

## General

Federal Specification 209E establishes alternate classifications of cleanliness as well as the four standard classifications 100, 1,000, 10,000, and 100,000 from 209C. Additionally these levels are addressed in metric “SI” and English. Listed below is a table summary from Federal Standard 209E, September 11, 1992.

## Federal Standard 209E

Class Name	Class Limits (not to exceed)									
	0.1 $\mu\text{m}$		0.2 $\mu\text{m}$		0.3 $\mu\text{m}$		0.4 $\mu\text{m}$		0.5 $\mu\text{m}$	
	Volume Units		Volume Units		Volume Units		Volume Units		Volume Units	
	(m <sup>3</sup> )	(ft <sup>3</sup> )	(m <sup>3</sup> )	(ft <sup>3</sup> )	(m <sup>3</sup> )	(ft <sup>3</sup> )	(m <sup>3</sup> )	(ft <sup>3</sup> )	(m <sup>3</sup> )	(ft <sup>3</sup> )
M1	350	9.91	75.7	2.14	30.9	0.875	10	0.283		
M 1.5	1,240	35	265	7.5	106	3	35.3	1		
M 2	3,500	99.1	757	21.4	309	8.75	100	2.83		
M 2.5	12,400	350	2,650	75	1,060	30	353	10		
M 3	35,000	991	7,570	214	3,090	87.5	1,000	28.3		
M 3.5			26,500	750	10,600	300	3,530	100		
M 4			75,700	2,140	30,900	875	10,000	283		
M 4.5							35,300	1,000	247	7
M 5							100,000	2,830	618	17.5
M 5.5							353,000	10,000	2,470	70
M 6							1,000,000	28,300	6180	175
M 6.5							3,530,000	100,000	24,700	700
M 7							10,000,000	283,000	61,800	1750

### Example:

Class M 2.5 (@ 0.3  $\mu\text{m}$  & 0.5  $\mu\text{m}$ ) describes air with not more than 1060 particulates/m<sup>3</sup> of a size 0.3  $\mu\text{m}$  and larger, nor more than 353 particulates/m<sup>3</sup> of a size 0.5  $\mu\text{m}$  and larger.

Class 100 @ 0.5  $\mu\text{m}$  describes air not more than 100 particles/ft<sup>3</sup> of a size 0.5  $\mu\text{m}$  and larger.

### Note:

For Reference Purposes please note that The Federal Standard 209E has been replaced by the ISO 14644 Standards. The ISO Cleanroom Classes are similar to The Federal Standard 209E Classes.