

# TYTRO<sup>®</sup> RM 455

Rheology modifying admixture for shotcrete

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## Product Description

TYTRO<sup>®</sup>RM 455 is a high efficiency, liquid admixture designed to enable placement of shotcrete by modifying its rheology. TYTRO<sup>®</sup>RM 455 works by increasing the viscosity of the shotcrete while still allowing the concrete to flow without segregation. TYTRO<sup>®</sup>RM 455 is based on a unique, patented biopolymer and is manufactured under closely controlled conditions to provide uniform, predictable performance.

TYTRO<sup>®</sup>RM 455 is formulated to meet the requirements of ASTM C494 Type S, specific performance admixture. TYTRO<sup>®</sup>RM 455 admixture is supplied as a ready-to-use milky white liquid. One liter weighs approximately 1.02 kg. TYTRO<sup>®</sup>RM 455 contains no intentionally added chlorides.

## Uses

TYTRO<sup>®</sup>RM 455 is used in all shotcrete applications where mixes with varying fines content, low cement content or, unsatisfactory aggregate grading with poor water retention lead to segregation during pumping and result in extremely high pump pressures, especially in the following shotcrete applications:

- Temporary and permanent rock support in tunnels
- Underground rock support in mining
- Slope stabilization

## Addition Rates

The dosage of TYTRO<sup>®</sup>RM 455 can vary based on the mix design, cementitious content, water-to-cementitious materials ratio, aggregate gradations and local conditions.

The dosage of TYTRO<sup>®</sup>RM 455 normally ranges between 0.2% and 1% by the total weight of cementitious materials. Should conditions require using more than the recommended addition rates, please consult your GCP representative.

GCP recommends that trials be performed with cement and aggregates under local conditions before use to assess and optimize dosage rates and performance.

## Product Advantages

- Enhanced pumpability and sprayability
- Improved cohesion
- Reduced segregation
- Minimum material waste – Lower rebound and dust
- Robust and easy to formulate – More consistent quality shotcrete
- Extended service life of equipment – Less wear and tear on pumps and pipes

## Packaging

TYTRO<sup>®</sup>RM 455 is available in bulk, totes, drums and in pails.

## Storage

### Temperature

TYTRO<sup>®</sup>RM 455 should be stored at a temperature range of 2 °C to 35 °C.

If TYTRO<sup>®</sup>RM 455 freezes, it will return to full effectiveness after thawing and thorough mechanical agitation. It is recommended that your local GCP sales representative be consulted prior to the use of any products that may have been frozen. Performance tests should always be carried out prior to use.

### Conditions

TYTRO<sup>®</sup>RM 455 must be kept in closed plastic containers or closed tanks under cover, out of direct sunlight and protected from extreme temperatures.

## Health and Safety

Avoid eye and skin contact and wear rubber gloves and safety glasses when handling this product. If contact occurs, rinse with plenty of water and seek medical advice.

For further information, refer to the SDS (Safety Data Sheet) or contact your local GCP represent

## Compatibility

TYTRO<sup>®</sup>RM 455 is compatible with all GCP TYTRO<sup>®</sup>shotcrete admixtures.

GCP recommends that a suitable high-range water-reducing admixture be incorporated into the shotcrete mix to achieve the required strength performance and setting characteristics. TYTRO<sup>®</sup>WR series of high-range water-reducing admixtures is recommended for this purpose.

Pretesting of the shotcrete mix should be performed before use and as conditions and materials change in order to ensure compatibility with other admixtures.

For use with other shotcrete admixtures systems, we recommend you contact GCP for further advice.

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Last Updated: 2022-05-06

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