

# ADVA® 140M Data Sheet

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

## Product Description

ADVA®140M is a high-range water-reducing admixture based on polycarboxylate technology specifically formulated to meet the needs of the concrete industry. ADVA®140M meets the requirements of ASTM C494 as a Type A and F, and ASTM C1017 Type I. One gallon weighs approximately 8.8 lbs (1.1 kg/L) and does not contain intentionally added chloride. It is a low viscosity liquid that has been formulated by the manufacturer for use as received.

## Product Advantages

- Can be used as a high-range water reducer as well as a mid-range water reducer providing production flexibility
- Consistent air entrainment
- Consistent performance across cement chemistries
- Provides a superior combination of long slump life with near neutral set time
- Concrete finishes easily without stickiness, tearing or spotty set characteristics

## Uses

ADVA®140M has been used successfully in a wide variety of concrete applications for high-slump, low water-to-cementitious ratio concrete requiring a high-range water reducer to flatwork in residential applications requiring a mid-range water reducer. ADVA®140M produces concrete with excellent workability characteristics for high slump and moderate slump concrete.

ADVA®140M is ideal for use in any concrete where it is desired to keep the water/cementitious ratio to a minimum and still achieve the high strength and degree of workability necessary to provide easy placement and consolidation. ADVA®140M will also fluidize concrete making it ideal for tremie concreting or other applications where high slumps are desired.

## Addition Rates

Addition rates of ADVA®140M can vary with type of materials and application. The addition rate can range between 2 oz/cwt and 20 oz/cwt (130 mL/100 kg and 1300 mL/100 kg) of cement.

Typical addition rates are:

- High-range water reducer—9 to 16 oz/cwt (590 to 1040 mL/100 kg)
- Mid-range water reducer—5 to 9 oz/cwt (325 to 590 mL/100 kg)

Optimal addition rates will depend on other concrete mixture components, job conditions, and desired performance characteristics. At a given water/cementitious ratio, the slump required for placement can be controlled by varying the addition rate. Should job site conditions require using more than recommended addition rates, please consult your GCP Applied Technologies representative.

## Compatibility with Other Admixtures and Batch Sequencing

ADVA<sup>®</sup>140M is compatible with most GCP admixtures as long as they are added separately to the concrete mix. However, ADVA<sup>®</sup> products are not recommended for use in concrete containing naphthalenebased admixtures including DARACEM<sup>®</sup>19 and DARACEM<sup>®</sup>100, and melamine-based admixtures including DARACEM<sup>®</sup>65. In general, it is recommended that ADVA<sup>®</sup>140M 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 DARAVAIR<sup>®</sup> or DAREX<sup>®</sup> 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<sup>®</sup>140M is available in bulk, delivered by metered tank trucks, totes and drums. It will begin to freeze at approximately 32 °F (0 °C), but will return to full strength after thawing and thorough agitation.

In storage, and for proper dispensing, ADVA<sup>®</sup>140M should not experience prolonged exposure below 32 °F (0 °C) nor above 132 °F (55 °C).

## Dispensing Equipment

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

## ADVA<sup>®</sup> 140M ASTM C494 Type F High-Range Water Reducer Test Data

	US UNITS - CONTROL	US UNITS - ADVA <sup>®</sup> 140M	METRIC - CONTROL	METRIC - ADVA <sup>®</sup> 140M
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> )	235	201	139	119
w/cm	0.455	0.389	0.455	0.389
Slump (inches)	3.75	3.75	95	95
Plastic air (%)	5.5	5.5	5.5	5.5
<b>Compressive strength</b>				
1 day (psi) (MPa)	1860	2750	12.8	19.0

7 day (psi) (MPa)	4520	5850	31.2	40.3
28 day (psi) (MPa)	5440	6640	37.5	45.8
Initial set time (hr:min)	4:02	4:18	4:02	4:18
Length change 28 day (%)	-0.031	-0.024	-0.031	-0.024
Freeze-thaw resistance (RDME %)	92	96	92	96a

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This product or its use may be covered by US Patent Nos. 6,441,054; 7,972,436; 7,462,236.

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