



THINK YOUR **NEW LUBRICANTS** ARE CLEAN ENOUGH?

THINK AGAIN.

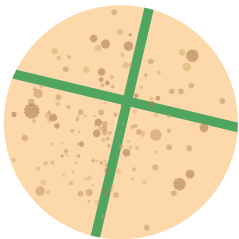


Maintenance professionals devote significant planning and effort to maintaining their equipment because they know the high cost of equipment downtime and lost production. Most organizations select lubricants for the application and performance additives, but overlook cleanliness.

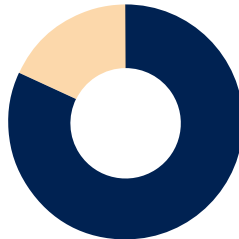
How do you know if your new lubricant is clean enough?

CONTAMINATION: A ROOT CAUSE OF EQUIPMENT FAILURE

Typical New Lubricant

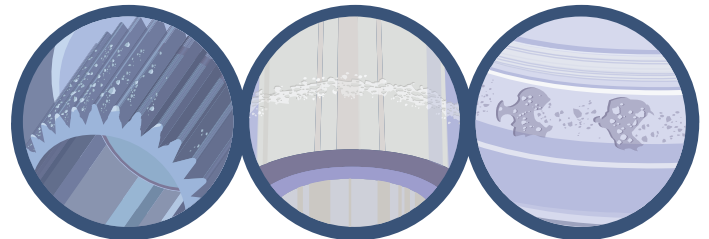


#1 CAUSE
of lubricant-related failures in equipment is contamination.¹

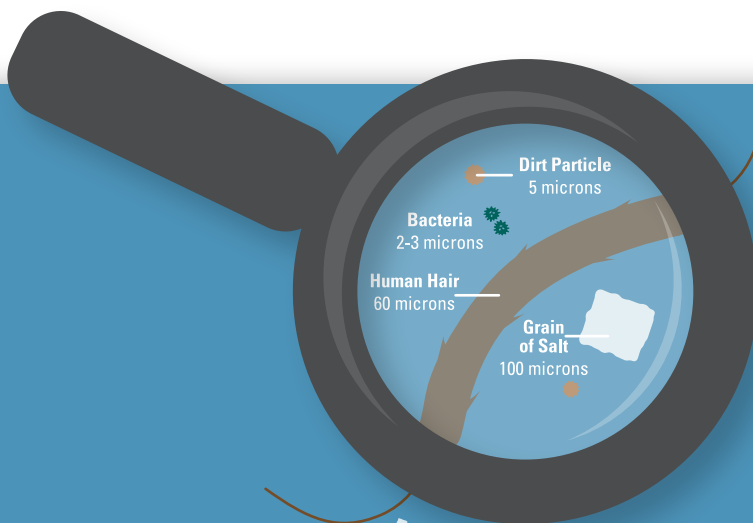


82%
of lubricant-related failures in equipment is due to contamination.¹

¹ Source: Noria Corporation



2 OUT OF 3
equipment failures are attributed to abrasion, erosion or fatigue.



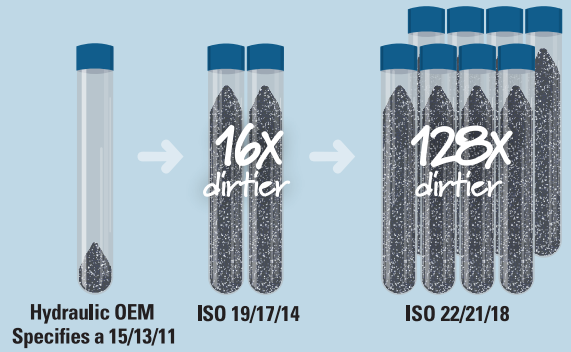
IT'S WHAT YOU CAN'T SEE THAT'S **MOST HARMFUL**

Small contaminant particles that you can't see with the naked eye – particles 1 to 14 microns in size — do the most damage. These clearance-size particles enter the lubrication zone between machine parts and generate damaging wear.

CONTAMINANT LEVELS CAN RISE QUICKLY

An increase of just one ISO Cleanliness Code represents exponential growth of contaminant levels in the lubricant — and a significant increase in risk of equipment wear and failure.

Contamination at three ISO levels, based on a 400 Liter / 106 gallon tank.



HOW DOES LUBRICANT GET CONTAMINATED?

Contamination defects in lubricant can occur in several ways, including:



RAW MATERIALS

Using oil that has no cleanliness specification. The oil might come in clean enough one day but dirtier than required the next.



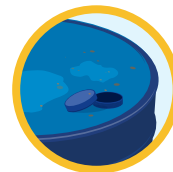
OPERATIONAL DISCIPLINE

Failing to manage the lubricant's cleanliness condition.



MAINTENANCE WORKMANSHIP

Using poor product handling procedures.



MAINTENANCE MATERIAL & STORAGE

Not following best-in-class storage practices.



DESIGN, BUILD, INSTALL

Using components that contain contaminants left behind during the manufacturing process, have been stored on open shelves and/or have been exposed to the environment for a length of time.

WHAT'S THE SOLUTION?

Reducing contaminant-caused wear is as easy as:



1. START CLEAN

with certified clean lubricants that meet equipment manufacturers' cleanliness and performance specifications at delivery.

2. MONITOR

the lubricants' in-service performance and watch wear metals decline with the use of clean lubricants and approved product handling methods.

3. STAY CLEAN

with an effective lubrication management program and utilize data to optimize your drain interval.



EXTEND THE LIFE OF YOUR COMPONENTS

Using clean oil that meets your equipment manufacturers' requirements provides multiple benefits for the component and lubricant. The top benefit is increased component life.

This is an example for demonstration purposes. Actual savings will vary depending on lubricant performance, oil sample frequency, equipment type, equipment condition and previous condition, and the ability to keep the fluid clean.

Life Extension Chart - Hydraulic Systems

Current Machine Cleanliness	23/21/18	3	4	5	7	9
	22/20/17	2	3	4	5	7
	21/19/16	1.6	2	3	4	5
	20/18/15	1.3	1.6	2	3	4
	19/17/14		1.3	1.6	2	3
	18/16/13			1.3	1.6	2
		19/17/14	18/16/13	17/15/12	16/14/11	15/13/10
	New Cleanliness Level					

System Components Last Seven Times Longer

Source: Noria Corporation, Fundamentals of Machinery Lubrication, Noria Skills Training