ExxonMobil

Enhance wind power with proven solution for wind turbine cleaning

Wind turbine maintenance, including cleaning the key components such as bearings, is vital to maintaining turbine efficiency and improving wind power generation. Selecting the right cleaning agent along with the right grease may help extend bearing life. Actrel™ fluid is a proven cleaning solution that can thoroughly remove the old, hardening grease while preventing premature bearing damage and protecting against rust and corrosion. You can benefit from a complete maintenance solution by combining Actrel fluid with Mobil Grease™.

Key benefits

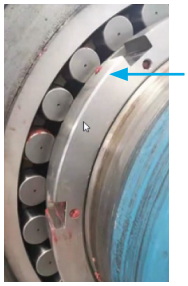
- Potentially improve wind power generation
- Minimize impact on sealing parts
- Potentially improve cost effectiveness
- Care for operators' safety and fulfill environmental needs

Effectively remove old, hardening greases

Actrel™ fluids have **better wetting capabilities** because of their low surface tension (24.14-26.8 Dynes/cm @ 20°C vs. 72.8 Dynes/cm of water @ 20°C), offering **better spreadability** and enabling flow through tight spaces in complex parts, such as small dead-end holes or fins that are difficult to clean and dry.

BEFORE

Bearing with old grease

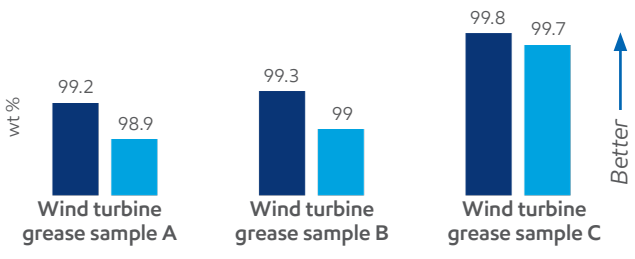


AFTER

Old grease removed

CLEANING EFFICIENCY, GB/T 23435-2009

Appendix A (mod)



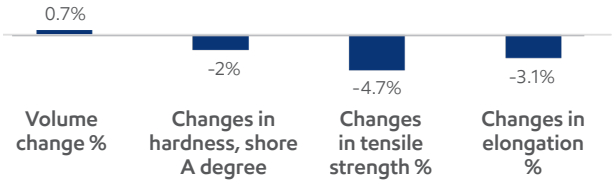
Detailed test method can be provided as requested.
ExxonMobil data: Single sample determination

Compatible with most plastics, metals and elastomers

Actrel™ fluids will not alter bearings during the cleaning process as they are compatible with most polymeric materials and fully compatible with almost all metals.

COMPATIBILITY WITH HNBR

Actrel 3363L fluid; room temperature, 4 hours



HNBR: Hydrogenated Nitrile Butyl Rubber; ASTM D2240-15 (2021); ASTM D412-16 (2021); ExxonMobil data: Single sample determination; ASTM D471

Potentially improve cost effectiveness

Unplanned failures can cost the asset owner as much as $30,000 per turbine per year in terms of repairs and spare parts and up to 7 days worth of lost production per year - not including production losses caused by pre-emptive shutdowns or long delivery times for materials, equipment and technicians to the affected turbine.[1] Effective cleaning of greases in wind turbines can potentially help reduce the operation and maintenance (O&M) cost.

1 Source: Report issued by Wood Mackenzie Power & Renewables, 2019

Ensure operators' safety, fulfill environmental needs

17x Lower odor intensity#

3x Higher OEL*

Actrel 3363L vs. High flash kerosene, St. Croix Sensory Inc., based on ASTM E544-10
* Actrel 3363L vs. High flash kerosene, OEL RCP-TWA, mg/m³
ExxonMobil data: Single sample determination

	Property	Actrel 3363L fluid[2]	Actrel 1178L fluid[2]	High flash kerosene[2]
Lower constituent levels	Aromatic content[1], wt%(AMS 140.31/GC1)	0.003	0.001	23
	Naphthalene, ppm[3] (GC)	< 1	< 1	< 10,000
Care for operators' safety	OEL, mg/m³	1200	1200	350
	Health impact difference	--		H351: Suspected of causing cancer
Fulfill environmental needs	Eco toxicity	Not expected to be harmful to aquatic organisms		H400, H410: Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
	Biodegradation[4]	Inherently biodegradable	Readily biodegradable	

1 Typical data from PDS
2 ExxonMobil product SDS: Actrel AP grades, High Flash Kerosene US grade
3 ExxonMobil PRS statement
4 OECD method

Technical question?
Connect directly with our technical experts at fluidsanswerperson@exxonmobil.com

Visit us for more information:
exxonmobilchemical.com/energy

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