

TGA3 and ALLEVIATE®

Wheel / Rail Interface Traction Enhancement for mining operations

L.B. Foster's TGA3 Traction Gel Applicator system and ALLEVIATE® traction enhancing consumable are proven to improve adhesion conditions at the wheel/rail interface.

Loss or lack of adhesion can result in braking and traction problems, which in turn can lead to serious safety concerns and operational inefficiencies in mining operations.

L.B. Foster's TGA3 Traction Gel Applicator system and ALLEVIATE® traction enhancers work together to deliver reliable adhesion enhancement in all operating environments.

The TGA3 is an intelligent, trackside application system which dispenses ALLEVIATE traction enhancer precisely to the wheel / rail interface. ALLEVIATE traction enhancers are advanced, water-based gels engineered to increase adhesion without affecting signalling.

Together, this solution increases friction levels between the wheel and rail, ensuring safer braking, smoother acceleration, and preventing costly delays, stop overruns, and operational inefficiencies.

With decades of global field experience, remote performance monitoring options, and a design refined for quick installation and easy maintenance, L.B. Foster delivers a complete solution that keeps railroad operations running safely and efficiently.



Key Benefits

- > Reduce operational issues and safety concerns related to low adhesion
- > Enhanced braking and traction
- > Reduce station and stop zone overruns
- > Ensure maximum car loadings achieved
- > Reduced risk of signals passed at danger
- > Fewer train delays and improved reliability
- > Less risk to vehicle head ways
- > Reduced risk of track circuit failures due to leaf fall
- > Fewer wheel flats

Key Features

- > ALLEVIATE is a viscous, water-based gel.
- > The gel's viscosity ensures it remains effective on the top-of-rail surface.
- > ALLEVIATE does not interfere with signalling
- > TGA3 75 Litre (19.8 USG) tank provides sufficient capacity to optimize maintenance and refilling program.
- > TGA3 lightweight and portable allowing ease of installation. Dry system weight is approximately 45 kg (100 lb).
- > Easily retrofittable into existing mining operations.
- > Cabinet dimensions are W 798 mm (31.4 in) x H 1082 mm (42.6 in) x D 464 (18.3 in)
- > Optional quick-release fasteners simplify the fitting of the rail mounted components (applicator bars and wheel sensors).

What they said

"Simply by introducing L.B. Foster TGA3 systems and ALLEVIATE at key locations, our mine was able to increase car loadings by up to 46%."

Mine operator after recent TGA3 and ALLEVIATE implementation

Traction Enhancement in Mining Operations

Case Study

How TGA3 and ALLEVIATE implementations can drastically improve mining operations struggling with low adhesion

L.B. Foster was approached by representatives of one of the largest underground mining complexes in the world. The mine relies on an automatically controlled locomotive fleet responsible for the loading and delivery of the mined ore on a network of 23 km (14 miles) of track.

The customer was experiencing issues with low adhesion on the tracks located within the underground tunnels. They needed a solution to prevent wheel slide on the locomotives as this was leading to operational issues. Any wheel slip/slide incidents required a pause in operations to reset the automatic locomotives in order to allow them to restart movements. This was costing the mine a significant amount of unproductive time in carrying out reset procedures. As a temporary measure, train car loadings were significantly decreased to reduce the chance of slides.

L.B. Foster supported an initial trial applying the ALLEVIATE to the head of the rail by hand using rollers and brushes. This trial successfully restored friction levels on the rail surface and reduced the frequency of wheel slip incidents and increasing uptime of the locomotives.

On the basis of this successful trial, the customer installed several TGA units applying ALLEVIATE Traction gel. Continual monitoring of the operations showed car loading restored to the original design specification, an increase of up to 46%.



The Problem

- > Low adhesion in underground mine causing wheel slip/slides in critical loading and unloading areas.
- > Each incident necessitating pause in operations to reset locomotive
- > Mine forced to significantly reduce car loadings as a corrective measure

The Results

- > Elimination of low adhesion in critical areas.
- > Car loadings increased by up to 46%, back up to maximum design specification

North America

L.B. Foster Company
t: +1-866-523-7245
e: TotalFrictionManagement@lbfoster.com

China

L.B. Foster Technologies (Beijing) Ltd.
t: +86 10-6462-0986
e: lbftbj@lbfoster.com

Brazil

L.B. Foster Produtos Ferroviários do Brasil Ltda.
t: +55 32 3215-1034
e: info.br@lbfoster.com

UK, Europe, Middle East, Africa

L.B. Foster Rail Technologies (UK) Ltd.
t: +44 (0) 114 256 2225
e: reply@lbfoster.com

Asia Pacific

L.B. Foster Company
t: +1-412-928-3400
e: APACSales@lbfoster.com

Latin America

L.B. Foster Company
t: +1-832-317-5072
e: Latam@lbfoster.com

Data provided in this bulletin is to be considered as representative of current production generally and not as specifications. While all the data presented in this bulletin is believed to be reliable and because conditions of use are beyond our control, L.B. Foster makes no representations, guarantees or warranties, expressed or implied, including but not limited to any implied warranty or fitness for a particular purpose or as to the correctness or sufficiency of data herein presented. Each user should conduct a sufficient investigation to establish the fitness of any product for its intended purpose. No agent, representative or employee of this company is authorized to vary any of the terms of this notice.

L.B. Foster®, PROTECTOR™, and ALLEVIATE® are trademarks of the L.B. Foster Company



LBFoster