

high performance  
lubricants  
for sugar cane industry

SUGARPRESS | BR  
SUGARPRESS | OG  
OMNIGEAR ADVANCE  
TARMELA 305

**LAAPSA**

lubricantes de alta performance

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# Knowledge, Experience and Technology: Best Solutions for Industrial Lubrication

In a world with increasing requirements, we provide effective answers and specific solutions of different complexity degrees; It has been our goal and our continuous commitment for more than 15 years to transform our customer's needs in innovations and improvement of the production processes.

LAAPSA is supported by a team with highly qualified chemists and technical assistants, who excel developing and recommending better praxis in industrial lubrication, approaching advanced technologies by means of a complete supply of solutions with the objective to optimize performances and costs.

LAAPSA certified ISO 9001/2000, focusing on the customer's need for quality assurance, team work, continuous improvement, and beneficial relations with customers and suppliers.



# INTRODUCTION

## THE CANE SUGAR INDUSTRY

World's cane sugar production is directly related to the sugar production. This in the last three years averaged 112 million tons, outstanding as the mayor producer's countries Brazil, Thailand, Australia, Cuba and India.

Annual consumption is now running at about 120 million tons and is expanding at a rate of about 2 million tons per annum.

Today's modern sugar industry is still beset with government interference at many levels and throughout the world. The European Union, Brazil and India are the top three producers and together account for some 40% of the annual production. However most sugar is consumed within the country of production and only approximately 25% is traded internationally.

One of the most important examples of governmental actions is within the European Union where sugar prices are so heavily subsidized that over 5 million tons of white beet sugar have to be exported annually and yet a million tons of raw cane sugar are imported from former colonies. This latter activity is a form of overseas aid which is also practiced by the USA. The EU's over-production and subsequent dumping has now been subjected to GATT requirements which should see a substantial cut-back in production over the next few years.

On the other hand environmental issues as the need for renewable fuel has shown to be a solution for many countries which are looking for a way out of the fossil fuel trap, with demand for ethanol.

Also considering that the per capita sugar consumption tendency in underdeveloped countries is decreasing and that Asian countries

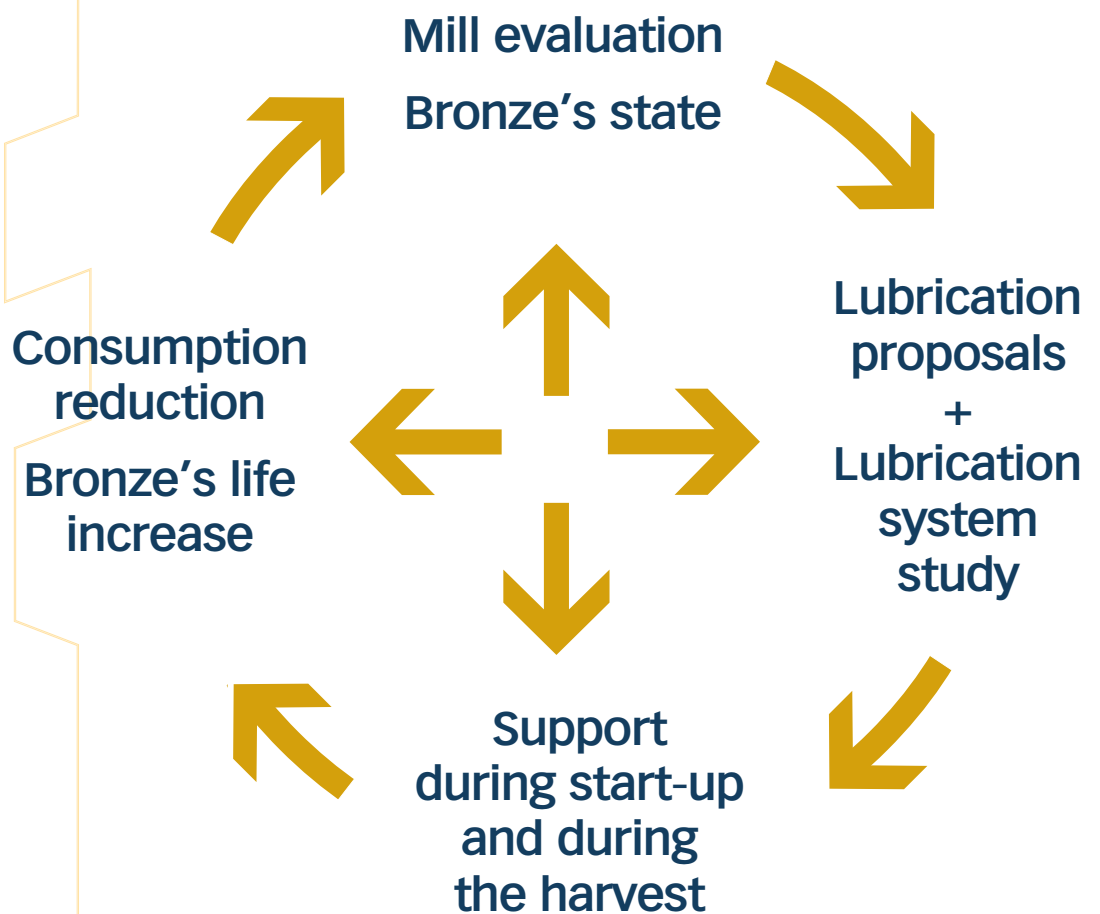
consumption is culturally lower, a strong pressure on imports from Japan, South Korea and China should be expected in the coming years.

This situation of sugar's scarcity in world's markets is pushing sugar's prices up and stimulated the production in several countries. There are some good reasons to expect promising perspectives for the sugar cane producing countries.



In the last years new lubricants have been developed in order to replace asphaltic cut back oils from the sugar industry because of higher requirements and standards for security, health and environmental issues. By taking advantage of the differentiated characteristics of the new oils, LAAPSA introduces a product program of high value for the protection of equipments involved in the cane sugar production.

Besides the lubricant offer, we understand that the best approach and the best decision will be reached by carrying out a thorough check out of the production environment.



**sugarpres|br** is a group of Premium fluids made of a blend of organic and synthesized hydrocarbons, resulting in “gel- type” compounds with tixotropic properties. This will ensure a lubricating film with superior viscosity, capable to resist the highest load stresses in the large roller mill’s thrust bearings of the extraction process.

Its structure conformed by special polymers of high resistance to the deformation generates a very high hydraulic resistance; its stability, high thickness and its adhesiveness conform a ring that remains and seals the brass bushings, resisting the water-washout, and avoiding the entrance of pollutants as juice and bagasse.

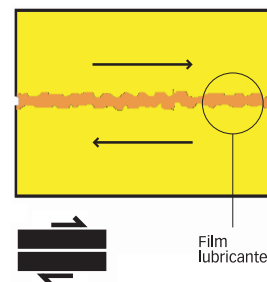
The additive chemistry of SUGARPRESS | BR resists the high temperatures generated between the friction elements avoiding seizure.

## APPLICATIONS

SUGARPRESS BR has been designed to lubricate and to **protect** journal bearings or crown wheels, open gear transmissions and its support bearings, semi enclosed transmissions gears of crystallizers and dryers, with the capability to **resist** the permanent attack of pollutants as vapor, water, juice and trash.

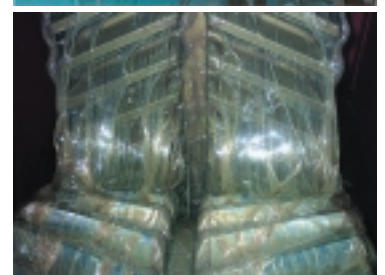
The quantities of SUGARPRESS | BR needed to effectively lubricate the mill brases is up to 10 times less when compared to the quantities normally used of asphaltic cutback type lubricant and up to 30% less compared to graphite type greases. Tests and documented trials show that temperature readings measured at a distance of 6 mm of the friction area between brass bushing and shaft are about 100°C/210°F.

Asphaltic base oil	Graphite type grease base oil	<b>SUGARPRESS BR base oil</b>
Viscosity at 100° C 80 cst	Viscosity at 100° C 30 cst	<b>Viscosity at 100° C 600 to 800 cst</b>



## OUTSTANDING BENEFITS

- ✓ CONSUMPTION SAVINGS OF UP TO 1:10 COMPARED TO ASPHALTIC OILS AND OF UP TO 50% COMPARED TO GRAPHITE TYPE GREASES.
- ✓ CLEAN LUBRICATION FROM THE START
- ✓ HIGH PROTECTION AGAINST SEIZURE AND WEAR, AVOIDING EXPENSIVE REPAIRS
- ✓ EASY CONVERSION TO AUTOMATIC LUBRICATION EQUIPMENT [FAZZANARO, FARVAL, LINCOLN, ETC.] BY ADJUSTING THE CONSUMPTION LEVELS TO SUGARPRESS | BR BEST PERFORMANCE
- ✓ IT PROVIDES AN EFFECTIVE LUBRICANT SEAL RING THAT REMAINS AND PROTECTS THE BRASS BUSHINGS, BY RESISTING THE WATER-WASHOUT, AND ABRASIVE CONTAMINANTS
- ✓ ELIMINATION OF THE ENVIRONMENTAL IMPACT CAUSED BY THE BIG VOLUMES OF LUBRICANT WASTE COMMONLY GENERATED IN THE SUGAR INDUSTRY
- ✓ ELIMINATION OF ACCIDENTS OCCURRING BY SPILLS OF ASPHALTIC OILS
- ✓ SUGARPRESS | BR IS AN ESSENTIAL PRODUCT REQUIRED FOR ALL THOSE COMPANIES THAT GENERATE ORGANIC PRODUCTS







## **SUGARPRESS|BR**

- ✓ journal bearings & crown wheels

## **SUGARPRESS|OG**

MAXIPRENTACKY OG

- ✓ transmission open gear
- ✓ crown wheels by spray

## **OMNIGEAR ADVANCE**

- ✓ plastic deformation technology for gear boxes

## **TARMELA 305**

- ✓ grease for all extreme lubrication points

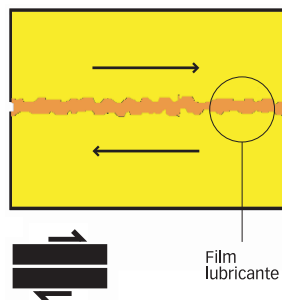
This information is intended as a guide and does not necessarily represent a marketing specification. Data may vary within modest ranges but do not adversely affect the lubricant quality. Modifications reserved

# SUGARPRESS|BR

## PREMIUM FLUID OF SYNTHETIC TECHNOLOGY FOR JOURNAL BEARINGS AND CROWN WHEELS

- \_ Consumption reduction
- \_ Immediate monetary savings
- \_ High protection against seizure and wear
- \_ Easy conversion to automatic lubrication equipment
- \_ Effective lubricant seal at the bushings
- \_ Elimination of the environmental impact
- \_ Elimination of accidents occurring by spills

**SUGARPRESS|BR** is a product line of Premium fluids made of a special blend of organic and synthesized hydrocarbons, resulting in "gel-type" compounds with tixotropic properties, which ensures a lubricating film with superior viscosity, capable to resist the highest load stresses in the large roller mill's thrust bearings of the extraction process.



The stability, thickness and adherence of the film form a ring that remains resisting the laundry for water and avoiding the polluting entrance as juice and bagasse.

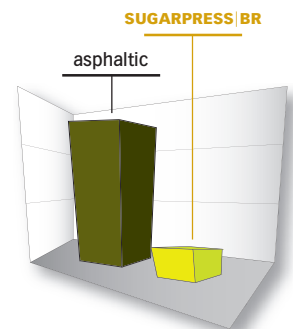
Its additive chemistry provides high protection by minimizing metal-to-metal contact and wear, and lower operating temperatures of the friction elements. **SUGARPRESS|BR** is of a light golden color, without solid contents and because of its lowest consumption rates, highest workspace cleanliness may be achieved, as never before.

In this way black oils with asphaltens and with carcinogenic effect, will be eliminated from this food processing industry.

Also higher reliability can be achieved with **SUGARPRESS|BR**, compared to the lubrication with metallic soap greases, because it doesn't block up pipes, which usually happens because of the oil-soap-solid lubricant separation when working under high hydraulic pressure generated by the pumps of centralized systems.



The quantity of **SUGARPRESS|BR** required to lubricate a triplet or mill, doesn't exceed an average of 3 liters a day, being also capable to lubricate the crown wheels, by means of an appropriate dripping system, with a daily consumption rate of 1/2 liter for a group of three pinions gears.



**SUGARPRESS|BR** has been formulated according to environmental protection engineering norms; it doesn't contain any heavy metals, chlorinated or any other type of solvents. It helps to keep track with safety norms and regulations because it doesn't contain diluents, and because of its very high inflammation point.

### FORMS OF APPLICATION AND USES

**SUGARPRESS|BR** can be safely pumped and sprayed through automatic lubrication systems, as on gear spray systems, eliminating the use of gravity feed lubrication systems.

**SUGARPRESS|BR** has been designed to lubricate:

- Journal bearings
- Transmission brasses
- Crown wheels
- Transmissions open gears
- Crystallizer transmission gears
- Rotating dryer gears



## ADVANTAGES OF SUGARPRESS | BR

- Consumption savings of up to 1:10 compared to asphaltic oils and of up to 50% compared to graphite type greases.
- Clean lubrication from the start
- High protection against seizure and wear, avoiding expensive repairs
- Easy conversion to automatic lubrication equipment [Fazzanaro, Farval, Lincoln, etc.] by adjusting the consumption levels to SUGARPRESS|BR best performance
- It provides an effective lubricant seal ring that remains and protects the brass bushings, by resisting the water-washout, and abrasive contaminants
- Elimination of the environmental impact caused by the big volumes of lubricant waste commonly generated in the sugar industry. It can save up to 90% of waste volume, compared to asphaltic oils.
- Elimination of accidents occurring by spills of asphaltic oils
- **SUGARPRESS|BR** is an essential product required for all those companies that generate organic products
- **SUGARPRESS|BR** is **biodegradable: 84.61% in 28 days under "Ready Biodegradability 301 B CO<sub>2</sub> Evolution Test adopted on 1992" (OECD, 1997), by Bioagri Laboratórios, Piracicaba, S.P., Brasil. [www.bioagri.com.br](http://www.bioagri.com.br); [bioagri@bioagri.com.br](mailto:bioagri@bioagri.com.br)**
- **SUGARPRESS|BR** is **non toxic: DL<sub>50</sub> over 5000 mg/k, under Oral Toxicity Test, method OECD 423 by Bioagri Laboratórios, Piracicaba, S.P., Brasil. [www.bioagri.com.br](http://www.bioagri.com.br); [bioagri@bioagri.com.br](mailto:bioagri@bioagri.com.br)**

## SELECTION GUIDE OF SUGARPRESS|BR

**SUGARPRESS | BR 400**      Transmission high speed brasses

**SUGARPRESS | BR 600**      Journal bearings and crown wheels

**SUGARPRESS | BR 1000**

## TECHNICAL SPECIFICATIONS / TYPICAL CHARACTERISTICS OF SUGARPRESS | BR

VISCOSITY ASTM D445, D2161:	SUGARPRESS BR		
	1000	600	400
@ 40° C, CST	20000	16000	8000
@ 100° C, CST	800	580	440
Colour	Amber	Amber	Amber
Specific Density ASTM D1298,@ 15,6°C	0,920	0,920	0,920
Flash Point ASTM D92, COC, °C	> 240	> 240	> 240
Evaporation loss 100°C	<2% weight	<2% weight	<2% weight
Copper corrosion ASTM D4048	1 A	1 A	1 A
Four Ball EP, ASTM D2596, Weld Point, kg.	> 800	> 800	> 800
FZG / by DIN 51354 method A/2.76/50	> 12	> 12	> 12
Service temperature, °C	-5 to 150	-5 to 150	-5 to 150

# SUGARPRESS | OG

## OPEN GEAR LUBRICANT FOR OPEN GEARS TRANSMISSIONS AND CROWN WHEELS

- \_ Effectively protects against wear, oxidation and corrosion.
- \_ Recommended for fast running and heavily loaded brasses.
- \_ It keeps equipment parts running at lower service temperatures.
- \_ Improves the splash lubrication of open and semi-enclosed gears
- \_ It has an extended service life for several harvests.
- \_ Excellent protection properties against "scuffing" and "pitting" wear damage.

SUGARPRESS | OG is an "extreme pressure" lubricant, of ultimate generation synthetic technology with a special additive chemistry designed to prevent wear, oxidation and corrosion. It does contain no solid additives.

It provides important benefits when replacing asphaltic type and conventional lubricating transmission oils.

Its modern formulation has been reached by combining the practical experience by working with cane sugar mills and their particular problems.

Our service commitment in the application follow up, in accordance with the plant maintenance management, allows additional adjustments, transmission engineering studies and improvements to be done for each case.

SUGARPRESS | OG provides full material compatibility with brasses and metal "Babbitt"; it provides an extreme protection against corrosion. It is also recommended for fast running and loaded bushings. It generates a tough, durable film on metal surfaces, with superior load capacity, while maintaining relatively low operation temperatures.

SUGARPRESS | OG allows to improve several aspects of splash type lubrication of open and semi-enclosed gears.

### REDUCTION OF ENVIRONMENTAL IMPACT

SUGARPRESS | OG has an extended service life for several harvests and it can be filtered without loss of additives.

It doesn't contain any heavy metals, chlorinated or any other type of solvents, it diluents, neither objectionable concentration of heavy metals.

### STOP OF WEAR DAMAGE ON GEAR TOOTH FLANK SURFACES

SUGARPRESS | OG provides the appropriate viscosity required; it exceeds AGMA recommendations for EP transmission oils. It exceeds antiscuffing and antipitting properties of conventional oils.

It shows excellent adhesiveness on tooth flanks without tooth root build ups.

### TECHNICAL SPECIFICATIONS / TYPICAL CHARACTERISTICS OF SUGARPRESS | OG

	SUGARPRESS   OG	
	5000	25000 *
Colour	Clear	Red
VISCOSITY ASTM D445, @ 40° C, CST	4600	25000
Specific Density ASTM D1298, @ 15,6°C	0,92	0,92
Flash Point ASTM D92, COC, °C	230	230
Pour Point D97-15 , °C	-15	-15
Copper corrosion ASTM D 130	1 B	1 B
Four Ball EP ASTM D2783, Weld Point, kg	> 600	> 600

\* SUGARPRESS | OG 25000 is recommended for lubrication of crown wheels by spray.

# MAXIPRENTACKY OG

## GREASE WITH SOLIDS FOR THE LUBRICATION OF OPEN GEARS

- \_ High performance grease
- \_ For most severe loaded industrial equipment
- \_ Designed for open gears draglines and slow running bushings

MAXIPRENTACKY OG is a "Heavy Duty Lubricant" for the lubrication of open gears. It contains very high viscosity base oil fortified with a special blend of antiwear and extreme pressure additives designed to protect and smooth gear surfaces under extreme conditions of high load, slow speed, and shock load. The wear protection package also comprises conventional solid lubricants additives. It is also highly resistant to the water, because of its corrosion and oxidation inhibitors additives.

MAXIPRENTACKY OG is a high performance product for very severe industrial applications.

MAXIPRENTACKY OG contains no solvents or diluters; it doesn't contain any additives with high environmental impact as barium, lead, or asphalt.

### APPLICATION

MAXIPRENTACKY OG can be applied automatically by brush or by intermittent spray lubrication systems on open gear sets, draglines, etc.

### USES

All type of applications with low speeds, high shock loads, high vibration levels and lubrication on surfaces with high distress and mixed friction. It is specially formulated for any open gear applications such as ball mills, rod mills, kilns, draglines, mining shovels, dryers, cranes, ways/slides, screws, etc. As equipments for mining, cement, steel mills, sugar mills, and in all type of industries in situations with extreme service conditions with hot

### TYPICAL PROPERTIES OF MAXIPRENTACKY OG

Colour	Grey-black
Texture	Soft Tacky
Thickener	Lithium-Calcium
Worked penetration, ASTM D-217, @25 °C	355 - 385
Grade NLGI	0
Density ASTM D1298, @15,6 ° C	0,962
Base Oil Viscosity ASTM D- 445, cSt @100°C	125-157
Flash point ASTM D92, COC, °C	> 265°
Drop Point ASTM D-2265, °C	162° min.
Pour Point, °C	-5°
Four Ball EP ASTM D- 2596 weld point, kg	> 800
Test Timken EP, Load OK, lbs ASTM - 2509	65
Mobility Test, LT - 37, @7.22 °C	17,54 grs./min.
Service Temp. Range, °C	0-200

# OMNIGEAR ADVANCE

## HIGH PERFORMANCE LUBRICANT WITH PLASTIC DEFORMATION TECHNOLOGY FOR ENCLOSED GEARS

- \_ Meet requirement FZG/Flender Micropitting Test / FVA54 / IV-Type I
- \_ Immediate detention of destructive pitting process
- \_ Friction coefficient lower than 0.03
- \_ Long service life, extending drainage intervals over 50.000 hours
- \_ Great protection against extreme wear and load
- \_ High corrosion protection.
- \_ High demulsifying ability (may be dried by vacuum or centrifugation)
- \_ Compatible with paintings and packing materials

OMNIGEAR ADVANCE is a high performance lubricant, with high thermal stability and oxidation resistance, developed for long life service in transmission gears and bearings with extreme loads and high temperatures.

OMNIGEAR ADVANCE are high refined hydro treated paraffin base oils formulated with unique additives, which provide a synergic action with an outstanding wear protection, and very high load capacity augmented by the smoothing action on the surface roughness by controlled plastic deformation.

The low frictional index also helps to keep lower the frictional generated temperature, protecting the metal surfaces.

This special formulation with last generation additives make OMNIGEAR ADVANCE highly compatible with different component materials, even bronze aluminum and packings.

Recommended for all gearboxes where EP additives are required and for all units operating under very high load, shock load, or rever-

sing action; for gears which has previously been wear damaged extending its drain intervals and greatly reducing sludge and wear particles.

### TYPICAL APPLICATIONS

Long life lubrication of gear boxes and bearings in circulation systems, with heavy duty service conditions with extreme temperatures, load and wear, in the paper industry, plastic, textil, cement, mining plants, steel mills, sugar mills; with all type of equipment as crushers, mills, mixers, shakers, and other heavy duty equipment.

OMNIGEAR ADVANCE features a unique repairing action and is the ultimate solution for equipment with identified damaged surfaces (fatigue, scuffing), which can be stopped.

It is recommended to flush the system, with addition of LAAPSA's DETREAGENT SYSTEM CLEANER, to remove carbonizations and sludge before using OMNIGEAR ADVANCE for the first time in equipments where previously mineral oil was used.

### TYPICAL CHARACTERISTICS OF OMNIGEAR ADVANCE

ISO VG Grade		100	150	220	320	460	680	
Base oil		Hydrotreated Mineral						
Density, @ 15°C	g/cm <sup>3</sup>	0,89	0,88	0,89	0,89	0,89	0,89	DIN 51757
Viscosity 40°C	cst	103	155	224	326	460	680	DIN 51562
	100°C	cst	11,90	15,12	18,1	24,7	30,4	
Viscosity index	VI <sub>F</sub>	100	100	100	100	100	100	DIN ISO 2909
Flash point	° C	222	224	230	232	235	240	DIN ISO 2592
Pour Point	° C	-30	-20	-20	-15	-13	-12	DIN ISO 3016
FZG   Grey Flecking Test		>12	>12	>12	>12	>12	>12	
SRV Test	friction coefficient	0,03	0,03	0,025	0,025	0,03	0,03	DIN 51834

# TARMELA 305

## SUPPORT ALL THE EXTREME LUBRICATION CONDITIONS IN A SUGAR MILL

- \_ *INSOLUBLE IN WATER AND JUICE: resists washing out of bearings, which means less frequent relubrication.*
- \_ *HIGH EXTREME PRESSURE RESISTANCE to protect against shock loads the tonga and defibrator bearings*
- \_ *SERVICE TEMPERATURE RANGE -15°C to 160°C: long term lubrication of boiler's fans bearings*
- \_ *PROTECTION AGAINST DIRT AND CONTAMINANTS: forms a protective barrier reducing wear and extending lubricant life.*
- \_ *MULTIPURPOSE: it is ideal for a wide range of operating environments and applications. Helps to reduce stocks.*

TARMELA 305 is an extreme pressure metallic complex grease with special additives and solid lubricant (MoS<sub>2</sub>) for a great variety of applications.

TARMELA 305 features excellent water resistance, wide operating temperature range, extreme pressure and anti-wear characteristics. It helps to replace a variety of greases, reducing inventories and lessening the chance of misapplication.

TARMELA 305 outperforms conventional and special greases for the lubrication of rolling bearings in high temperature applications and speed (Maximum Dn Factor=200.000).

TARMELA 305 is easily applied, both manually and by automatic systems, in virtually all-ambient temperatures.

### APPLICATIONS

TARMELA 305 extreme pressure grease is designed to lubricate bushings, rolling and anti-friction bearings where extra protection to vibratory high loads is required. It is also recommended for vehicle chassis points and U-joints as well a pivot points and bucket pins on earthmoving equipment. It will provide extended service intervals and reduced wear to draglines, shovels, excavators, trucks, conveyors and other plant applications.

### BENEFITS

- May be used in all kind of rolling bearings operating under high loads, extreme heat (as in fans and boiler's socket joints), and moisture (as water and juice).
- Resists severe water wash out and juice or chemical attack even with PH 4 to 9.
- Forms an effective seal, protecting against dust and other contaminants while keeping its consistency because of its high mechanical stability.
- High wear protection and high corrosion resistance.
- Service temperatures: From -15°C to 160°C.
- Helps to reduce grease stocks because of its multipurpose characteristics.

### TYPICAL PROPERTIES OF TARMELA 305

Color	Black
Thickener	Type Aluminum Complex
Oil base viscosity	360 CSt
NLGI	00-0-1-2-3
Dropping Point	280°C
Weld Point	500 Kg
Service temperature	- 15 a 160°C

# notes



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# notes



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