

What is ISO?

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One question we are always being asked is “What is ISO and is it really important when sampling oils?”

ISO Solid Contamination Code (ISO 4406): a code assigned on the basis of the number of particles per unit volume greater than 4, 6 and 14 microns in size. Range numbers identify each increment in the particle population throughout the spectrum of levels.

ISO particle counting is a very important tool when determining to become a “Proactive” company. When particle counting, we can determine the cleanliness of the oil and determine the level of water present in an oil sample. We use the Karl Fisher test when testing for water and report in % or ppm.

To help understand the size of particles we have given you a small sample to compare with:

1. Bacteria are the size of 3 microns
2. Red blood cell is the size of 5 microns
3. Talcum Powder is the size of 10 microns
4. Fine Floor dust is the size of 40 microns
5. Human hair diameter is the size of 80 microns

This should help you understand really how small a micron is.

Microns = Micrometers

In comparison 1,000,000 microns = 1 meter or 25,400 microns = 1 inch

More than particles per ml	Up to & including particles per ml	ISO Range Number
80,000	160,000	24
40,000	80,000	23
20,000	40,000	22
10,000	20,000	21
5,000	10,000	20
2,500	5,000	19
1,300	2,500	18
640	1,300	17
320	640	16
160	320	15
80	160	14
40	80	13
20	40	12
10	20	11
5	10	10
2.5	5	9
1.3	2.5	8
0.64	1.3	7
0.32	0.64	6
0.16	0.32	5

ISO 4406:2017

1850 particles > 4, 600 particles > 6, 65 particles > 14
= **ISO 18/16/13**