

**NZSM** 

  
Group  
of Companies  
"Titan"

# PRODUCT CATALOGUE

Lubricants  
for railway industry

**WE CREATE CONDITIONS FOR GROWTH**





## Group of Companies “Titan”

**It is the largest company in Siberia, one of the key investors of Omsk region. It was founded in 1989 by Mikhail Sutyaginsky.**

It includes about 20 enterprises of the petrochemical and agro-industrial complex, as well as infrastructure enterprises.

The main production site of the company is located on the territory of Omsk region; subsidiaries and affiliates are represented in the regions of Russia (Moscow, St. Petersburg, Novocherkassk, Pskov, Ufa etc) and the CIS countries. The number of employees of the Group’s enterprises is about 4000 people.

## Novocherkassk Lubricant Production Plant

**The production facilities** of Novocherkassk Lubricant Production Plant (NZSM LLC) are based on process units producing lubricants, oils and process fluids for different industries: oil and gas, mechanical engineering, metallurgy and metalworking, instrument making, automotive and railway transport industries, as well as for the defense complex. The enterprise facilities allow to produce more than 12 000 tons of lubricants and over 23 000 tons of process fluids per year.

The plant operates using **a unique technology** based on dry boiling-off due to which energy costs are significantly reduced and end product quality is maintained. The production process is practically waste-free due to the closed processing cycle.

**The product quality** is a determinant factor of the activity of NZSM LLC. The quality control of each production stage is conducted by the Quality Control Division of the production testing laboratory possessing all the necessary modern equipment.

The center of research works is represented by **an experimental industrial laboratory** which activity is aimed at creating new products and effective production technologies.

**The range of products** includes products based on petroleum and synthetic oils – engine, transmission, hydraulic oils; greases; lubricants; metalworking fluids; release fluids; friction modifiers and drilling fluid components. The products of NZSM LLC are certified and approved by VNIIZhT JSC (All-Russian Railway Research Institute), VNIINP JSC (All-Russian Research Institute of Oil Refining), RosNITI (Russian Research Institute of Pipe Industry) and Gazprom VNIIGAZ LLC (All-Russian Scientific Research Institute of Natural Gases and Gas Technologies).

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## GREASE FOR AXLEBOX BEARINGS

### Application

For use in friction units with roller bearings of locomotives, passenger and freight cars, railway multiple units, including those operated in high-speed traffic conditions up to 200 km/h.

### BUKSOL

<b>Thickener</b>	Lithium soap
<b>NLGI</b>	3
<b>Basic characteristics</b>	<ul style="list-style-type: none"> <li>• Ensures long service life of bearings and reducing costs for equipment maintenance and repair.</li> <li>• Ensures excellent protection of lubricated parts from corrosion in high humidity.</li> <li>• Possesses high resistance to thermal, structural and oxidative degradation during operation.</li> <li>• It has high anti-wear, anti-corrosion and extreme pressure properties.</li> </ul>
<b>Dropping point, °C, min</b>	180
<b>Worked penetration at +25 °C, 0,1 mm</b>	230–290
<b>Colloidal stability, % of separated oil, max</b>	18
<b>Shear strength at +50 °C, Pa, within the limits</b>	400–700
<b>Evaporation at +100 °C, 1 hour, %, max</b>	1.5
<b>Critical load, N (kgf), min</b>	784
<b>Wear index, mm, max</b>	0.5
<b>Conformity to regulatory documents</b>	Technical specifications TU 0254-107-01124328-01

### Package

Drum 180 kg  
Bucket 18 kg



## GREASE FOR AXLEBOX BEARINGS

### Application

For use in roller bearings of railway cars as well as in bearings of electric machines at temperature from –60 °C to +100 °C.

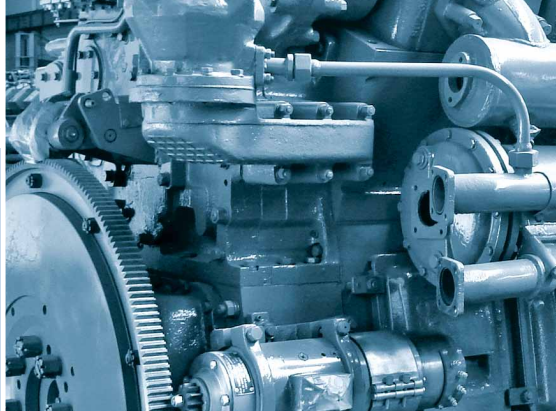
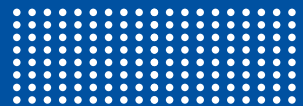
### LZ-TsNII(U)

<b>Thickener</b>	Sodium-calcium soap
<b>NLGI</b>	3
<b>Basic characteristics</b>	<ul style="list-style-type: none"> <li>• Possesses good ant-wear and extreme pressure properties</li> <li>• Has a wide operating temperature range.</li> </ul>
<b>Dropping point, °C, min</b>	130
<b>Worked penetration at +25 °C, 0,1 mm</b>	200–260
<b>Shear strength at +50 °C, Pa, within the limits</b>	200–600
<b>Evaporation at +100 °C, 1 hour, %, max</b>	9
<b>Critical load, N (kgf), min</b>	921 (94)
<b>Wear index, mm, max</b>	0.55
<b>Conformity to regulatory documents</b>	Technical specifications TU 0254-013-148820-99

### Package

Drum 180 kg  
Bucket 18 kg





## GREASES FOR REDUCTION GEARS OF LOCOMOTIVE TRACTION MOTORS

### Application

They are used in traction gearboxes of wheel-motor blocks of locomotives and railway multiple units.

	Reduction gearbox grease OS-L	Reduction gearbox grease OS-Z
<b>Thickener</b>	Sodium soap	Sodium soap
<b>NLGI</b>	—	—
<b>Basic characteristics</b>	Semifluid grease used in heavily loaded gear drives of locomotive traction motor reduction gearboxes. They are used for the lubrication of gear drives of locomotive traction motor reduction gearboxes, reduction gearboxes of agricultural machinery, equipment of metallurgical and mining enterprises. The grease OS-L is designed for operation in summer, the grease OS-Z is used in winter. <ul style="list-style-type: none"> <li>• Good anti-wear properties.</li> <li>• Good corrosion protection.</li> <li>• Excellent adhesion.</li> </ul>	
<b>Penetration at a temperature of +25 °C, with stirring, 0.1 mm</b>	—	—
<b>Effective viscosity at -30 °C, Pa·s</b>	—	—
<b>Apparent viscosity, conventional degrees at 100 °C</b>	7-15	2-7
<b>Weld point, N</b>	1842	1842
<b>Critical load, N, min</b>	657	657
<b>Load wear index, N, min</b>	343	343
<b>Wear scar diameter, mm, max</b>	0.7	0.7
<b>Corrosion attack on metals</b>	Withstands	Withstands
<b>Conformity to regulatory documentation</b>	Company's Standard STO 17321872-006-2017	

### Package

Drum 180 kr  
 Bucket 18 kg  
 Filling

## GREASES FOR REDUCTION GEARS OF LOCOMOTIVE TRACTION MOTORS

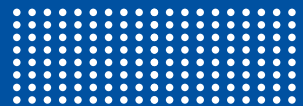
### Application

They are used in traction gearboxes of wheel-motor blocks of locomotives and railway multiple units. A unique research and development product of the NZSM LLC.

	Reduction gearbox grease OS-V
<b>Thickener</b>	Lithium soap
<b>NLGI</b>	00
<b>Basic characteristic</b>	All-season grease for gear drives of locomotive traction gearboxes, reduction gearboxes of agricultural machinery, equipment of metallurgical and mining enterprises. <ul style="list-style-type: none"> <li>• Reduces consumption by 2 times due to the elimination of grease leaks through casing leaks.</li> <li>• Excludes seasonal change.</li> <li>• Increases operational reliability of a reduction gearbox due to innovative additives.</li> <li>• Improves environmental situation on railways due to the elimination of grease leaks.</li> </ul>
<b>Penetration at a temperature of +25 °C, with stirring, 0.1 mm</b>	320-400
<b>Effective viscosity at -30 °C, Pa·s</b>	1000
<b>Apparent viscosity, conventional degrees at 100 °C</b>	—
<b>Weld point, N</b>	3479
<b>Critical load, N, min</b>	1098
<b>Load wear index, N, min</b>	500
<b>Wear scar diameter, mm, max</b>	0.7
<b>Corrosion attack on metals</b>	Withstands
<b>Conformity to regulatory documentation</b>	Company's Standard STO 17321872-006-2017

### Package

Drum 180 kr  
 Bucket 18 kg  
 Filling



## WHEEL AND RAIL CONTACT GREASES

### Application

The greases are used for the wear reduction of wheel and rail systems of railway vehicles and hoisting mechanisms.

	NOVA KR-000	NOVA KR-00
<b>Thickener</b>	Lithium soap	
<b>NLGI</b>	000	00
<b>Basic characteristics</b>	Semifluid special water-resistant railway grease designed for the protection of wheel pair flanges and rail from wear. The grease is applied on wheel flanges and side face of rails using on-board, track lubricators, as well as mobile rail lubricators. Operating temperature range is from -50 to +100 °C	
<b>Dropping temperature, °C, minimum</b>	—	—
<b>Penetration at +25 °C with stirring (60 double strokes), 0.1 mm, within the limits</b>	445–480	390–440
<b>Mass fraction of water, %</b>	Traces	
<b>Corrosion attack on metals</b>	Withstands	
<b>Effective viscosity, at -40 °C and at average deformation rate gradient 10 s<sup>-1</sup>, Pa·s, max</b>	800	900
<b>Tribological characteristics on a four ball friction machine at (20 ± 5) °C:</b>		
• weld point (Pw), N, min	3087	3087
• critical load (Pc), N, min	980	980
<b>Conformity to regulatory documentation</b>	Company's Standard STO 17321872-010-2017	

### Package

Drum 180 kg  
Bucket 18 kg

## WHEEL AND RAIL CONTACT GREASES

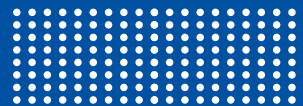
### Application

The greases are used for the wear reduction of wheel and rail systems of railway vehicles and hoisting mechanisms.

	NOVA KR-0	NOVA KR-1
<b>Thickener</b>	Lithium soap	
<b>NLGI</b>	0	1
<b>Basic characteristics</b>	Semifluid special water-resistant railway grease designed for the protection of wheel pair flanges and rails from wear. The grease is applied on wheel flanges and side face of rails using on-board, track lubricators, as well as mobile rail lubricators. Operating temperature range is from -50 to +100 °C	It is used in cylindrical and planetary reduction gearboxes and motor reduction units operating with maximum specific engagement loads of up to 2000 MPa, requiring the application of high-quality reduction gearbox lubricants with a long service life. Operating temperature range is from -35 to +120 °C
<b>Dropping temperature, °C, minimum</b>	—	120
<b>Penetration at +25 °C with stirring (60 double strokes), 0.1 mm, within the limits</b>	345–385	300–340
<b>Mass fraction of water, %</b>	Traces	
<b>Corrosion attack on metals</b>	Withstands	
<b>Effective viscosity, at -40 °C and at average deformation rate gradient 10 s<sup>-1</sup>, Pa·s, max</b>	1200	1500
<b>Tribological characteristics on a four-ball friction machine at (20 ± 5) °C:</b>		
• weld point (Pw), N, min	3087	3087
• critical load (Pc), N, min	980	980
<b>Conformity to regulatory documentation</b>	Company's Standard STO 17321872-010-2017	

### Package

Drum 180 kg  
Bucket 18 kg



## LOCOLIT GREASE FOR ROLLER BEARINGS

### Application

It has been developed for roller and ball bearings of axleboxes, cassette bearings, axial-bearing suspension of traction electric motors and traction gearboxes of freight and passenger locomotives, railway multiple units and axleboxes of freight and passenger cars, roller and ball anchor bearings of traction electric motors of freight and passenger locomotives and railway multiple units.

It replaces the lubricants BUKSOL, LZ-TsNII (U), LZ-TsNII, ZhRO, ZhRO-M, ZUM and others, surpassing them in characteristics. It possesses a long life period and allows to reach the rolling stock mileage equal to 1 200 000 km or 10 years (for rolling stock, which repair frequency is fixed in years).

### Locolit grease for roller bearings

<b>Designation according to DIN 51502</b>	KP1,5P-50
<b>Colour</b>	Light brown
<b>Operating temperature range, °C</b>	-50...+150
<b>NLGI grade</b>	1.5
<b>Penetration of mixed grease (60 double strokes), mm/10</b>	285-305
<b>Kinematic viscosity of the base oil at +40 °C, mm<sup>2</sup>/s</b>	180
<b>Kinematic viscosity of the base oil at +100 °C, mm<sup>2</sup>/s</b>	15
<b>Dropping temperature, °C</b>	270
<b>Critical load, N</b>	980
<b>Weld point (tests at a four ball wear test system) at +25 °C, N</b>	2800
<b>Wear index (test at a four ball wear test system), mm</b>	< 0.5
<b>Corrosion degree (roller bearings, distilled water)</b>	0-0
<b>Oxidation resistance, pounds/inch</b>	
• after 100 hours	10
• after 500 hours	20
<b>Flow pressure at -40 °C, Pa·s</b>	max 1440

### Package

Drum 180 kg  
Bucket 18 kg

## ULTRASONIC TESTING COUPLANT NKZh

### Application

It is designed for providing acoustic contact during ultrasonic non-destructive testing of rails, railroad switches and welded joints by removable flaw detection tools at negative air temperature.

It provides an excellent acoustic contact and possesses an extremely low pour point (-60 °C). Completely replaces ethyl alcohol.

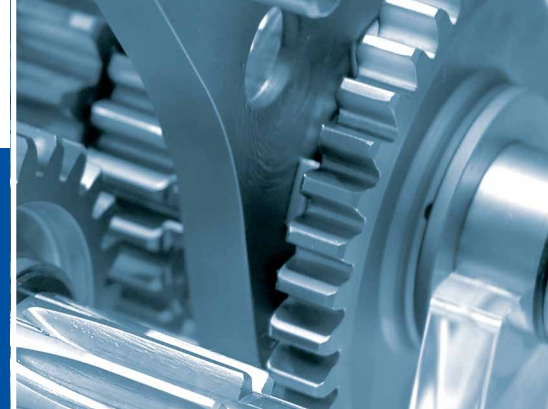
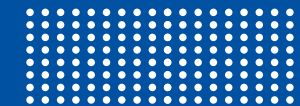
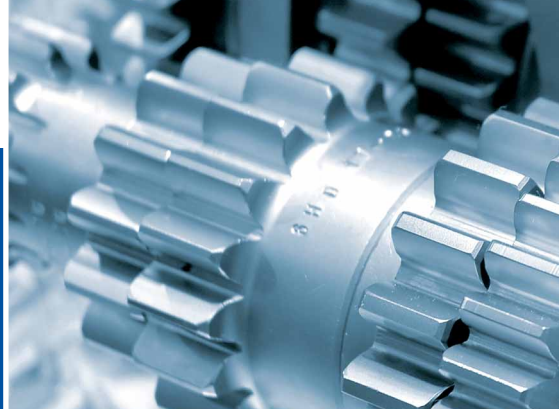
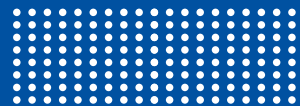
### Ultrasonic testing couplant NKZh

<b>Crystallization onset temperature, °C, max</b>	-60
<b>Closed cup flash point, °C</b>	45
<b>Ignition point, °C</b>	23
<b>Self-ignition point, °C</b>	458
<b>Density at a temperature of +20 °C, kg/m<sup>3</sup>, max</b>	780
<b>Coefficient of sliding friction on rails after applying the ultrasonic testing couplant</b>	0.18
<b>Difference between conventional sensitivity values as per SO-3R calibration block, determined while applying the ultrasonic testing couplant and ethyl alcohol at an atmospheric temperature -15 °C max, dB</b>	2
<b>Corrosion resistance of metals and alloys to the ultrasonic testing couplant exposure (steel - 10, brass - L63, aluminum alloy - AMg5)</b>	Withstands

### Package

Can 10 l





## GENERAL PURPOSE GREASES

### Application

Anti-friction universal greases designed for the lubrication of industrial units and construction equipment, as well as automotive vehicles operating at medium and high loads.

	Solidol Zh	Graphite grease Zh
<b>Thickener</b>	Hydrated calcium soap	Hydrated calcium soap
<b>Basic characteristics</b>	For lubrication of rolling and sliding friction units of machines and mechanisms operating at temperatures from -25 °C to +65 °C. In loaded mechanisms (bearings, hinges, blocks etc.) it is operable at temperatures up to -50 °C. It is used for filling disassembled friction units operating at temperatures from -50 °C to +65 °C, and for filling friction units by means of manual grease guns at temperatures up to -20 °C.	For lubrication of coarse heavily loaded mechanisms (open gears, threaded connections, spindles, springs etc.). It is operable within the temperature range from -20 °C to +60 °C. The grease may be used at temperatures below -20 °C in shock absorbers.
<b>Penetration of stirred grease (60 double strokes), 0.1 mm</b>	230-290	≥250
<b>Dropping temperature, °C, min</b>	78	76
<b>Viscosity at 0 °C and medium deformation rate gradient 10 s<sup>-1</sup>, Pa·s, max</b>	250	250
<b>Shear strength at a temperature of +50 °C, Pa, min</b>	196	100
<b>Corrosion attack on metals</b>	Withstands	Withstands
<b>Mass fraction of water, %, max</b>	2.5	3
<b>Content of mechanical impurities</b>	Not available	—

### Package

Bucket 18 kg

## MULTIPURPOSE GREASES

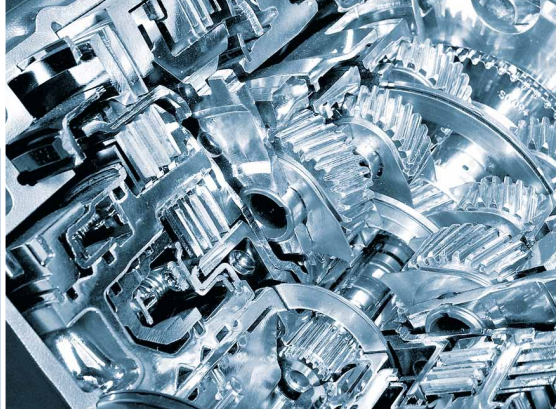
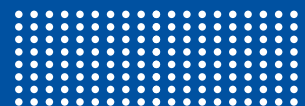
### Application

LITHOL-24 is an anti-friction multipurpose grease. CIATIM-221 is a high-temperature lubricant for friction units and contacting metal and rubber surfaces.

	LITHOL-24	CIATIM-221
<b>Thickener</b>	Lithium soap	Complex calcium soap
<b>Basic characteristics</b>	For application in roller and slide bearings, hinges, gear and other drives, friction surfaces of wheeled and tracked vehicles, industrial mechanisms, electric machines etc., operating at temperatures from -40 °C to +120 °C.	For lubrication of friction units and mating "metal-metal" and "metal-rubber" surfaces operating at temperatures from -60 °C to +150 °C (roller bearings of electric machines, control systems and devices with rotation frequency up to 10 000 min <sup>-1</sup> etc).
<b>Penetration of stirred grease (60 double strokes), 0.1 mm</b>	220-250	280-360
<b>Dropping temperature, °C, min</b>	185	200
<b>Viscosity at 0 °C and medium deformation rate gradient 10 s<sup>-1</sup>, Pa·s, max</b> • at a temperature of 0 °C • at a temperature of +50 °C	250 —	— 800
<b>Shear strength, Pa, min</b> • at a temperature of +80 °C, • at a temperature of +50 °C	200 —	— 120
<b>Colloidal stability, % of separated oil, max</b>	12	7
<b>Tribological characteristics at a temperature (20±5) °C:</b> • weld point, N, min • critical load, N, min • load wear index, N, min	1410 630 280	—
<b>Corrosion attack on metals</b>	Withstands (copper)	Withstands
<b>Mass fraction of water, %, max</b>	Not available	Not available
<b>Content of mechanical impurities</b>	0.05	Not available

### Package

Bucket 18 kg



## ENGINE OILS

Product name	Viscosity at 100 °C, mm <sup>2</sup> /s	Viscosity index	Sulfated ash, % wt	Flash point, °C	Pour point, °C
<b>M-8G<sub>2</sub>K</b>	7.5–8.5	95	1.15	210	–30
<b>M-10G<sub>2</sub>K</b>	10.5–11.5	95	1.15	205	–18
<b>M-10G<sub>2</sub>TsS</b>	10–11	92	1.50	210	–10
<b>M-10DM</b>	min 11.4	90	1.50	220	–18
<b>M-14V<sub>2</sub></b>	13.5–14.5	85	1.20	210	–12
<b>M-14G<sub>2</sub>TsS</b>	13.5–15	92	1.50	210	–10

## TRANSMISSION OILS

Product name	Viscosity at 100 °C, mm <sup>2</sup> /s	Viscosity index	Sulfated ash, % wt	Flash point, °C	Pour point, °C
<b>MGE-46V</b>	≥6	90	—	190	–32
<b>AMG-10</b>	10 (50 °C)	—	—	93	–70
<b>TAP-15V</b>	14–16	—	—	185	–20

## HYDRAULIC OILS

Product name	Type	Density, g/ml	Viscosity, cSt at 40 °C	Flash point, °C	Pour point, °C
<b>TITAN HFDU</b>	Fire resistant hydraulic fluid	0.92	32–68	310	–30
<b>TITAN HFC</b>	Fire resistant hydraulic fluid	1.072	32–68	—	–50
<b>TITAN HM</b> <b>TITAN HLP</b> <b>TITAN HZF</b> <b>TITAN HLPD</b>	Hydraulic oil	0.88	32–68	245	–30

### Package

Drum 180 kg  
Bucket 18 kg





**NZSM** 



**Novocherkassk Lubricant  
Production Plant**

**SALES IN RUSSIA AND ABROAD**

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