3</sup> )            | 248                | 211                       | 147              | 125                     |
| w/cm  | 0.48               | 0.41                      | 0.48             | 0.41                    |
| Slump (inches) (mm)                         | 3.5                | 3.25                      | 89               | 83                      |
| Plastic air (%)                             | 5.4                | 5.5                       | 5.4              | 5.5                     |

Compressive strength

|                                 |        |        |        |        |
|---------------------------------|--------|--------|--------|--------|
| 1 day (psi) (MPa)               | 1460   | 2050   | 10.1   | 14.1   |
| 7 day (psi) (MPa)               | 4380   | 6040   | 30.2   | 41.6   |
| 28 day (psi) (MPa)              | 5570   | 7270   | 38.4   | 50.1   |
| Initial set time (hr:min)       | 4:56   | 3:57   | 4:56   | 3:57   |
| Length change 28 day (%)        | -0.027 | -0.029 | -0.027 | -0.029 |
| Freeze-thaw resistance (RDME %) | 88     | 91     | 88     | 91     |

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This product or its use may be covered by US Patent Nos. US8187376 and/or US8317918.

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