

Classification Standard EN1822

Efficient air filters (EPA), high efficiency air filters (HEPA) and ultra low penetration air filters (ULPA-filters) which used in the field of ventilation and air conditioning and for technical processes, e.g. for applications in clean room technology or pharmaceutical industry are classified and tested according to the EN 1822:2009 standard.

EN1822 Classification

Filter Group	Class	MPPS Integral Values		MPPS Local Values		Minimum Efficiency (%) @ DOP (0.3 µm)
		Efficiency (%)	Penetration (%)	Efficiency (%)	Penetration (%)	
EPA	E10	85	15	-	-	95
	E11	95	5	-	-	99,9
	E12	99,5	0,5	-	-	99,97
HEPA	H13	99,95	0,05	99,75	0,25	99,99
	H14	99,995	0,005	99,975	0,025	99,999
ULPA	U15	99,9995	0,0005	99,9975	0,0025	-
	U16	99,99995	0,00005	99,99975	0,00025	-
	U17	99,999995	0,000005	99,9999	0,0001	-

MPPS: Most Penetrating Particle Size

Classification Standard EN ISO 14644-1

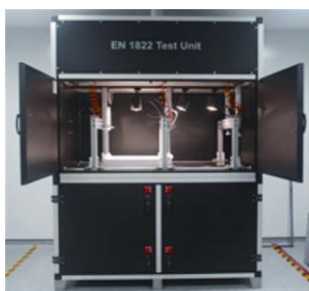
ISO 14644 defines the classification of air cleanliness in cleanrooms and associated controlled environments exclusively in terms of concentration of airborne particles. Only particle populations having cumulative distributions based on threshold (lower limit) particle sizes ranging from 0.1 µm to 5 µm are considered for classification purposes.

Cleanroom Classification

ISO 14644 (@0,5µm)	Maximum concentration limits for particles equal to and larger than the considered size shown below (particles/m ³)						Fed Std. 209 E (class) particles/ft ³
	0,1 µm	0,2 µm	0,3 µm	0,5 µm	1,0 µm	5,0 µm	
ISO Class 1	10	2					-
ISO Class 2	100	24	10	4			-
ISO Class 3	1.000	237	102	35	8		1
ISO Class 4	10.000	2.370	1.020	352	83		10
ISO Class 5	100.000	23.700	10.200	3.520	832	29	100
ISO Class 6	1.000.000	237.000	102.000	35.200	8.320	293	1000
ISO Class 7				352.000	83.200	2.930	10000
ISO Class 8				3.520.000	832.000	29.300	100000

ULPATEK Leak and Efficiency Test Systems

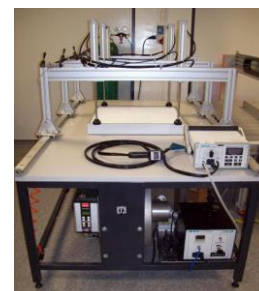
Ulpatek HEPA and ULPA filters are tested and certified individually according to European (CEN) and USA standards according to user requirements with the advanced technology. We would recommend the higher grades of prefilters to increase the service life of the Hepa and Ulpatek filters.



Oil Thread Test / EN1822-4



Scan Test / EN1822-4



DOP Test / ISPE