



# 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](#).

## NAS 1638

The NAS 1638 cleanliness standard was originally developed for aerospace components in the US but is still widely used for industrial and aerospace fluid power applications. It is used widely in the UK North Sea industries. NAS 1638 is comprised of fluid cleanliness classes, each class defined in terms of maximum allowed particle counts for designated particle size ranges. See below.

Class	Maximum Number of Particles / 100 ml				
	5 - 15	15 - 25	25 - 50	50 - 100	>100
00	125	22	4	1	0
0	250	44	8	2	0
1	500	89	16	3	1
2	1000	178	32	6	1
3	2000	356	63	11	2
4	4000	712	126	22	4
5	8000	1425	253	45	8
6	16000	2850	506	90	16
7	32000	5700	1012	180	32
8	64000	11400	2025	360	64
9	128000	22800	4050	720	128
10	256000	45600	8100	1440	256
11	512000	91200	16200	2880	512
12	102400	182400	32400	5760	1024