



BRB

Ambition Flexibility Innovation



BRB Additives

Petrolad & Viscotech

Introduction

BRB has extensive experience in the field of lubricants and lubricant Additives, resulting in a wide range of products for different applications:

- Viscosity index modifiers
- Gear oil packages
- Engine oil packages
- Automatic Transmission Fluids
- Hydraulic oil packages
- Components (PPD, Anti foams)



Viscosity Index Improver: Viscotech

- Flexible production: Toll blending, with customers formula
- Second largest VI plant in EU
- 9000T storage capacity for base stock
- Supply range: barge/railway/bulk
- Tailor-made viscosity: 450-1600 cSt
- Guaranteed and tested quality



Viscosity Index Improvers: Viscotech

- OCP polymer based VI improvers
- Solid blocks or dissolved in base oil*
- SSI indexes:
 - 22 SSI Viscotech 6540 (L/LP)
 - 35 SSI Viscotech 6545 (L)
 - 52 SSI Viscotech 6550 (L)



* Possible to blend with customers formulation

- PMA based VI improvers
 - Viscotech 0-732: Intended to formulate manual and automatic transmission fluids
 - Viscotech 4-032: Intended to formulate Automatic Transmission Fluids
 - Viscotech 4-387: Intended to formulate Gasoline, Diesel and Heavy Duty engine oils
 - Viscotech 8-133: Intended to formulate Hydraulic fluids



Gear oil: Petrolad 336 (EP)

- Low odor
- Excellent anti corrosion properties
- Limited micro pitting
- No additional limited slip booster required
- Suitable for use in the automotive and industrial sector
- Economical treat rates

Gear oil: Petrolad 336 (EP)

Specifications

Treat rates (% wt)

Scania STO 1:0
Mack GO-J plus

• 4.5-6.0

API GL-5/GL-5 LS
SAE J2360
MT 1

• 3.0-4.5

GL-4
Us Steel 224
51517 Part III

• 1.8-3.0

Applications Petrolad 336 (EP)

- Automotive Gear lubes
- Industrial Gear lubes (EP)
- Turbine Gear lubes



Engine oil packages

- Package especially for high sulphur fuels
- High TBN package for use in regions where fuel quality is low
- Economical treatment rates

Gasoline engine oil packages

API grade

BRB Products

SF

- **Petrolad 8771 SC**
(4.76% wt)

SC

- **Petrolad 8771 N**
(3.0% wt) (high TBN)

Diesel engine oil packages

API grade

BRB Products + treat rates

CF

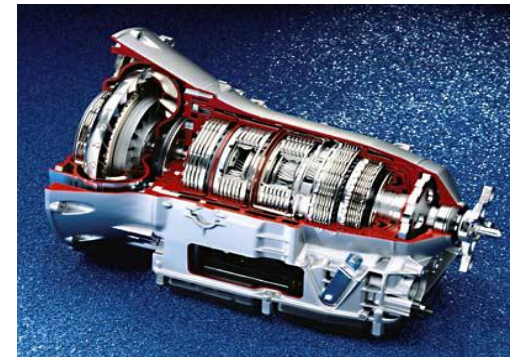
- **Petrolad 8771N (5.9% wt) (high TBN)**

CC

- **Petrolad 8771SC (2.42% wt) (high TBN)**
- **Petrolad 8772N (2.3.% wt) (high TBN)**

ATF: Petrolad 743N

- Outstanding oxidative stability
- Outperforms an established competitor at the same treat rate (% wt)
- No additional additives (PPD, VII e.g.) needed to formulate an ATF
- Designed to be an economical package
- Meets the requirements of most common approvals



Automatic Transmission Fluid

Approvals at a 10% wt dosage

**Petrolad
743 N**

- Dexron IIIH
- Ford MERCON
- Allison C-4
- Caterpillar TO-2
- M2C138-CJ
- M2C166-H
- Power Steering

Ash-less Hydraulic additive package: Petrolad 1846

- Outstanding anti corrosion properties
- Good filterability and emulsification
- Very good oxidation stability
- Retention of performance that exceeds equipment lifespan



Ash-less Hydraulic additive package: Petrolad 1846

Treat rates (% wt)

Approvals

0.6

- DIN 51524 part 2 and part 3
- DIN 51515 part 2

0.5

- Denison HFO

0.3

- DIN 51524 Part I
- Afnor NF E 48-603
- DIN 51517 Part II

Ash-less Hydraulic additive package: Petrolad 1846

Additional approvals at a 0.3 wt %

TLV 9013	MIL-L-17672 D
Cincinnati P38, P55, P54, P57 and P62	BB HTGD 90117
DIN 51515 part I	US Steel 120
BS 489	DP 6521 (DAA, DAB, DAH, DAG)
GE GEK 32568 A/C	DIN 51506 (VBL, VCL, VDL)
CEGB 207001	VDMA 24568

Zinc containing Hydraulic additive packages: Petrolad 9530

- Low treat rate level
- Barium and calcium free
- Excellent anti-wear properties
- Good corrosion protection
- Excellent anti-oxidation properties



Zinc containing Hydraulic additive packages

Treat rates (% wt)

Approvals

**Petrolad
9533**

- Cincinatti Milacron P-68/69/70
- Denison HF-0/HF-1/HF-2
- DIN 51524 Part 2 and 3
- US Steel 127/136
- Vickers M-2950-S/1-286-S



0.8 %
wt

**Petrolad
9530**

- AFNOR NF E 48-603 (HM & HL)
- Denison TP02100
- DIN 51524 Part 1 & part 2 (HLP)
- US Steel 126 & 127
- Vickers I-286-S



0.45 %
wt



Others

- **Petrolad 3378:** anti wear additive and oxidation inhibitor with mild anti-corrosion properties
- **Petrolad 1877:** foam inhibitor
- **BRB silicone anti-foam**
- **M.F.M:** molecular friction modifier
- **Petrolad 7072:** pour point depressant
- Tackyfiers
- **Petrolad 5608N:** Metalworking package with excellent emulsion properties, even in hard water
- Full range of aftermarket **fuel additives**
- **Thixocal:** full range of corrosion preventive compounds and salt spray protectors

Aftermarket fuel additives

- Valve clean
 - Excellent inlet valve clean up and keep clean
- Fuel Plus
 - Carburetor keep-clean
 - Inlet valve deposit keep-clean
 - Inlet valve deposit clean-up
 - Reduced emissions
- Injector Clean
 - Cleans fuel injectors of directly injected gasoline engines
- Diesel Plus
 - Injector cleaning
 - Improved fuel economy
 - Prolonged engine life





Summary

- **BRB international BV** offers a wide range of additives for different applications at competitive dosage and pricing
- High quality OCP and PMA based **Viscosity Index Improvers**
- Multifunctional and economical **Gear oil package** with a proven quality record
- **ATF** which meets the most demanded specifications in the market
- **Industrial additive** packages that meet a wide range of approvals
- Additive package to formulate **Metalworking fluids**
- **Components** like PPD's and corrosion preventives complete the range

Ambition Flexibility Innovation



- This presentation does not consist the full range of additives, please contact us for more information on agricultural/engine oil packages

Thank you for your attention!!

Any questions?

Do not hesitate to contact us:

www.brb-international.com/contacts



BRB

May we present you our knowledge?