

ISO 4406:99 Cleanliness Level Standards

Oil Cleanliness

Clean oil greatly extends the life of bearings and equipment. Most oils are not clean. They don't look dirty, but they are full of small particles in the 2 to 30 micron range that the eye cannot see, yet they are very damaging to equipment. These particles consist mainly of fibers, silica (dirt) and metals.

The amounts and sizes of particles can be measured with a laser particle counter and then quantified using the ISO 4406:99 Cleanliness Rating, which reports on the particle content of 1 milliliter of oil (approximately equal to one eye dropper).

ISO 4406:99 Cleanliness Level Standards		
Range Number	Number of Particles per ml	
	More Than	Up to and Including
24	80,000	160,000
23	40,000	80,000
22	20,000	40,000
21	10,000	20,000
20	5,000	10,000
19	2,500	5,000
18	1,300	2,500
17	640	1,300
16	320	640
15	160	320
14	80	160
13	40	80
12	20	40
11	10	20
10	5	10
9	2.5	5
8	1.3	2.5
7	.64	1.3
6	.32	.64

Note: The classification rating follows a geometric progression where each level decreases in cleanliness and is twice as dirty as the previous level.

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Oil Cleanliness levels may be reported using either a two or three digit rating.

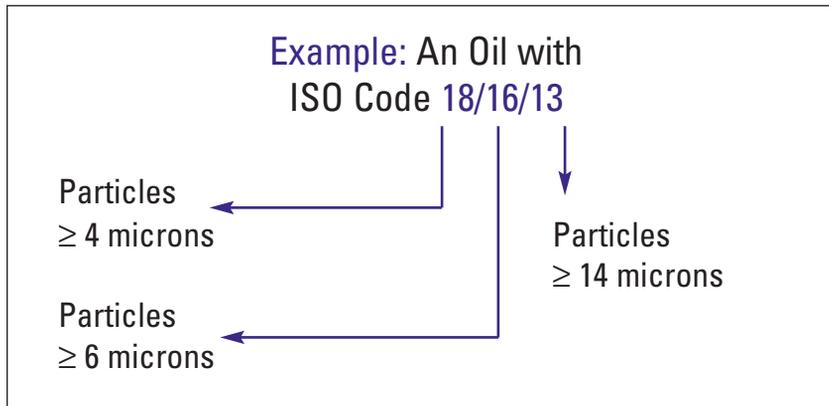
The cleanliness level of an oil with a particle count of:

2000 \geq 4 microns

500 \geq 6 microns

60 \geq 14 microns

would be reported as 18/16/13.



Royal Purple's best selling bearing and hydraulic oils are extremely clean, having a typical ISO cleanliness rating of 14/13/11.

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