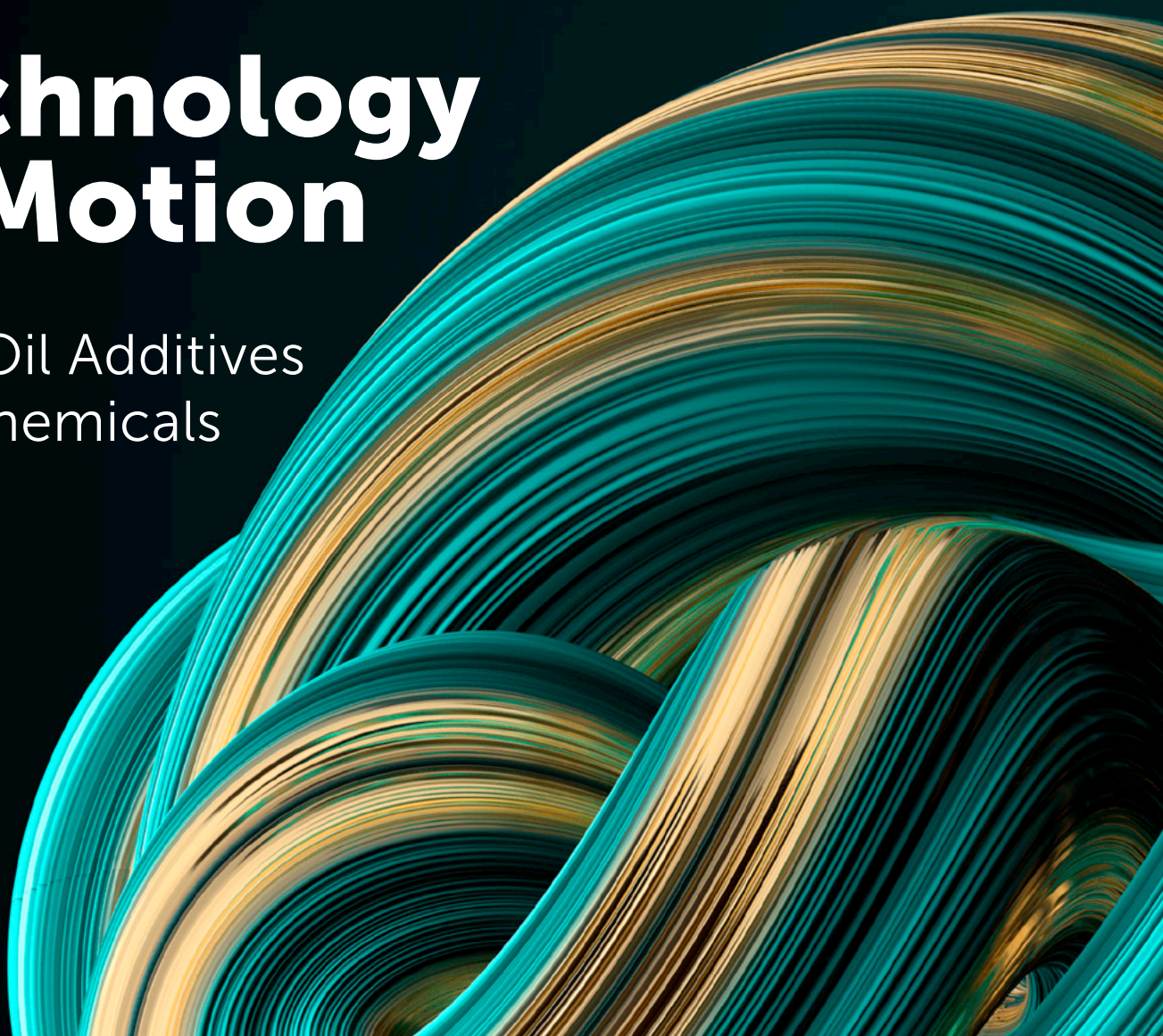




A Subsidiary of PETRONAS Chemicals Group

# Technology in Motion

Lube Oil Additives  
and Chemicals



# Foreword



At BRB International, we follow an innovation strategy focused not only on addressing the challenges our customers face, but also on anticipating the future needs and wishes of the companies and industries we serve. This fast-forward approach to the manufacture of future-oriented lube oil additives, silicones and other specialty chemicals has enabled us to grow from a small business in 1981 to an international corporation with over 380 employees at 13 locations. BRB is now one of the world's largest independent manufacturers and suppliers of lube oil additives such as viscosity modifiers, driveline and engine oil additives. Today, as a subsidiary of the PETRONAS Chemicals Group Berhad, we are equipped with even greater global presence and innovation resources. At the same time, we contribute specialty chemicals expertise and experience to the group.

A further strength we bring to the table within PETRONAS is our specific target-group focus: in contrast to many internationally operating companies, BRB has traditionally concentrated on small-to-medium-sized enterprises (SMEs) and not just global players. That means mid-sized companies get full attention and service from a partner with the global footprint and resources to serve major multinationals. It adds up to a fast-forward in terms of value and diversification in support of the PETRONAS target-group strategy.

Since the beginning, we have consistently built solid, long-term relationships with our partners and customers in sectors like automotive, industry and energy, supporting our customers in staying at the forefront of innovation and ahead of their competitors. Our solutions are all about motion, enabling more efficiency of vehicles and

machinery in all temperatures, while extending their service lives and reducing their fuel consumption. This not only allows more cost-effective operation, but also reduces CO<sub>2</sub> emissions and overall environmental footprint. Again, this reflects our future-oriented mindset.

In the following pages, you'll find more details on our company, the products we offer and how we not only help keep machinery moving, but also keep industries moving to prepare today for the challenges of tomorrow.

That's what we mean when we say: **Technology in Motion.**

Roger Dohmen  
Vice President  
Lube Oil Additives and Chemicals



# Tomorrow's solutions, today

Anticipating emerging challenges

## Fast-forward your innovation strategy

BRB Lube Oil Additives and Chemicals drives innovation for tomorrow, today. By creating solutions to challenges our customers haven't even yet recognized on the horizon, we place them in a strong position to leapfrog technological developments. As a provider of non-homologated products, we can operate faster, more cost-efficiently and in a more targeted manner than our competitors. This is one reason why we can deliver when others can't. We're specialized, but serve a wide array of industries.

Our solutions are also adaptable to your unique needs. Whether you are looking for single components to optimize your formulations or end-to-end systems, BRB

can deliver. Based on an in-depth understanding of your technologies and marketplace, our experts will work with you to find the ideal solution. This customer-centric business model is your assurance of swift and reliable responses to your requirements, regardless of the size of your company.

As a lean and agile organization, BRB Lube Oil Additives and Chemicals leverages freedoms and opportunities not open to many competitors. We operate differently because we see things differently. This is clearly reflected in our approach to innovation.

## 1 + 1 = 3

A further key component of BRB's product development strategy is co-innovation. We regularly partner with customers in R&D processes to create targeted responses to technology- and/or market-specific demands.

Nobody knows your customers and technologies better than you do, and we help you make the most of that unique strength. By combining our long-standing global expertise and resources with the close-up and in-depth knowledge of your internal technicians and formulators, we arrive at breakthroughs that would otherwise be out of reach.

Co-innovation not only enables you to leverage our capacity in line with your objectives, but also results in highly individual solutions that set you clearly apart from competitors.

Viscotech Duisburg



# Products: Petrolad<sup>®</sup> and Viscotech<sup>®</sup>

Our leading technology brands

The technologies we deliver for automotive and industrial aftermarket applications include viscosity modifiers and additives for systems such as engine oils, drivelines, hydraulic fluids and fuels. In addition, we provide sulfonates, tackifiers and other special components. Additives for coolants and windshield wash fluids round off the portfolio.

#### Many applications, one mindset

As diverse as these applications are, our approach remains consistent throughout: problem-solving and product optimization are always our top priorities – with standard solutions from our portfolio, customization or innovation. Whether you require an individual component or a package, our technology brands Petrolad<sup>®</sup> and Viscotech<sup>®</sup> can deliver a solution.

#### Climate commitment

Today more than ever, performance and sustainability are inseparable. As a subsidiary of the PETRONAS Chemicals Group, BRB International is aligned with an ambitious sustainability roadmap. For example, we work to systematically reduce our CO<sub>2</sub> footprint and have made a commitment to operate with zero carbon emissions by 2050. As this also affects the emissions of our customers and the industries they serve, our commitment has far-reaching impact.

These advantages add up to make BRB Lube Oil Additives & Chemicals the No. 1 choice for high-quality, reliable, non-homologated lube oil additives and chemicals for a sustainable future.



# Technologies to drive your performance

Profit from our problem-solving approach

BRB Petrolad® engine oil additives enable high-performance diesel and gasoline engine oils at very competitive treat rates, using a wide variety of base oils. Our experts can deliver multipurpose engine oil additive packages suitable for formulating heavy-duty diesel oils (HDDO) and passenger car motor oils (PCMO). The finished products are used for both on- and off-road applications, and can be combined in formulations with our Viscotech® viscosity modifiers.

## **Automotive and industrial**

Petrolad® driveline additives include specialized packages for applications like gear oils, automatic transmission fluid (ATF) and off-road machinery lubricants as well as industrial applications. Our gear oil additive packages enable you to formulate low-odor gear oils, thanks to a unique sulphurous/phosphorous technology. We also offer gear oil additive packages with extreme pressure and anti-corrosion properties for industrial use.

Petrolad® Automatic transmission fluid (ATF) additive packages are designed to meet the requirements of the most demanding approval processes in the market, such as those for Dexron, Mercon and Allison. Our packages have outstanding oxidative stability and low temperature properties. Our ATF packages can be used at economical

treat rates and are compatible with different mineral-base oils.

The Petrolad® product portfolio includes tractor oil additives to formulate universal tractor transmission oils (UTTO) and super tractor oil universal (STOU). Alongside UTTO and STOU applications, our off-road additive packages can also be used to formulate non-farm applications that have wet brakes, power shift transmissions and hydraulics. Our off-road additive packages offer excellent frictional characteristics and outstanding gear protection in line with the stringent performance requirements of OEMs.

## **Hydraulic additives**

Thanks to outstanding corrosion protection, good filterability, demulsification and excellent anti-wear properties, Petrolad® hydraulic fluid additives help extend fluid and equipment life. Our ashless hydraulic additive packages are suitable for applications such as R&O oils, hydraulic fluids, gear oils, turbine oils, compressor oils and greases. Petrolad® zinc-containing hydraulic additive packages are especially designed to formulate hydraulic fluids based on mineral oils as well as PAO/ester-based oils. These packages have low treat rates and offer exceptionally high oxidation stability.

### Viscosity modifiers

The flow characteristics of lubes play a huge role in their effectiveness. Under the Viscotech® brand, BRB offers an array of high-performance viscosity modifiers that deliver precisely the properties your products need. By fine-tuning your lubricant's behavior to the environment in which it operates, reducing its tendency to change viscosity according to temperature, our solutions enable you to develop products that stand out from the competition. Used mainly in multi-grade engine oils, gear oils, automatic transmission fluids, greases and various hydraulic fluids, our viscosity modifiers are also suitable for combination with our Petrolad® engine oil additives.

### Targeted viscosity solutions

The Viscotech® lineup includes the 6 series for use in multi-grade engine oils and industrial lubricants, the 4 and 5 series for use in formulating multi-grade engine oils to meet stringent performance requirements and our solid Viscotech® products, which are available in a wide range of dilutions in different API Group base oils.

## Product overview\*

### Petrolad®

Engine oil additives	
Passenger car motor oils (PCMO) and heavy duty diesel oils (HDDO)	Petrolad® 8770 Petrolad® 8771SC
Passenger car motor oils (PCMO)	Petrolad® 9200(G)
Driveline additives	
Gear oil	Petrolad® 336
	Petrolad® 336EP
	Petrolad® 339
	Petrolad® 133LS
Automatic transmission fluids (ATF)	Petrolad® 743EU
	Petrolad® 750
Off-road	
Universal tractor transmission oil (UTTO)	Petrolad® 5101
Super tractor universal (STOU)	Petrolad® 5201
	Petrolad® 8134
Hydraulic additives	
Ashless	Petrolad® 1846
Zinc-containing	Petrolad® 9530
	Petrolad® 9533
Sulfonates	
Overbased calcium sulfonate detergent	Petrolad® 6779(A)
Coolants	
	Petrolad® 3550
	BRB Long-life coolant

### Viscotech®

Viscosity modifiers		
Olefin copolymer (OCP) types	Solid	Viscotech® 6540
		Viscotech® 6640
		Viscotech® 6545
		Viscotech® 6550
		Viscotech® 6073
Liquid VIRG BO	Liquid VIRG BO	Viscotech® 6540L
		Viscotech® 6540LP
		Viscotech® 6545L
Liquid RR BO	Liquid RR BO	Viscotech® 6540LR
		Viscotech® 6640LR
		Viscotech® 6073LR
Styrenic types	Solid	Viscotech® 483
		Viscotech® 593
Liquid VIRG BO	Liquid VIRG BO	Viscotech® 483L
		Viscotech® 494L
		Viscotech® 494LD
		Viscotech® 533L
		Viscotech® 535L
		Viscotech® 536L
		Viscotech® 593L

\*Please note that this is an excerpt only. For a full overview of our products, please contact your local salesperson.

# A reliable partner in changing times

Supporting transformation in the sectors we serve



## Efficiency across industries

With industries and regulations changing at a fast pace, companies need partners who can think ahead and fast-forward to solutions for future challenges. At BRB International, we turn these challenges into opportunities for our customers.

## Driving automotive innovation

With higher demands than ever on fuel efficiency, first-fill and aftermarket engine oils and drivetrain lubricants must meet high standards. Our solutions enable you to surpass expectations – reliably and cost-effectively. As electromobility adoption continues to expand, lubricant volumes will decrease, while performance demands increase. Count on us for specialized additives in response.

## Farm machinery and off-road

Machinery for agriculture, forestry, excavating and other applications must stand up under extreme conditions and temperatures. Our additives for hydraulic fluids and lubricants help ensure consistent performance and extended service lives.

Particularly in the areas of agriculture and forestry, enhanced fuel efficiency and reduced emissions help ensure food security and limit environmental impact.

## Industry

Whether in logistics or production facilities, the efficiency of industrial systems impacts the bottom line as well as emissions. Our technologies are instrumental in solutions that keep equipment and machinery running smoothly, while cutting down energy consumption and maintenance requirements.

Regardless of which sectors you serve with your products, our additives for lube oils, greases and hydraulic fluids can help keep moving parts moving – and make a difference.

# Our global footprint

Your regional BRB partner knows your market

Wherever you are, whatever your needs, your partners at BRB International are nearby. To get in touch with us in your region, please contact:  
E-mail: [info@brbbv.com](mailto:info@brbbv.com)  
Phone: +31 475 560 300







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**BRB Lube Oil Additives &  
Chemicals B.V.**

Voltaweg 26  
6101 XK Echt  
Postbus/PO Box 3552  
6017 ZH Thorn  
The Netherlands

Phone: +31 475 560 300

Email: [info@brbbv.com](mailto:info@brbbv.com)

[www.brb-international.com/lac](http://www.brb-international.com/lac)