

液压油清洁度 iso 标准及 nas 1638 标准对照表

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iso 4406	nas 1638
19/16	10
18/15	9
17/14	8
16/13	7
15/12	6
14/12	
14/11	5
13/10	4
12/9	3
11/8	2
10/8	
10/7	1
10/6	
9/6	0

iso 4406 清洁度标准

颗粒 > 5 μ 颗粒 > 15 μ		iso 等级
100 cc 液压油		
8,000,000	16,000,000	24
4,000,000	8,000,000	23
2,000,000	4,000,000	22
1,000,000	2,000,000	21
500,000	1,000,000	20
250,000	500,000	19
130,000	250,000	18
64,000	130,000	17
32,000	64,000	16
16,000	32,000	15
8,000	16,000	14
4,000	8,000	13
2,000	4,000	12
1,000	2,000	11
500	1,000	10
250	500	9
130	250	8
64	130	7
32	64	6
16	32	5
8	16	4
4	8	3
2	4	2
1	2	1

Hydraulic Equipment and Components Pressure Range	Minimum Class Requirement		GreenOil Filter Inserts		
	ISO 4406	NAS 1638	H	T	M
Silt sensitive, aerospace, robots, High pressure 250-400 bar	14/12/9	4	ISO 10/6 NAS 3		
Servo systems, injection moulding, High pressure 250-400 bar	16/14/11	5			
Proportional and flow valves, High pressure 250-400 bar	17/15/12	6			
Piston pumps and motors, Normal pressure 150-250 bar	18/16/13	7			
Typical new hydraulic oil	18/16/13	7			
Gear pump and motors, Medium pressure 50-150 bar	19/17/14	8			
Cylinders and Flow Control Low pressure 0-50 bar	20/18/15	9			
Lubrication Oil Equipment and Components					
Ball bearings, turbine oils, Small and medium gearboxes	14/12/9 4				
Roller bearings Transmission gearboxes	16/14/11	5		ISO 14/11 NAS 5	
Journal bearings Industrial gearboxes	17/15/12 6				
Mobile equipment and gearboxes Paper mill	18/16/13	7			ISO 16/12 NAS 7
Diesel engine lubrication	19/17/14 8				
Heavy duty gearboxes	20/18/15	9			
Typical new lubrication oil	20/18/15 9				
Typical in-line filtration	21/19/15	10			

Cleanliness Level Correlation Table

Code to ISO4406: 1999	Particles per Millilitre (ISO11171 um [c])			NAS 1638 (1964)	Disavowed SAE level (1963)	SAE AS 4059
	>4 Microns	>6 Microns	>14 Microns			
23/21/18	80,000	20,000	2,500	12		–
22/20/17	40,000	10,000	1,300	11		A12 / B12 / C11
21/19/16	20,000	5,000	640	10		A11 / B11 / C10
20/18/15	10,000	2,500	320	9	6	A10 / B10 / C9
19/17/14	5,000	1,300	160	8	5	A9 / B9 / C8
18/16/13	2,500	640	80	7	4	A8 / B8 / C7
17/15/12	1,300	320	40	6	3	A7 / B7 / C6
16/14/11	640	160	20	5	2	A6 / B6 / C5
15/13/10	320	80	10	4	1	A5 / B5 / C4
14/12/09	160	40	5	3	0	A4 / B4 / C3
13/11/08	80	20	2.50	2		A3 / B3 / C2
12/10/07	40	10	1.30	1		A2 / B2 / C1
11/09/06	20	5	0.64	0		A1 / B1 / C0
10/08/05	10	2.50	0.32	00		A0 / B0 / C000