



Measuring Hydraulic Fluid Cleanliness

Hydraulic cleanliness is an important aspect to be considered when specifying hydraulic systems and components. It is usual to request that the system is flushed to achieve a specific degree of cleanliness, e.g. NAS 6. Measuring hydraulic cleanliness is not straight forward, consequently various standards exist on this subject. See our page on comparing [cleanliness classes](#).

ISO 4406:- The ISO Cleanliness Code, ISO 4406, 1987 is the perhaps the most widely used International standard for representing the contamination level of industrial fluid power systems. Under ISO 4406 cleanliness is classified by a two number code, e.g. 16/13, based on the number of particles greater than 5 µm and 15 µm respectively in a known volume of fluid.

The full table of ranges for ISO 4406 is shown below

| Range Number | No 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 | 0.64 | 1.3 |
| 6 | 0.32 | 0.64 |