

# MIRA<sup>®</sup> 95 Data Sheet

Water-reducing and mid-range water-reducing admixture ASTM C494 Type A and Type F

## Product Description

MIRA<sup>®</sup>95, a polycarboxylate-based mid-range water-reducing admixture, is manufactured under rigorous quality control to ensure uniform, predictable performance. The product does not contain added calcium chloride, weighs approximately 8.6 lbs/gal (1.03 kg/L), and meets the requirements of ASTM C494 Type A and F.

MIRA<sup>®</sup>95 mid-range water reducer admixture is developed to deliver superior water reduction over a range of dosage rates by dispersing cement agglomerates more efficiently within the concrete matrix. The superior dispersion capability it produces concrete with significantly improved early and ultimate compressive strength while maintaining near neutral set times. The linear dose water reduction capability of MIRA<sup>®</sup>95 mid-range water reducer also produces less permeable, more durable concrete.

## Uses

MIRA<sup>®</sup>95 mid-range water reducer is recommended for use with a wide range of concrete slumps including 3 to 8 in (75 to 200 mm) where superior finishing characteristics is desired, particularly in commercial and residential flatwork, and formed concrete applications. The product may be used in a wide variety of applications, including ready mix, job site, and concrete paving plants for normal and lightweight concrete, and precast products.

## Product Advantages

MIRA<sup>®</sup>95 mid-range water reducer offers significant advantages over conventional water reducers:

- **Linear water reduction capability:** The neutral set capability of the product throughout a wide range of dosage rates allows the producer to have “peace of mind” by knowing they can utilize a single admixture to meet all their water reducer and mid-range water reducer needs and requirements. The versatile water reduction capability of it may be used to produce high quality, workable concrete over a wide range of water/cement ratios.
- **Superior strength performance:** The superior water reduction properties (up to 15%) and excellent dispersion characteristics allow the production of lower water to cement ratio concrete, with more complete cement hydration. This combined effect results in increased compressive and flexural strengths at all ages.
- **Neutral set times:** With MIRA<sup>®</sup> 95 mid-range water reducer concrete, neutral setting times can be maintained over a wide range of dosage rates and temperature conditions.
- **Superior workability and finishability:** The exceptional water-reducing performance allows for concrete production at 3 to 8 in. (75 to 200 mm) slumps, providing smooth flowing concrete with improved placement properties. Floating and troweling, by machine or by hand, easily imparts a smooth, close tolerance surface with less machine time and labor.
- **Improved performance for use with pozzolans:** MIRA<sup>®</sup> 95 mid-range water reducer improves the quality of lean, harsh concrete mixes, and concrete that contains fly ash (both Class C and Class F) and GGBF slag, delivering superior workability, finishability and pumpability. The neutral set characteristics allow incremental cement replacement with pozzolans.

## Addition Rates

Addition rates may be varied to achieve the desired water reduction and set time. Typically, addition rates can vary from 2–15 fl oz/100 lbs (130–1000 mL/100 kg), but will typically range from 6–12 fl oz/100 lbs (390–780 mL/100 kg) of cementitious materials. Addition rates may vary depending on materials, job conditions and desired performance characteristics. Please consult your GCP Applied Technologies representative for information and assistance.

## Compatibility with Other Admixtures and Batch Sequencing

MIRA<sup>®</sup>95 mid-range water reducer is compatible with most GCP admixtures as long as they are added separately to the concrete mix, usually through the water holding tank discharge line. However it is not recommended for use in concrete containing naphthalene-based admixtures including DARACEM<sup>®</sup>19 and DARACEM<sup>®</sup>100. In general, it is recommended that the product be added to the concrete mix near the end of the batch sequence for optimum performance.

Please see GCP Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations. For optimum performance, MIRA<sup>®</sup>95 mid-range water reducer should not come in contact with any other admixture before or during the batching process. Different sequencing may be used if local testing shows better performance.

Pretesting of the concrete mix should be performed before use, and as conditions and materials change in order to assure compatibility, 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 representative for guidance.

## Packaging & Handling

MIRA<sup>®</sup>95 mid-range water reducer is available in bulk, delivered by metered tank trucks, in 275 gal (1040 L) totes, and in 55 gal (208 L) drums. The product will begin to freeze at approximately 25 °F (-4 °C) but will return to full strength after thawing and thorough agitation. In storage and for proper dispensing, the temperature should be maintained above 32 °F (0 °C).

## Dispensing Equipment

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

## Specifications

Concrete shall be designed in accordance with *Standard Recommended Practice for Selecting Proportions for Concrete*, ACI 211.

The mid-range water-reducing admixture shall be MIRA<sup>®</sup>95 midrange water reducer as manufactured by GCP Applied Technologies, or its equivalent. It shall be manufactured to meet all the requirements of *Specification for Chemical Admixtures for Concrete*, ASTM Designation C494 as a Type A and Type F admixture.

The admixture shall be delivered as a ready-to-use, liquid product and shall not contain added calcium chloride. It shall be used in strict accordance with manufacturers' recommendations.

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This product or its use may be covered by US Patent Nos. 7,462,236; 8,187,376; 8,317,918.

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Last Updated: 2024-06-21

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