



# Formulating future additives

Lube oil additives



# Accelerate performance

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# We build the additives of your future

BRB International is an independent global producer of Lube oil Additives & Chemicals. For over 35 years we have been active in the automotive, industrial and offshore industry, for which we deliver innovative and tailor-made solutions.

BRB has more than 11 locations worldwide from which we supply our markets and meet our customers' needs. BRB's strength lies in the commitment of its employees, putting the customer first and being flexible in both service and product solutions. Our focus on R&D, technical support, customized products and problem solving mentality gives us a unique position in the market.

## R&D

**Ambition, Flexibility, Passion and Innovation** are our core values and we thrive on challenging goals that are achieved through a collaborative approach to development.

Robust processes from concept through to technological implementation in combination with reliable and timely technical support are instrumental to the trustworthy relationships we have built with our customers and suppliers. We believe that the holy grail of product development is thinking outside of the proverbial box. Several aspects are key to succeed: going back to basics and fundamental concepts, combined with understanding how hardware works and how chemistries can improve performance and prevent failure in order to manipulate the phenomenon from within. This is not limited to additive packages, but can be applied to product development in general: if one knows how something works, one can influence and optimize.





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# Additives

BRB International manufactures a full range of lube oil additive packages and components to formulate finished lubricants and fluids. Additive packages impart new and enhance existing properties that influence the performance of base oils.

## Viscosity modifiers

Viscosity modifiers are used in multi-grade engine oils, gear oils, automatic transmission fluids, greases and various hydraulic fluids. Our viscosity modifiers are marketed under the name **Viscotech**<sup>®</sup> and are available in a wide range of solid and liquid forms with either styrenic polymers or Olefin Copolymers (OCP). Manufacturing takes place in specialized facilities in Germany and Singapore. The facility in Germany is one of the largest viscosity modifier production plants in Europe. With the **Viscotech**<sup>®</sup> product line BRB International offers a wide range of Shear Stability Index (SSI) to cater the needs of many performance requirements.

[More details on page 6.](#)

## Engine oil additives

Our portfolio of **Petrolad**<sup>®</sup> engine oil additives meets different requirements for diesel and gasoline applications. We formulate and manufacture engine oil additives covering the high tier market as well as the lower tier market. With our **Petrolad**<sup>®</sup> engine oil additives we aim to provide packages at economical treat rates.

[More details on page 7.](#)

## Driveline additives

BRB International offers additive packages for gear oils and automatic transmission fluids for use in both automotive and industrial applications. We also offer gear oil additive packages

with extreme pressure properties for industrial applications.

[More details on page 8.](#)

## Off-road

BRB International offers Universal Tractor Transmission Oils (UTTO) and Super Tractor Oil Universal (STOU) packages which can be used in a wide range of lubricants for agricultural equipments.

[More details on page 9.](#)

## Hydraulic additives

Additive packages to formulate hydraulic oils are part of the **Petrolad**<sup>®</sup> series and can be used for a wide range of applications, such as: R&O oils, hydraulic fluids, turbine oils, compressor oils and greases.

[More details on page 10.](#)

## More...

BRB International provides other additives such as sulfonates, fuel additives and components to meet your market needs. We also offer a full range of chemicals and greases which complete our assortment.

[More details on page 11.](#)

For more information on our entire portfolio, contact your BRB representative and order your sample today.





# Enhance protection



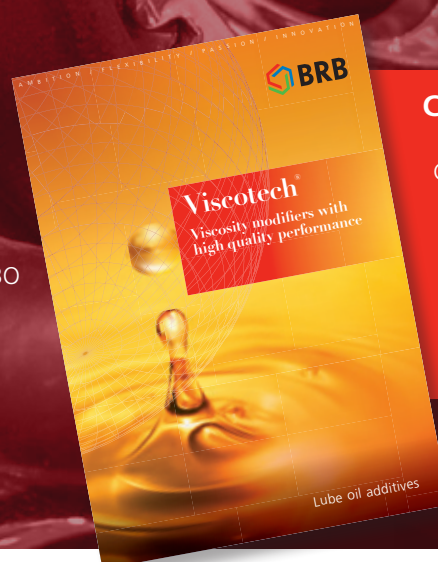
# Viscosity modifiers

Polymer type	Viscotech®	Base oil group	Kinematic Viscosity @ 100°C, ASTM D445	SSI, ASTM D6278
<b>OCP TYPES</b>				
<b>Solid</b>	6540	-	-	22
	6640	-	-	25
	6545	-	-	35
	6550	-	-	52
	073	-	-	70
<b>Liquid</b>	6540 L	II	1.000, 1.300	22
	6540 LP*	II	1.000, 1.300	22
<b>STYRENIC TYPES</b>				
<b>Solid</b>	483	-	-	10
	533	-	-	3
	593	-	-	8
<b>Liquid</b>	483 L	II	1.200	10
	494 L	III	9,0**	7
	494 LD	III	8,5**	7
	533 L	II	1.600	3
	535 L	III	1.200	3
	536 L	IV	1.300	3
	593 L	II	1.300	8
	595 L	III	1.200	8

BRB International can produce in a wide range of viscosities. Should you require another viscosity as displayed above, please contact us for the possibilities.

\* Includes PPD

\*\* At 10% dilution in a GR11 BO



## Contact us!

Contact us for our brochure with more information about our Viscotech® portfolio.

# Engine oil additives

Petrolad®	Description	Benefits	Specification	Treat rate* (% wt.)	Viscosity@ 100°C, (cSt) ASTM D445	Flash point (°C) ASTM D92	Flash point (°C) ASTM D93	TBN (mg KOH/g) ASTM D2896
<b>HEAVY DUTY DIESEL OILS (HDDO)</b>								
<b>8770</b>	An automotive engine gasoline additive designed to meet the specifications of API CB/SB to CC/CF.	Suitable for use in a wide variety of base stocks. It shows very good dispersancy which is required in diesel engines operating under harsh conditions.	CB/SB	2.0	14	150	-	145
			CC/SC	2.0				
			CC/SD	4.0				
			CC/SE	4.0				
			CC/SF	4.0				
			CD	4.4				
<b>PASSENGER CAR MOTOR OILS (PCMO)</b>								
<b>9200 E</b>	A multipurpose engine oil additive developed for formulating cost effective passenger car motor oils and heavy duty diesel oils.	It offers good wear protection and deposit control as well as good oxidation and rust protection in both gasoline and diesel engine.	JASO T903:2016 MA2		34	-	>150	139
			SL/CF	6.0				
			SJ/CF-4	5.8				
			SG/CF-4	5.5				
			SF/CF	3.2				
			SF/CD	3.2				
			SE/CC	2.8				
			SC/CC	2.0				
SB/CB	1.7							
<b>8771 SC</b>	An additive designed to meet the specifications of API SB/CB, CF.	An economical package which will result in 10 BN in finished oil.	SG/CF	5.1	45	>170	-	225
			SF/CD					
			SF/CC					
			SB/CB	1.4				

Typical properties should not be used as quality control parameter to accept or reject the product.

\* These products meet more specifications. Contact your BRB representative for more information.



# Driveline additives

Petrolad®	Description	Benefits	Automotive specification	Treat rate* (% wt.)	Industrial specifications	Treat rate* (% wt.)	Viscosity @ 40°C, (cSt) ASTM D445	Flash point (°C) ASTM D93	Sulphur range (% wt.)
<b>GEAR OIL</b>									
336	A unique additive package designed for the production of automotive and industrial gear oils.	Very low micro pitting. Unique sulphurous/phosphorous technology resulting in low odor gear oils with excellent EP properties. Soluble in various base oils.	GL-5 GL-4	2.0-6.5	AIST 224 DIN 51517, Part 3 AGMA 9005-E02 ISO 12925-1 CKC	1.8-2.0	33-51	>150	17-18
336 EP	It is the extreme pressure version of Petrolad® 336 and performs extremely well in formulas where extra resistance to extreme pressure is required.	Very good extreme pressure performance. Very low micro pitting. Unique sulphurous/phosphorous technology resulting in low odor gear oils with excellent EP properties. Soluble in various base oils.	GL-5 GL-4	2.0-6.5	AIST 224 DIN 51517, Part 3 AGMA 9005-E02 ISO 12925-1 CKC	1.8-2.0	33-51	>150	19-20
339	A premium, low odor automotive and industrial gear oil additive package.	Low scoring performance. Competitive treat rate for high extreme pressure performance. Outstanding corrosion inhibition. Excellent weld load.	GL-4 MIL-L-2105 ZF TE-ML 02A ZF TE-ML 08 ZF TE-ML 17A GL-5 MIL-L-2105D ZF TE-ML 00	2.0-4.0	DIN 51517, Part 3 AGMA 9005-E02 AIST 224	1.8	54	>100	26

Petrolad®	Description	Benefits	Specification	Treat rate* (% wt.)	Viscosity @ 100°C, (cSt) ASTM D445	Flash point (°C) ASTM D92
<b>AUTOMATIC TRANSMISSION FLUIDS (ATF)</b>						
743 EU	A multi-purpose low ash additive package which enables the formulation of automatic transmission fluids (ATF) that meet the requirements of automotive transmissions and power steering fluids.	Excellent seal compatibility, oxidation control, anti-wear and friction performance. Outstanding low temperature properties. Meets a variety of specifications at different treat rates. Compatible with different mineral base oils.	Dexron III H Dexron III G Dexron III F Ford MERCON Caterpillar TO-2 Dexron II D	10.0 7.3	215 215	>100 >100



# Off-road

Petrolad®						
Description	Benefits	Specification	Treat rate* (% wt.)	Viscosity @ 40°C, (cSt) ASTM D445	TBN (mg KOH/g) ASTM D2896	
<b>UNIVERSAL TRACTOR TRANSMISSION OIL (UTTO)</b>						
5101	Designed to formulate Universal Tractor Transmission Oils (UTTO).	Excellent frictional characteristics. Superb gear protection. Outstanding oxidation performance. The product is suitable for a wide range of OEM specifications.	John Deere J20C/D	6.0	110	150
			J.I. Case MS 1205/1206/1207/1209/1210			
			Massey Ferguson CMS M1135/41/43/45			
			Ford M2C 86B/C, 134D			
			Case New Holland MAT 3505, 3525/3526			

Petrolad®						
Description	Benefits	Specification	Treat rate* (% wt.)	Viscosity @ 40°C, (cSt) ASTM D445	TBN (mg KOH/g) ASTM D2896	
<b>SUPER TRACTOR OIL UNIVERSAL (STOU)</b>						
5201	Designed to formulate Super Tractor Oil Universal (STOU).	Outstanding friction control. Extends equipment life and improves performance. Excellent gear protection. Suitable for a wide range of OEM specifications.	John Deere J27	10.0	362	117
			Massey Ferguson CMS M1139/44/45			
			Allison C4			
			API GL-4			
			Ford M2C1598B			
			ZF TE ML 06A, 06B, 06D, 07B			
			Caterpillar TO-2			
			API CE, CF, CF-4, CG-4, SF			
			MB 227.1/228.1/228.3			
			MAN 271			
			MIL-L-2104D			

Typical properties should not be used as quality control parameter to accept or reject the product.

\* These products meet more specifications. Contact your BRB representative for more information.

# Hydraulic additives

Petrolad®	Description	Benefits	Specification	Treat rate* (% wt.)	Viscosity @ 40°C, (cSt) ASTM D445	Flash point (°C) ASTM D92
<b>HYDRAULIC ADDITIVES</b>						
<b>1846</b>	Especially designed to formulate ashless hydraulic fluids and compressor fluids based on mineral oils as well PAO/ester based oils.	Outstanding corrosion protection. Excellent filterability. Excellent demulsification property. Very high oxidation stability. Retention of performance that extends fluid and equipment life.	Denison HF0 DIN 51524, Part 2 and 3 (HLP, HVLP) GE GEK 32568 A/C Cincinnati Afnor NF E 48-603	0.3-0.6	126	>120

# Sulfonates

Petrolad®	Description	Benefits	Viscosity @ 100°C, (cSt) ASTM D445	Flash point (°C) ASTM D92	TBN (mg KOH/g) ASTM D2896
<b>SULFONATES</b>					
<b>6779</b>	A 400 total base number (TBN) overbased calcium sulfonate detergency and rust-inhibitor.	Compatible with a wide range of mineral base oils, white oils, and synthetic base oils. Excellent TBN retention in extended oil drain intervals. Excellent detergency which gives superior engine cleanliness.	60-100	>180	395-410

Typical properties should not be used as quality control parameter to accept or reject the product.

\* These products meet more specifications. Contact your BRB representative for more information.



# Summary

## VISCOSITY MODIFIERS

Olefin Copolymer (OCP) types	Solid	Viscotech® 6540	
		Viscotech® 6640	
		Viscotech® 6545	
		Viscotech® 6550	
		Viscotech® 073	
	Liquid	Viscotech® 6540 L	
		Viscotech® 6540 LP	
		Styrenic types	
		Solid	Viscotech® 483
			Viscotech® 533
Viscotech® 593			
Liquid	Viscotech® 483 L		
	Viscotech® 494 L		
	Viscotech® 494 LD		
	Viscotech® 533 L		
	Viscotech® 535 L		
	Viscotech® 536 L		
	Viscotech® 593 L		
Viscotech® 595 L			

## ENGINE OIL PACKAGES

Heavy Duty Diesel Oils (HDDO)	Petrolad® 8770
Passenger Car Motor Oils (PCMO)	Petrolad® 9200 E
	Petrolad® 8771 SC

## DRIVELINE ADDITIVES

Gear Oil	Petrolad® 336
	Petrolad® 336 EP
	Petrolad® 339
Automatic Transmission Fluids (ATF)	Petrolad® 743 EU

## OFF-ROAD

Universal Tractor Transmission Oil (UTTO)	Petrolad® 5101
Super Tractor Oil Universal (STOU)	Petrolad® 5201

## HYDRAULIC ADDITIVES

Ashless	Petrolad® 1846
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## SULFONATES

Overbased Calcium Sulfonate Detergent	Petrolad® 6779
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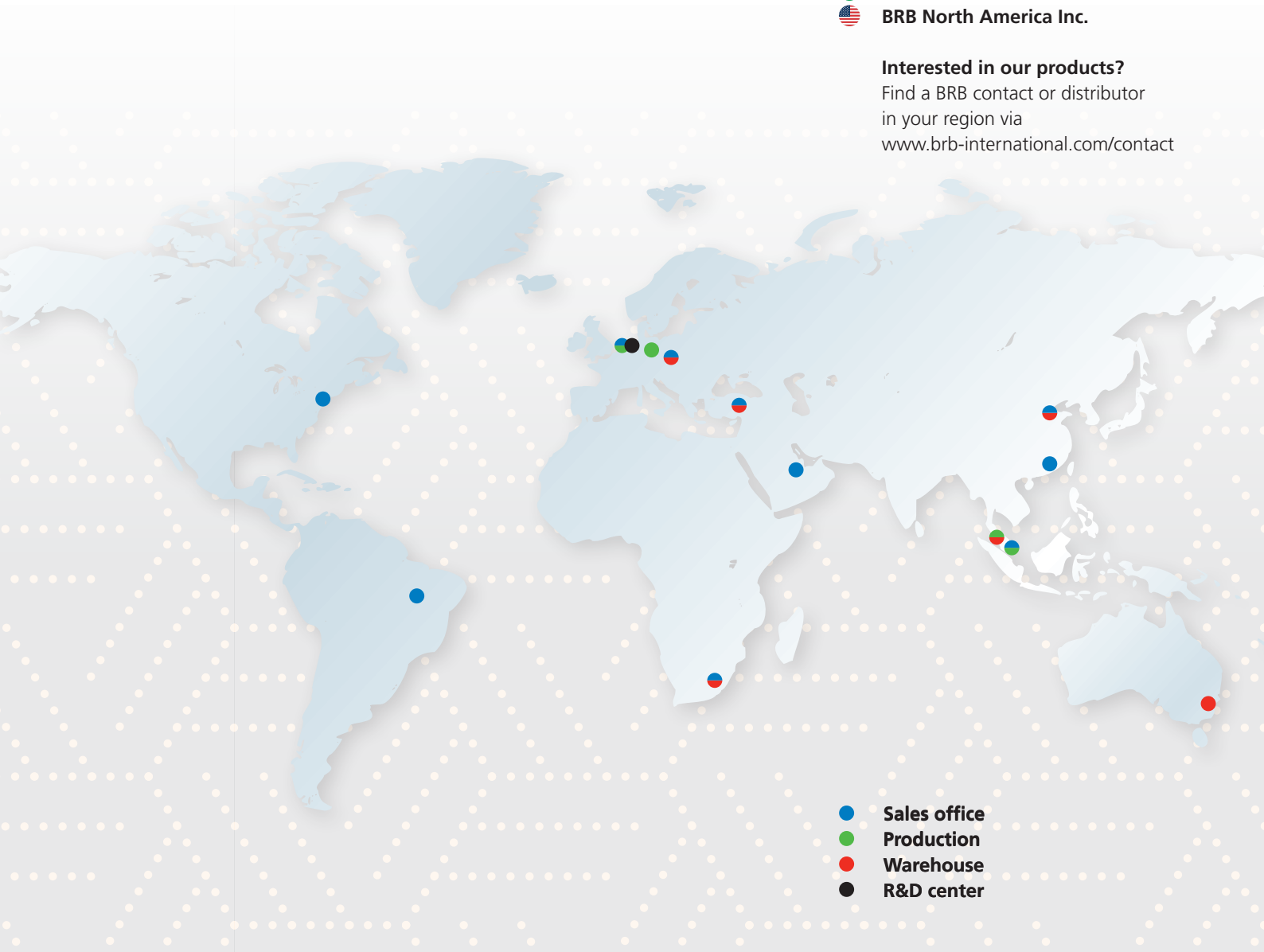
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