

FILTER PROTECTION LEVELS

Certification Standards globally outline a system for different levels of filtering efficiency or performance. The information below relates to the CleanSpace respirators, masks and filters.

Particulate Protection

All the CleanSpace Respirators and particulate and combination filters are all certified to P3 (AU/NZ) and TM3 (EN). CleanSpace particulate and combination filters with P3/TM3 are:

PAF-0035 PAF-0059	CleanSpace™ Particulate Filter EN12942 PAPR P3 TM3 P SL R (pack of 3 and pack of 24 filters)	Particulate filter; High efficiency; Fiberglass Pleated filter; Suitable for use against solid and liquid particulates including dusts, mists, fumes, fibres, bacteria and viruses. Included in PAF-0034
PAF-0037	CleanSpace™ Hi Capacity (HI CAP) Particulate Filter EN12942 PAPR P3 TM3 P SL R	High capacity particulate filter with four times the surface area of CleanSpace2™ standard particulate filter; High efficiency; pleated fiberglass filter; Suitable for use against solid and liquid particulates including dusts, mists, fumes, fibres, bacteria and viruses
PAF-0043 PAF-0053	CleanSpace™ Particulate Filter replacements pads for Combination filters PAPR P3 (pack of 3 or 8)	Particulate filter; High efficiency; Suitable for use against particulates including dusts, mists, fumes, fibres, bacteria and viruses. To be used with PAF-0046.

P3 grade of certification the protection level is defined as a **filtration efficiency of 99.95%**. In Europe the TM3 is represented as a **Protection Factor**. The Protection Factor is defined differently in each country. The table below outlines the Protection Factors in European countries for TM3:

Assigned Protection Factors EN12942		Nominal Protection Factor						
		Finland	France	Germany	Italy	Sweden	UK	
Respiratory protective devices - Power assisted filtering devices incorporating full face masks, half masks or quarter masks	TM1	20	10	10	10	10	10	10
	TM2	200	100	100	100	100	100	20
	TM3	2,000	1,000	500	500	400	1,000	40

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Gas and Vapour Protection

There are a number of combination (particulate and gas) filters available for the CleanSpace. These are listed below. All CleanSpace combination filters are certified to P3/TM3 (see above section for more information on the particulate protection levels).

Gas filters contain activated carbon treated so as to either absorb or adsorb specific gases and vapours. The different treatments of the carbon enable the filter to remove different contaminants from the air. Gas filters can also be classed by the amount of contaminants the filter can remove. The difference between a Class 1 and Class 2 filter is the capacity to contain contaminants. A Class 2 filter is generally physically larger than a Class 1 filter and contains more carbon by weight thereby enabling use in an environment containing a higher concentration of gas. The capacity to hold gas is best demonstrated by the required break through times for the filters. Break through is the point at which the carbon in the filter has been consumed and the filter is no longer capable of removing gas from the air and allows the gas to pass through the filter to the wearer.

The protection factor for the gas component of the combination filters is represented in the break through times of the various test gases below. Note. A2 class filter is required to have a breakthrough time of 70 minutes or higher for 1,000 ppm of test gas concentration.

PAF-0046 & PAF-0050 CLEANSACE A1: CONCENTRATION AND BREAKTHROUGH TIMES			
GAS TYPE	Concentration (PPM)	Breakthrough limit (min)	Breakthrough Actual (min)
A1 Cyclohexane	500	>=70	>95

PAF-0091 & PAF-0051 CLEANSACE ABE1: CONCENTRATION AND BREAKTHROUGH TIMES			
GAS TYPE	Concentration (PPM)	Breakthrough limit (min)	Breakthrough Actual (min)
A1 Cyclohexane	500	>=70	>80
B1 Chlorine – Cl ₂	500	>=20	>30
B1 Hydrogen sulphide – H ₂ S	500	>=40	>60
B1 Hydrogen cyanide - HCN	500	>=25	>40
E1 SO ₂	500	>=20	>30