

# TYTRO<sup>®</sup> RM 455 Data Sheet

Rheology modifying admixture for shotcrete

## 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.

[gcpat.com](http://gcpat.com) | North America customer service: 1-877-423-6491

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use that would infringe any patent, copyright or other third-party right.

TYTRO is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies, Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2018 GCP Applied Technologies Inc. All rights reserved.

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Suite 400, Alpharetta, GA 30009, USA

GCP Canada, Inc., 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6

This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on [www.gcpat.com](http://www.gcpat.com). Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2023-06-28

[gcpat.com/solutions/products/tytro-shotcrete-system/tytro-rm-455-data-sheet](http://gcpat.com/solutions/products/tytro-shotcrete-system/tytro-rm-455-data-sheet)