

QUALITY PERFORMS.



Innovative Solutions for High Performance Lubricants

Additin® RC 9xxx Lubricant Additive Packages for Industrial Applications

X Additin®

QUALITY WORKS.

LANXESS
Energizing Chemistry

LANXESS INDUSTRIAL ADDITIVE PACKAGES VALUE PROPOSITION

Why Additin® additive packages?

Specialized market pioneer with proven history

Cutting edge know-how with best-in-class solutions

In-depth understanding of OEM needs

Top industry experts with deep knowledge of market trends

In-house testing capabilities and expertise

Bosch Rexroth, Parker Denison, Eaton Vickers test rigs

Excellent additives technology

Back-ward integrated into all key additive components

- We offer highly efficient packages for:
 - Hydraulic, Turbine and Compressor fluids
 - Industrial gear oils
 - Metalworking fluids and Slideway oils
 - Greases
- Development and research centers on three continents in Germany, USA and China
- In-house resources, technology and expertise to get all major OEM approvals and to offer read-across approvals to our customers
- Our experts are very well networked within OEM and specifications issuing community, directly impacting development of these standards for the industry
- We offer tailor made formulations for specific applications and operating conditions

LANXESS GLOBAL FOOTPRINT FOR ADDITIVE PACKAGES



Production site



Technical Competence Center



■ Both manufacturing sites are ISO 9001 and ISO 14001 certified

■ Industry experts in Additive Packages Technology in all research centers



HYDRAULIC PACKAGES



| Product | Technology | Description |
|-----------------------------------|--|--|
| Additin® RC 9200N | Premium OEM Level Ash Containing (Zinc) | <ul style="list-style-type: none"> ■ Bosch Rexroth RDE 90235 approved ■ Parker Denison HF-0 approved ■ Fullfills Eaton E-FDGN-TB002-E incl. Vickers 35VQ25A Pump test |
| Additin® RC 9207 | Premium Antiwear Level Ash Containing (Zinc) | <ul style="list-style-type: none"> ■ DIN 51524 HLP ■ ISO 11158 HM ■ ASTM-D 6158 HM |
| Additin® RC 9217 | Specialty Level Ash Containing (Zinc) | <ul style="list-style-type: none"> ■ DIN 51524 HLP-D ■ Tailor made products to special customer needs |
| Additin® RC 9300 | Premium OEM Level Ashless (metal free) | <ul style="list-style-type: none"> ■ Bosch Rexroth RDE 90235 approved ■ Parker Denison HF-0 approved ■ Fullfills Eaton E-FDGN-TB002-E incl. Vickers 35VQ25A Pump test |
| Additin® RC 9305 | Premium Antiwear Level Ashless (metal free) | <ul style="list-style-type: none"> ■ DIN 51524 HLP ■ ISO 11158 HM ■ ASTM-D 6158 HM |
| Additin® RC 9317 (M93.005) | Specialty Level Ashless (metal free) | <ul style="list-style-type: none"> ■ DIN 51524 HLP-D ■ Tailor made products to special customer needs |
| Additin® RC 9330 | Food Grade Ashless (metal free) | <ul style="list-style-type: none"> ■ Kosher & Halal certified ■ Registered on NSF white book list (NSF HX-1) |
| Additin® M 93.001 | Bio Hydraulic Ashless (metal free) | <ul style="list-style-type: none"> ■ ISO 15380 ■ LUSC listed according to EU Ecolabel |

TURBINE-, GEAR-, COMPRESSOR- AND SLIDEWAY OILS

| Product | Application | Description |
|---------------------------|---|---|
| Additin® RC 9321 D | Turbine Oils Ashless (metal free) | <ul style="list-style-type: none"> ■ DIN 51515, ISO 8068, BS489 ■ Fullfills premium OEM requirements (e.g. Siemens, Alstom, GE, Westinghous, Solar) |
| | Compressor Oils Ashless (metal free) | <ul style="list-style-type: none"> ■ Recommended for compressor fluids ■ DIN 51506 |
| Additin® M 93.004 | Compressor Oils Ashless (metal free) | <ul style="list-style-type: none"> ■ Recommended for compressor fluids ■ DIN 51506 |
| | EP/AW-Gear Oils Ashless (metal free) | <ul style="list-style-type: none"> ■ DIN 51517 CLP, ISO 12925 ■ Fives CM-P-50, US Steel 222 – 224, AGMA 250.04 EP-Gear |
| Additin® RC 9330 | Food Grade Gear Oils Ashless (metal free) | <ul style="list-style-type: none"> ■ Kosher & Halal certified ■ Registered on NSF white book list (NSF HX-1) |
| | Gear, Slideway, Rock drill oils and Metalworking fluids | <ul style="list-style-type: none"> ■ DIN 51517 CLP, ISO 12925 ■ Fives CM-P-50, US Steel 222 – 224, AGMA 250.04 EP-Gear ■ Suitable for formulating multipurpose MWF and rock drill oils |



METALWORKING AND GREASE

| Product | Application | Description |
|-----------------------------------|--------------|---|
| Additin® RC 9701 | Metalworking | ■ Grinding of cemented carbide |
| Additin® RC 9720 | Metalworking | ■ Multipurpose package for cutting and drawing operations |
| Additin® M 97.001 | Metalworking | ■ Package for specific OEM metalworking formulations |
| Additin® M 97.003 | Metalworking | ■ Metalworking and Slideway Oil package |
| Additin® RC 9502 | Grease | ■ Light colored fully formulated grease package (EP, AW, CI, AO) |
| Additin® RC 9505 | Grease | ■ Cost effective grease package for Li-soap and Li-complex greases |
| Additin® RC 9506 (M95.004) | Grease | ■ Grease package based on high pressure sulfurized isobutene (chlorine free production procedure) |

ROBUST WORLDWIDE MANUFACTURING CAPABILITIES

- Worldwide identical recipes for global formulations
- Tailor made regional solutions
- Extensive manufacturing capabilities available globally
- Key manufacturing facility in Germany, Mannheim is being expanded with additional filling stations and tank farm coming online
- Global warehousing network
- Security and reliability: all critical components available in-house
- Additive Packages production since mid 1970s



EXCELLENT R&D TESTING CAPABILITIES FOR INNOVATION

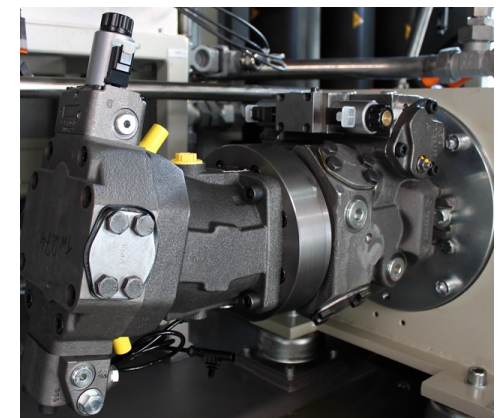
Modern test rigs and realistic testing equipment

- Bosch Rexroth RFT-APU-CL test rig (OEM approved)
- Parker Denison T6H20C test rig (OEM approved)
- Eaton Vickers V104C test rig (ASTM and ISO ready)
- FAG FE-8 bearing tester
- Flender Foam test
- FZG gear tester
- Timken test rig
- ...

Precision tools and lab scale equipment

- SRV-4 test rig for friction measurement
- MPR tester for micropitting simulation
- Microtap tapping torque machine
- Corrosion testing cabinets
- 3D optical profilometer
- Four ball tester (4x)
- Brugger tester
- ...

=> over 200 top modern lubricant test methods available for development, approval testing and customer support





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