

Technical Specification

WR110 Wire Rope Grease

WR110 Grease is a speciality grease designed for conveyor bearings, or similar applications. With a soft formulation that is a combination of naturally derived ingredients, the lubricant can be easily applied via cartridge or similar means for simple and direct *in situ* use.

The ingredients in this unique grease provide multiple benefits. WR110 has natural corrosion inhibition properties resulting from lanolin and lanolin derivatives. The naturally occurring trace elements are the same found in many synthetically produced, speciality gear lubricants, specifically known corrosion protection metals: iron, phosphorus, magnesium, and zinc.

This product meets the criteria for approval for production and manufacturing environments where there may be incidental contact with food, therapeutic goods, or similar products, and that each of the ingredients is free from allergens, including pollen, nuts and grains.

The ingredients in this naturally derived grease are sourced from sustainable, agricultural resources, which are Australian grown and produced.

Properties	Units	Test Method	Range	Typical
Appearance	None	Visual	Dark, brown, glossy paste	Characteristic
Odour	None	Inspection	Faint lanolin aroma	Low odour
Relative Density	kg.m ⁻³	ASTM D	0.910 – 0.945	0.932
Metals	ppm	ICP		
Barium			Up to 20	10
Calcium			< 330	100
Magnesium			Up to 25	10
Molybdenum			Up to 25	1
Phosphorus			Up to 25	10
Zinc			Up to 25	20
Sodium			Up to 25	20
Iron			Up to 25	20
Aluminium*			< 25	20
Copper			< 1	< 1
Chromium			< 1	< 1
Lead			< 1	< 1
Manganese			< 1	< 1
Tin			< 1	< 1
Water content	ppm	Karl-Fisher	400 – 850	680

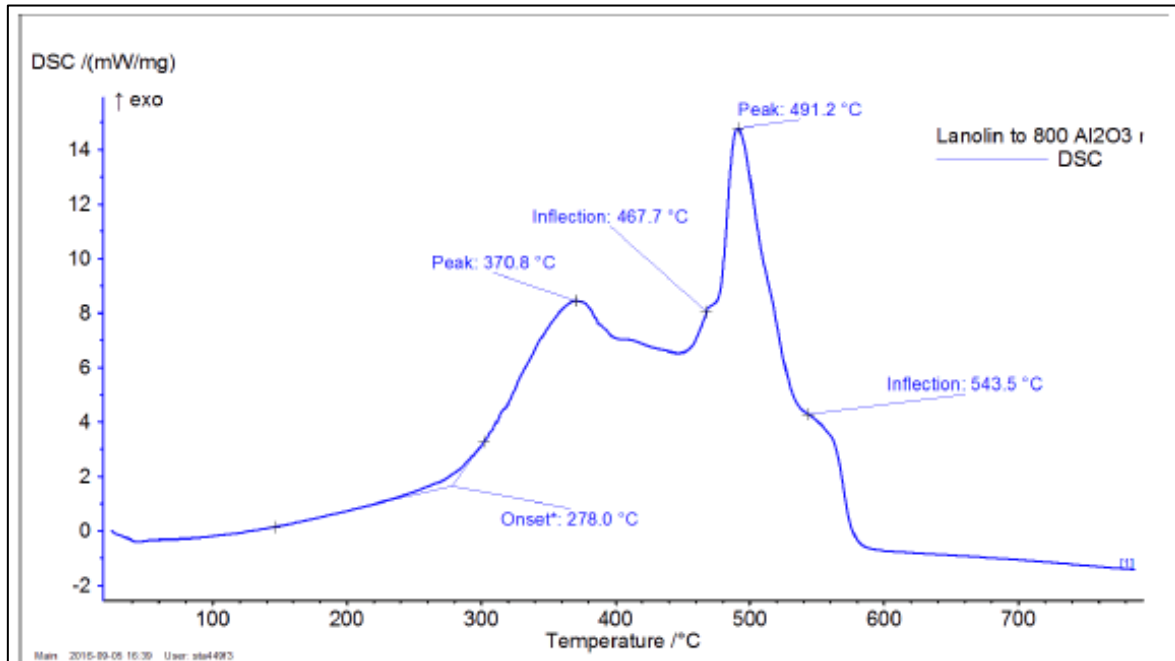
* Present as residual potassium aluminium sulfate (alum), used as filtering agent in manufacturing process.

The information in this document is given in good faith and is true and accurate to the best of company knowledge. No warranty or guarantee (e.g. on suitability for a formulation) is expressed or implied. This document reflects legislative knowledge at the time of preparation, and may be subject to change in the future. It is the user's responsibility to determine the suitability for use of the information presented, and to ensure compliance, at any time. No warranty or freedom is given regarding the industrial property rights of Lantos Coatings Ltd or third parties. No responsibility or liability for any consequences arising from the use of this document can be accepted. This version replaces earlier versions. The information in this document cannot be reproduced in part or whole without the express permission of Lanolin Technologies Pty Ltd a JV company with Lantos Coatings Ltd. Copyright © 2019.

Optimum Operating Temperature: WR110 Grease

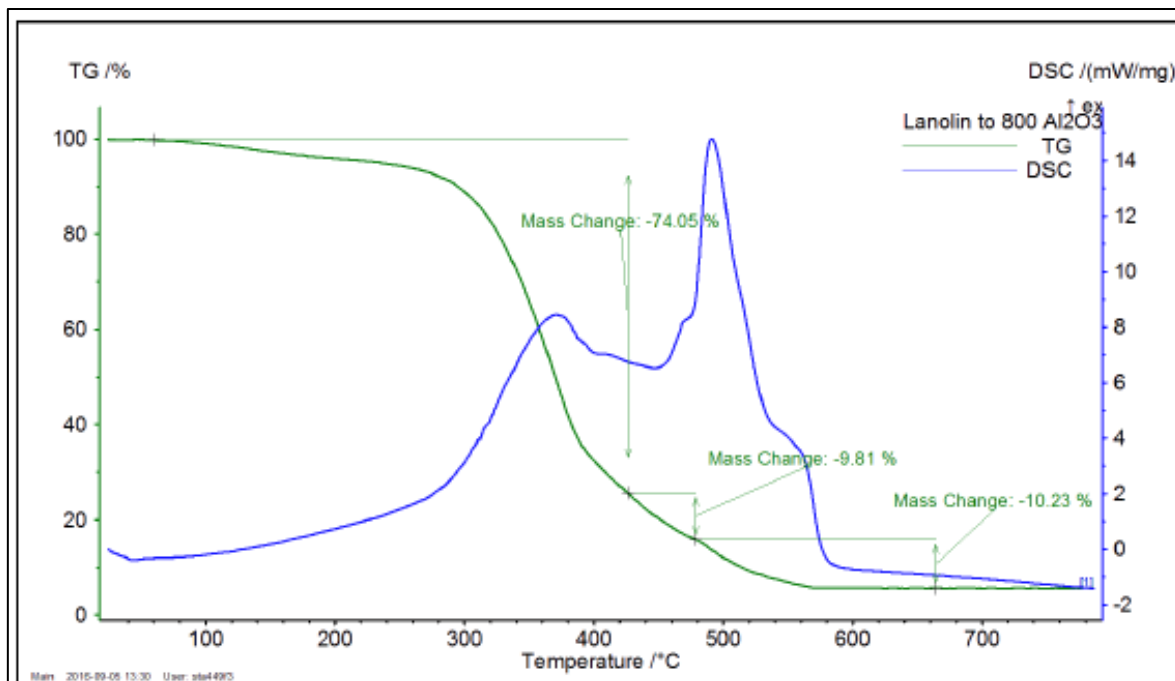
The oxidation behaviour of this grease has been determined by simultaneous thermal analysis: Differential Scanning Calorimetry (DSC) and Thermo gravimetric Analysis (TGA), to confirm the optimum, recommended operating temperature, and determine the temperature at which the product ceases to function as an effective lubricant.

The study was conducted between ambient temperatures (25°C) and 800°C, and ambient to 500°C, then oxidation tests were performed to pinpoint the degradation of the grease at 160°C, 170°C, 180°C, 190°C, and 200°C, based on the information resulting from the DSC.



The heating and degradation of WR110 demonstrates that the product has a non-linear exothermic pyrolysis process, meaning that as the equipment to which the grease is applied is partially insulated from heating will the equipment is operating. In effect, the grease withstands incremental increases in temperature without degrading or oxidising and continues to protect the equipment throughout high temperature processing.

When WR110 starts to oxidise (around 278°C), the degradation process follows three stages of oxidation degradation (burning), and is completely oxidised and used up around 600°C. This indicates that the product burns to completion, cleanly, leaving no residue.



The results of the study shows that the product does not oxidise at all until around 180°C, and that sustained operation up to 170°C with this product would offer effective equipment protection at these temperatures.