

TECHNICAL DATA SHEET

FRICIONMANAGEMENT

Alleviate™

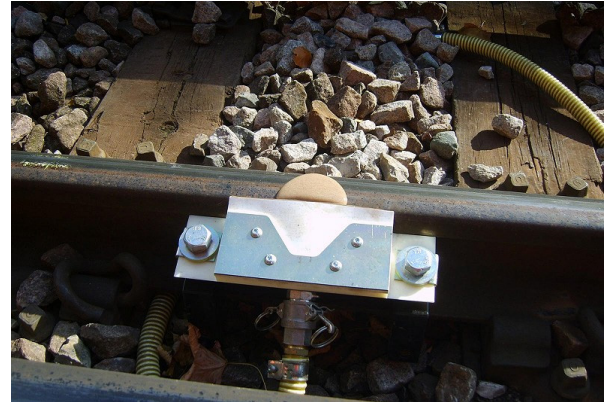
Top-of-Rail Traction Enhancer

Alleviate™

Top-of-Rail Traction Enhancer

L.B. Foster® has undertaken considerable research in the development of traction enhancing materials. One of the products developed from this research, together with L.B. Foster's extensive knowledge of friction modifiers and their effects at the wheel/rail interface, is **ALLEVIATE®**.

- > **ALLEVIATE** is a high performance traction enhancer designed to improve adhesion conditions at the wheel/rail interface. It is designed for use on all locations and at all times of the year where loss of traction could be an issue. As **ALLEVIATE** is a viscous water-based gel, it can be applied directly on to the rail head and is proven not to interfere with track signalling. It achieves enhanced friction levels by a combination of abrasive action to weaken and remove hardened leaf layers and placement of sand particles directly on the rail head to provide grip between the wheel and rail.
- > **ALLEVIATE** can be offered as a complete trackside solution using the **L.B. Foster Traction Gel Applicator (TGA3)**. This system provides a regulated output delivery for optimum performance. **ALLEVIATE** can also be applied using other equipment such as hand-held devices or vehicle mounted systems.
- > **ALLEVIATE** is a water-based biodegradable liquid consisting of an engineered composite of abrasive solids (graded sands), thickeners, binders, and other additives including corrosion inhibitors, preservatives, and freezing point depressants. The product has an 21 month shelf life if stored using recommended conditions.
- > **ALLEVIATE** can be used as a seasonal traction enhancer and is particularly useful for dealing with the problems of leaf fall or other problematic surface conditions such as wet rail phenomenon.
- > Product effectiveness has been verified by numerous means, including field trials, laboratory studies and performance testing on the SUROS twin disk machine at the University of Sheffield. Testing has demonstrated the ability of **ALLEVIATE** to rapidly restore adhesion to a safe operating level similar to that of uncontaminated conditions.



Key Benefits

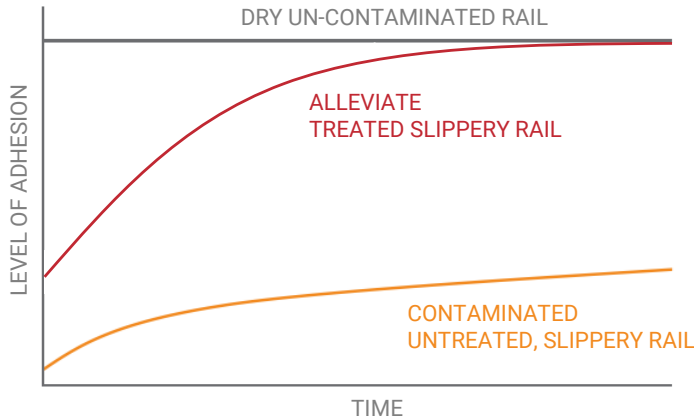
- > Fewer operational and safety related problems
- > Reduced risk of signals passed at danger
- > Fewer station overruns
- > Fewer train delays and improved reliability
- > Less risk to vehicle headways
- > Reduced risk of track circuit failures
- > Fewer wheel flats
- > Enhanced braking and traction capability

Key Features

- > Water-based Top-of-Rail traction enhancer
- > Product acts to weaken difficult leaf film layers and restore friction
- > Autumn and Winter grades
- > Manufactured in the UK
- > Suitable for a variety of traction enhancer systems
- > Compatible with all Network Rail approved Traction Gel Applicators
- > ALLEVIATE is a Network Rail approved product; Approval number PA05/04882, PAD number 0057/055766

TECHNICAL SPECIFICATIONS

	Method	Unit	ALLEVIATE	ALLEVIATE LT
Product Code			MED0013 (10 L Pail)	MED0045 (2.6 gal, 10 L Pail)
Season			Autumn	Autumn/Winter
Appearance			Beige Thixotropic Gel	Beige Thixotropic Gel
Base			Water	Water
Viscosity at 25 °C	Brookfield RV6 at 20 rpm	cP	13,500 - 14,500	10,500 - 11,500
Density at 25 °C	ASTM D1475	g/cm ³	1.35 - 1.45	1.35 - 1.45
Freezing Point	ASTM D2386-97	°C	-6 °C	-16 °C
pH	ASTM E70		9 - 10	9 - 10
Product Stability ¹	Modified ASTM D2243-95		Pass	Pass
Aquatic Toxicity	OECD 203		Non-Toxic	Non-Toxic
Flammability			Non-Flammable	Non-Flammable
Environment			Product has low mobility and is not expected to bioaccumulate	Product has low mobility and is not expected to bioaccumulate



The graphic on the left depicts the very low levels of adhesion typically observed with wet, slippery rail. These low levels of adhesion can result in very poor traction.

When the same wet, slippery rail is treated with **ALLEVIATE**, much higher levels of adhesion are observed. The resulting traction then becomes very similar to dry rail.

NOTES

1. The product stability test accelerates the effect of freeze-thaw cycling on the product stability of water-based materials. The material is cycled from -18 °C to 70 °C continuously over a week of testing. A pass indicates that no signs of product separation or settling has occurred during the test.
2. Recommended storage is within a warehouse at a temperature between 5 °C and 35 °C. Avoid exposure to heat sources such as direct sunlight. Keep containers sealed to prevent water loss. If recommended storage conditions are used, the shelf life of the product is 21 months.
3. For additional technical information, please contact your L.B. Foster representative.

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