CleanAIR®

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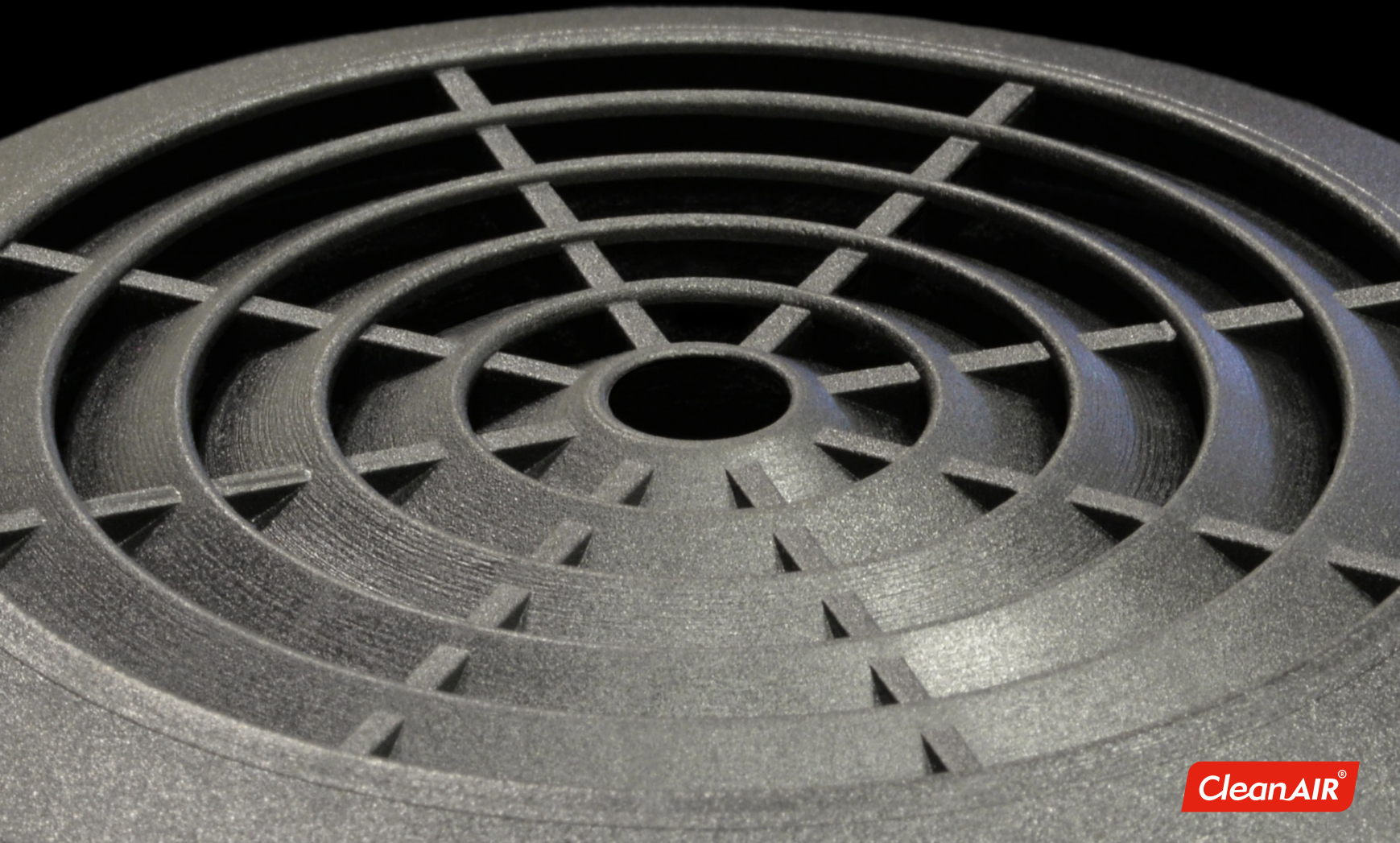
NA-075-R00

FILTER *guide*



CleanAIR®

CleanAIR® - Filter Selection Guide

This brochure aims to introduce you the most important factors you should bear in mind when choosing the proper filter. At the same time will help you to select the appropriate RPE (Respiratory Protective Equipment) based on the knowledge of NPF (Nominal Protection Factor) and WELs (Workplace Exposure Limits).

Please note, the information given by this brochure is intended only as a guide and thus the responsibility for correct filter selection remains with health and safety professionals at the workplace.

This guide should only be used in conjunction with general occupational hygiene knowledge.

IDENTIFICATION OF HAZARD / FILTER TYPES

Hazardous substances can be present in the air as particles (solid or liquid), vapour or gas. Under certain conditions, they can exist in more than one form at the same time (e.g. during paint spraying).

You need to identify the form of the substance in the air to select proper filter.

Form	Properties	Examples
Particulate contaminants	Solid particles: Particles of solid material, including aerosols, dusts, fibres, smokes and fumes	Asbestos fibres Engine exhaust particles and fume Lead dust and fume Stone and wooden dust Welding fume, smoke, fungal spores, viruses, flour and pollen
	Liquid particles: Fine sprays, mists and aerosols made up of small droplets of liquid	Sprayed liquids: Paints Pesticides Mists: Chrome acid Cutting fluids Oil mist
Gaseous contaminants	Vapours: Gaseous form of solids or liquids	Solvent vapour, mercury vapour, etc.
	Gases	Hydrogen cyanide, chlorine Engine exhaust gases Sewer gases Carbon monooxide, carbon dioxide

Three filter types available:

- Particle filters - additionally marked „R" or „NR" (reusable or non-reusable)
- Gas / vapour filters
- Combined filters

PARTICLE FILTERS - Particle filters trap and hold particles (solid and liquid aerosols including dust, mist, smoke, microorganisms) from the air flowing through. Particle filters are classified according to their efficiency and are marked with letter „P" followed with a number indicating efficiency, or the level of protection provided.

Particle filter classification according to EN 143

Class	Efficiency (%)	NPF	Maximum permitted penetration		Assigned protection factor*		
			NaCl	Paraffin oil	D	FIN	UK
P1	Low (80,00%)	5	20 %	20 %	4	4	4
P2	Medium (94,00%)	16	6 %	6 %	15	15	10
P3	High (99,95%)	2 000	0,05 %	0,05 %	500	400	40

** The value of assigned protection factor is taken from EN 529 and it is meant for combination with full face mask. Please note that the assigned protection factor may vary from country to country and you should always follow your local legislation.*

There are also filters certified dependently on a PAPR only (e.g. CleanAIR® AerGO®, D-Bug, Asbest, Basic EVO and Basic 2000) according to EN 12 941 and are marked "P R SL" instead of P3. All the currently manufactured CleanAIR® filters provide better efficiency than 99,95 %.

GAS / VAPOUR FILTERS - These filters are designed to remove gases or vapours as specified by the manufacturer. Gas / vapour filters are classified according to their capacity and the type of substance(s) they can be used against to. Their capacity refers to how much of the specified contaminant they can sorb (as measured in a laboratory test at set conditions). In general we can say, that gas filters of Class 2 may be used at higher concentrations or for a longer time than class 1 filters.

COMBINED FILTERS - Combined filters provide protection against both hazardous gases and vapours as well as particles.

Gas / combined filter capacity requirements

	EN 14 387 negative pressure respirators			EN 12 941, EN 12 942 powered air purifying respirators		
Classification	Class 1	Class 2	Class 3	Class 1	Class 2	Class 3
Capacity	LOW	MED	HIGH	LOW	MED	HIGH
Concentration of the test gas	0,1 %	0,5 %	1,0 %	0,05 %	0,1 %	0,5 %

Filter type	Test gas	Minimum breakthrough time			Minimum breakthrough time		
A	Cyclohexane C6H6	70 min	35 min	65 min	70 min	70 min	35 min
B	Chlorine Cl2	20 min	20 min	30 min	20 min	20 min	30 min
	Hydrogen sulphide H2S	40 min	40 min	60 min	40 min	40 min	40 min
	Hydrogen cyanide HCN	25 min	25 min	35 min	25 min	25 min	35 min
E	Sulphur dioxide SO2	20 min	20 min	30 min	20 min	20 min	20 min
K	Ammonia NH3	50 min	40 min	60 min	50 min	50 min	40 min

Special filters

Filter type	Test gas	Test gas concentration	Minimum allowed breakthrough time
AX	Dimethyl ether	0,05 v%	50 min
	Isobutane	0,25 v%	50 min
Hg-P3	Mercury, Hg vapour	1,6 ml/mg	100 hours
NOP	NO, NO_2	0,25 v%	20 min

CAUTION!

- Particle filters do not protect against gas or vapour
- Gas / vapour filters do not protect against particles
- Neither filter type can be used in oxygen-deficient atmospheres
- Note that particle filters are not effective against mist or spray of organic solvents

HOW LONG DOES THE FILTER LAST?

The service life of a filter depends on its size (active surface of particle filter media and/or volume of charcoal), conditions of use and following factors:

- Type, characteristics and concentration of the contaminants
- Breathing volume and work rate
- Air humidity
- Temperature

The minimum breakthrough times given are intended only for laboratory tests under standardized conditions. They do not give an indication of the possible service time of the filter in practical use. Possible service times can differ from the breakthrough times determined according to this document in both directions, positive and negative depending on the conditions of use.

The end of service life can be recognized by

Particle filter - Increased breathing resistance of the filter. Drop of the air flow, or triggering the „low airflow" alarm when used in combination with PAPR.

Gas filters - *A noticable taste or smell of the contaminant.

Combined filters - *A noticable taste or smell of the contaminant and/or increased breathing resistance of the filter. A noticable taste or smell of the contaminant and/or drop of the air flow, or triggering the „low airflow" alarm when used in combination with PAPR.

* Does not apply when the contaminant does have low warning properties

HOW TO SELECT PROPER RPE ACCORDING TO NPF?

1. **You need to know the concentration of the hazardous substance in a workplace**
2. **You need to know assigned Workplace Exposure Limit (WEL) – see the main table. The WELs listed in this guide are taken from HSE publication EH40/2005 Workplace Exposure Limits**

   WELs (Workplace Exposure Limits)
   WELs are occupational exposure limits (concentrations) of a specific airborne substance averaged over a reference period, to which workers may be exposed without experiencing significant adverse health effects. There are two reference periods for which the WELs may be set: 8-hour Time Weighted Average (TWA) and 15-minute Short Term Exposure Limit (STEL). If there are two values in the long term WEL, the first value is meant to the substance name before the slash and the second number behind the slash.

   TWA (Time Weighted Average) – 8 hours (long term)
   TWAs are set to help preventing health effects which require prolonged or accumulated exposure.

   STEL (Short Term Exposure Limit) – 15 minutes (short term)
   STELs are set to help prevents health effects which may be seen after short exposure (e.g. eye irritation that could occur after a few minutes)

   The absence of a substance from the list of WELs does not indicate that it is safe.
   For these substances, exposure should be controlled to a level to which nearly all the working population could be exposed, day after day at work, without any adverse effects on health.

3. **You need to determine the needed minimum protection factor of RPE**
   For example: Powered air purifying respirator incorporating a hood classified as TH3 according to EN 12 941 has a maximum inward leakage of 0,2 %. Therefore NPF= 100 (%) : 0,2 (%)= 500.

$$\textbf{Minimum protection factor} = \frac{\textbf{Concentration at the workplace}}{\textbf{WEL}} = \frac{\textbf{100}}{\textbf{2,5}} = \textbf{40}$$

Example:

Contaminant:	Acetic anhydride (gas protection needed)
Concentration at the workplace	100 mg / m^3
WEL	2,5 mg / m^3

Nominal protection factor (NPF)
Theoretical level of protection of Respiratory Protective Equipment calculated using performance data measured in the laboratory. It indicates the mathematically calculated maximum breathing protection performance. Calculated by dividing 100 by the total value of maximum inward leakage as specified in the relevant standard.

Table: List of respiratory protective devices
Nominal protection factors (NPF) and assigned protection factors used in different countries

Description / Device	Class	NPF	Assigned Protection Factors (used in some countries)				
			FIN	D	I	S	UK
Filter half mask	FF P1	4	4	4	4	4	4
	FF P2	12	10	10	10	10	10
EN 149	FF P3	50	20	20	20	20	20
Half mask and quarter mask with filter	P1	4	4	4	4	4	4
	P2	12	10	10	10	10	10
	P3	48		30	30		20
	GasX	50	20	30	30	20	30
EN 140	GasX P1	4					
Filters EN 141; EN 372 EN 143; EN 14 387 EN 371; EN 12 083	GasX P2	12					
	GasX P3	48		30			10
Full face mask (all classes)	P1	5	4	4	4	4	4
	P2	16	15	15	15	15	15
	P3	2000	500	400	400	500	40
	GasX	2000	500	400	400	500	40
EN 136	GasX P1	5					
Filters EN 141; EN 372 EN 143; EN 14 387 EN 371; EN 12 083	GasX P2	16					
	GasX P3	2000		400			20
PAPR with helmet or hood	TH1	10	5	5	5	5	5
	TH2	50	20	20	20	20	20
EN 12 941	TH3	500	200	100	200	200	40
PAPR with quarter/half or full face mask (power on)	TM1	20	10	10	10	10	10
	TM2	200	100	100	100	100	20
EN 12 942	TM3	2000	1000	500	400	1000	40
Continuous flow compressed airline breathing apparatus	1A / 1B	10					
	2A / 2B	50					
	3A / 3B	200					
EN 14 594	4A / 4B	2000					

WHAT IS THE MAXIMUM CONCENTRATION OF THE CONTAMINANT FOR WHICH I CAN USE RESPIRATORY PROTECTION?

You can determine the maximum permissible concentration by multiplying the nominal protection factor (as found in the NPF table) by the Workplace Exposure Limit

CAUTION!
In the case where the contaminants are present in both particle and gas form, the neccesary NPF must be established for each one separately and the higher protection factor must be applied.

The concentration of gases is measured in ppm (parts per million = volume of the substance within 1 m^3 of air) or mg/m^3 (= weight of the substance within 1 m^3 of air) and the concentration of particles (dust) only in mg/m^3.

While mg/m^3 deals with weight and ppm with volume, there is no direct calculation for mg/m^3 to ppm. Higher concentrations are often indicated in % by volume, 10 000 ppm = 1 vol. %.

GENERAL LIMITATIONS FOR USE OF FILTERING RPD

Do not use in the following environments or situations:

- Oxygen deficient atmosphere, i.e. < 17 %.
  (CleanAIR® definition. Individual countries may apply their own limits on oxygen deficiency)
- Oxygen only or oxygen-enriched atmosphere.
- In atmospheres where the concentrations of the toxic contaminants (type, properties, concentration and composition of the hazardous agent) are unknown.
- Concentrations of contaminants are immediately dangerous to life or health (IDLH).
- In poorly ventilated areas or confined spaces, such as containers, tanks, small rooms, tunnels, or vessels.
- Atmosphere with mixed chemical substances (except for multi-gas filter, e.g. ABEK filter).
- Filters that show signs of damage.
- Gases, vapours and particles which cannot be removed by filter.

CAUTION!

The hazards in your environment must be known, as well as the work requirements and the external conditions. Additionally you must take into consideration the protection level required by your respirator – as well as the type and protection level of the necessary filter.

Immediately leave the area if:

- breathing resistance increases noticeably
- you began to feel dizzy
- you smell, taste, or become irritated by the contaminant
- your respirator is damaged

Make sure that:

- the selected respirator fits properly
- if both gases and particles are present, that you use a combined filter, to filter out both gases and particles**.**

Special filters limitation

- AX filters are for single shift use only.
- CO filters for one time use only. Must be disposed after use.
  Special guidelines according to local regulations apply.
- Hg filters can only be used for a maximum of 50 hours.
- NO filters for single shift use only. Must be disposed after use.
- Reactor filters: apply special guidelines according to local regulations.

List of Shortcuts used in the Main Table

APF	Assigned Protection Factor is the level of protection a respirator can be expected to provide if it is functioning properly and the user is wearing it correctly. APF is scored via a number, allowing users to gage how much contaminant they are expected to inhale while wearing the respirator.
Carc.	Carcinogenic
CNS	Central Nervous System
EN	European Standard
IDLH	Immediately Dangerous to Life and Health as exposure to airborne contaminants that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment.
NPF	Nominal Protection Factor this level of protection is unlikely to be achieved in real use situations, since the testing is carried out in a laboratory situation and does not give a good estimate of the effectiveness of the respirator
OEL	Occupational Exposure Limits (EU) is an upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials. It is typically set by competent national authorities and enforced by legislation to protect occupational safety and health.
PAPR	Powered Air Purifying Respirator
PPE	Personal Protective Equipment
PEL	Permissible Exposure Limits is a legal limit in the United States for exposure of an employee to a chemical substance
RPE	Respiratory Protective Equipment
SA	Supplied Air
Sen.	Respiratory Sensitiser is a substance which when inhaled can trigger an irreversible allergic reaction in the respiratory system. Once this sensitisation reaction has taken place, further exposure to the substance, even to the tiniest trace, may produce symptoms. Breathing in the substances may irritate and cause damage to the nose, throat and lungs. Sensitisation does not usually occur right away. It generally develops after several months or even years of breathing in the sensitiser/substance.
Sk	Substance may pass through intact skin
STEL	Short Term Exposure Limit is the acceptable average exposure over a short period of time, usually 15 minutes as long as the time-weighted average is not exceeded.
TWA	Time Weighted Average is used to calculate a workers daily exposure to a hazardous substance (such as chemicals, dusts, fumes, mists, gases, or vapors) or agent (such as occupational noise), averaged to an 8-hour workday, taking into account the average levels of the substance or agent and the time spent in the area.
WEL	Workplace Exposure Limit is expressed as a time weighted average (TWA) and there are two variations, the Long Term Exposure Limit (LTEL) which is the maximum exposure permitted over an 8-hour period and the Short Term Exposure Limit (STEL) which is the maximum exposure permitted over a 15-minute reference period.

For even more specific information, please follow the standard: EN 529 - Respiratory protective device - Recommendations for selection, use, care and maintenance - Guidance document

Table: Quick selection of the filter

Work activity		Filter class
Spraying	Solvent-based varnishes	AP
	Synthetic lacquers	AP
	Isocyanate colors	AP
	Dispersion paint	AP
	Agricultural pesticides and insecticides	AP
Handling of these substances	Fungi / spores from mushrooms	P
	Bacteria, Viruses	P
	Soot from diesel / smoke	P
	Cleaning with technical petrol/gasoline	AP
	Adhesive glue with organic soluble content	AP
	Acidic gases like H_2S, SO_2 and HCl	BEP
	Sulfur dioxide	ABEP
	Hydrochloric acid (hydrochloric acid)	ABEP
	Mixture of solid and liquid feces	ABEKP
	Ammonia	ABEKP
	Storage / transport of dangerous substances	ABEKP
	Mercury and its compounds	ABEKHgP
Other	Asbestos remediation	P
	Industrial dust	P
	MIG & MAG welding / plasma cutting	P

Table: Filter selection based on a welding method

Material to be welded	Well ventilated environment	Environment with limited ventilation	Restricted space
Aluminium	P	ABEP	SA
Stainless steel	P	ABEP	SA
Steel non-coated, lead based painted or galvanised	P	SA	SA
Steel coated with 2-component paints or cleaned with trichloroethylene	SA	SA	SA

When there is a significant presence of an ozone in the atmosphere, always use ABEP filter or supplied air (SA).

REFERENCES

EN 529
EN 143
EN 14 387
EN 12 941
EN 12 942
EH40/2005

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL						
A1P R SL 30 03 57	PRSL	A1					
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Acetaldehyde Ethanal; Acetic aldehyde	AX	75-07-0	20	37	50	92	10000	Eye, skin & respiratory irritant; Short organic vapor service life; Single shift only
Acetic anhydride Ethanoic anhydride; Acetic acid anhydride; Acetyl oxide; Acetyl acetate	A	108-24-7	0,5	2,5	2	10	1000	Eye, skin & respiratory irritant
Acetone 2-Propanone; Dimethyl ketone; Ketone propane; Propan-2-one	AX	67-64-1	500	1210	1500	3620	20000	Single shift only; CNS
Acetonitrile Methylcyanide; Cyanomethane	SA	75-05-8	40	68	60	102	4000	Eye, skin & respiratory irritant; Poor warning properties; Asphyxiant; Sk; CNS
O-Acetylsalicylic acid 2-acetyloxybenzoic acid, Aspirin	P	50-78-2	-	5	-	-	-	Eye, skin & respiratory irritant
Acrylaldehyde Acrolein; Acrylic aldehyde; Allylaldehyde; Prop-2-enal	AX	107-02-8	0,1	0,23	0,3	0,7	5	Eye, skin & respiratory irritant; Single shift only; Heart
Acrylamide Propenamide; Acrylamide monomer; Prop-2-enamide, 2-propenamide	AP	79-06-1	-	0,3	-	-	-	Carc.; Sk
Acrylonitrile Prop-2-enentrile; Propenenitrile; Vinyl cyanide	SA	107-13-1	2	4,4	-	-	500	Poor warning properties; Carc.; Sk
Allyl alcohol 2-propen-1-ol; Vinyl carbinol	A	107-18-6	2	4,8	4	9,7	150	Eye, skin & respiratory irritant; Sk
Aluminium metal - inhalable / respirable dust (powder)	P	7429-90-5	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Aluminium oxides - inhalable / respirable dust Alpha-alumina	P	1344-28-1	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Aluminium chlorohydrate	P	-	-	2	-	-	-	-
2-Aminoethanol Ethanolamine; Ethylolamine; 2- Hydroxethylamine Monoethanolamine	A	141-43-5	1	2,5	3	7,6	1000	Eye, skin & respiratory irritant; CNS
Ammonia, anhydrous Anhydrous ammonia; Azane; Ammonia gas	K	7664-41-7	25	18	35	25	500	Eye, skin & respiratory irritant
Ammonium chloride (fume) Ammonium muriate (fume); Salmiac	KP	12125-02-9	-	10	-	20	-	Eye, skin & respiratory irritant
Ammonium sulphamidate Ammonium sulfamate	P	7773-06-0	-	10	-	20	-	Eye, skin & respiratory irritant
Aniline Aminobenzene; Phenylamine; Aniline oil; Benzenamine	A	62-53-3	1	4	-	-	100	Eye, skin & respiratory irritant; Blood
Antimony and compounds except stibane (as Sb)	P	-	-	0,5	-	-	80 mg/m^3	Eye, skin & respiratory irritant
Antimony hydride (Stibine)	B	7803-52-3	-	0,1	-	-	-	-
r-Aramid respirable fibres p-Aramid, kevlar	P	26125-61-1	0,5 fib./ml	-	-	-	-	-
Arsenic and arsenic compounds except arsine (as As)	P	-	-	0,1	-	-	100 mg/m^3	Respiratory irritant; Carc.
Arsine Hydrogen arsenide; Arsenic trihydride; Arsane	SA	7784-42-1	0, 05	0,16	-	-,	6	Eye irritant; Poor warning properties; Unknown sorbent effectiveness; Carc.
Asphalt - petroleum fumes	AP	8052-42-4	-	5	-	10	-	„P" alone may be suitable for some applications
Azodicarbonamide Azodicarboxamide, (E)-carbamoyliminourea	P	123-77-3	-	1	-	3	-	Sen.
Barium (soluble compounds as Ba)	P	7440-39-3	-	0,5	-	-	1100 mg/m^3	Eye, skin & respiratory irritant; Blood; Heart
Barium sulphate - inhalable / respirable dust	P	7727-43-7	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant; Blood; Heart
Benzene Benzol; Cyclohexatriene	SA	71-43-2	1	3,25	-	-	3000	Poor warning properties; Carc.; Sk
Benzyl butyl phthalate	AP	85-68-7	-	5	-	-	-	-

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

	P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2						
B2 50 01 61				B2				
K2 50 01 59						K2		
A2B2 50 01 58		A2		B2				
A2B2E2 50 01 63		A2		B2	E2			
A2B2E2K2 50 01 69		A2		B2	E2	K2		

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1						
A2P3 50 01 57	P3	A2						
A3AXP3 50 01 70	P3	A3	AX					
B2P3 50 01 62	P3			B2				
K2P3 50 01 60	P3					K2		
A2B2P3 50 01 67	P3	A2		B2				
A2B2E2P3 50 01 64	P3	A2		B2	E2			
A1B1E1P3 50 03 64	P3	A1		B1	E1			
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2		
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg	

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL							
A1P R SL 30 03 57	PRSL	A1						
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1			

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Benzyl chloride Chloromethylbenzene	**E**	100-44-7	0,5	2,6	1,5	7,9	-	Eye, skin & respiratory irritant; Carc.; Sk
Beryllium and beryllium compounds (as Be)	**P**	7440-41-7	-	0,002	-	-	10 mg/m^3	Carc.
Bis-(2-Ethylhexyl) phthalate Di-sec-octyl phthalate; DOP; Di-2-ethylhexyl phthalate; DEHP	**AP**	117-81-7	-	5	-	10	-	Eye irritant
Bis-(chloromethyl) ether Dichloromethylether; BCME; Chloro (chloromethoxy) methane	**SA**	542-88-1	0,001	0,005	-	-	-	Eye, skin & respiratory irritant; Warning properties unknown; Carc.
Bisphenol A inhalable dust 4,4-Isopropylidenediphenol; 4,4-(propane-2,2-diyl)diphenol	**P**	80-05-7	-	10	-	-	-	Eye, skin & respiratory irritant
Bornan-2-one Camphor; 2-Camphanone; Gum camphor; Laurel camphor	**AP**	76-22-2	2	13	3	19	33	Eye irritant
Boron tribromide Boron bromide; Tribromoborane	**SA**	10294-33-4	-	-	1	10	-	Eye, skin & respiratory irritant; Warning properties unknown
Bromacil (ISO) Bromazil, Hyvar X	**AP**	314-40-9	1	11	2	22	-	Eye, skin & respiratory irritant
Bromine Dibromine, Brom	**BP**	7726-95-6	0,1	0,66	0,2	1,3	10	Eye, skin & respiratory irritant; CNS
Bromomethane Methyl bromide	**AX**	74-83-9	5	20	15	59	2000	Eye, skin & respiratory irritant; Single shift only; Sk
Butane n-Butane	**AX**	106-97-8	600	1450	750	1810	-	Eye, skin & respiratory irritant; Single shift only
Buta-1,3,diene 1,3-Butadiene; Divinyl; Biethylene; Erythrene	**AX**	106-99-0	10	22	-	-	20000	Eye, skin & respiratory irritant; Single shift only; Carc.
Butan-1-ol 1-Butanol; Propylcarbinol; n-Butanol; n-Butyl alcohol	**A**	71-36-3	-	-	50	154	8000	Eye, skin & respiratory irritant; Sk
Butan-2-ol 2-Butanol; sec-Butyl alcohol; Methyl ethyl carbinol	**A**	78-92-2	100	308	150	462	10000	Eye, skin & respiratory irritant
Butan-2-one Methyl ethyl ketone; 2-Butanone	**A**	78-93-3	200	600	300	899	3000	Eye, skin & respiratory irritant; Sk
2-Butoxyethanol Ethyleneglycol monobutylether	**AP**	111-76-2	25	123	50	246	700	Eye, skin & respiratory irritant; Sk
2-(2-Butoxyethoxy)ethanol Diethylene Glycol Monobutyl Ether	**A**	112-34-5	10	67,5	15	101,2	-	Eye & skin irritant
2-Butoxyethyl acetate	**SA**	112-07-2	20	133	50	332	-	Eye, skin & respiratory irritant; Sk; CNS
n-Butyl acrylate 2-Propenoic acid butyl ester; Butyl-2-propenoate; Butyl prop-2-enoate	**A**	141-32-2	1	5	5	26	-	Eye, skin & respiratory irritant
n-Butyl chloroformate Butyl carbonochloridate	**A**	592-34-7	1	5,7	-	-	-	Eye, skin & respiratory irritant
Sec-Butyl acetate 1-Methylpropylacetate; Butan-2-yl acetate	**AP**	105-46-4	200	966	250	1210	10000	Eye, skin & respiratory irritant; CNS
Tert-Butyl acetate Acetic acid tert-butyl ester	**A**	540-88-5	200	966	250	1210	10000	Eye, skin & respiratory irritant; CNS
Butyl acetate n-Butyl acetate; Butyl ethanoate; Acetic acid butyl ester	**A**	123-86-4	150	724	200	966	10000	Eye, skin & respiratory irritant; CNS
Butyl lactate n-Butyl lactate; Lactic acid butylester; Butyl 2-hydroxypropanoate	**AP**	138-22-7	5	30	-	-	-	Eye, skin & respiratory irritant; CNS
2-sec-Butylphenol o-sec-Butylphenol; 2-butan-2-ylphenol	**A**	89-72-5	5	31	-	-	-	Sk
Cadmium and cadmium compounds except cadmium oxide fume Cadmium sulphide and cadmium sulphide pigments (as Cd)	**P**	-	-	0,025	-	-	50 mg/m^3	Carc. (cadmium metal, cadmium chloride, fluoride & sulphate)
Cadmium oxide fume (as Cd) Oxocadmium	**P**	1306-19-0	-	0,025	-	0,05	9 mg/m^3	Carc.; Pulmonary edema
Cadmium sulphide and cadmium sulphide pigments (respirable dust)	**P**	-	-	0,03	-	-	-	Carc.

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3					K2	
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL						
A1P R SL 30 03 57	PRSL	A1					
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Caesium hydroxide Cesium hydrate; Cesium hydroxide	P	21351-79-1	-	2	-	-	-	Eye, skin & respiratory irritant
Calcium carbonate - inhalable / respirable dust Marble; Limestone	P	1317-65-3	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Calcium cyanamide Lime nitrogen; Calcium carbimide	P	156-62-7	-	0,5	-	1	-	Eye, skin & respiratory irritant
Calcium hydroxide Hydrated lime; Caustic lime; Calcium dihydroxide; Slaked lime	P	1305-62-0	-	5	-	-	-	Eye, skin & respiratory irritant
Calcium oxide Quicklime; Pebble lime; Burnt lime	P	1305-78-8	-	2	-	-	-	Eye, skin & respiratory irritant
Calcium silicate - inhalable / respirable dust	P	1344-95-2	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Captan (ISO)	AP	133-06-2	-	5	-	15	-	Eye, skin & respiratory irritant
Graphitized carbon black Channel black; Lamp black; Furnace black; Thermal black; Acetylene black	P	1333-86-4	-	3,5	-	7	-	Eye & respiratory irritant
Carbon dioxide Carbonic acid gas; Dry ice; Carbonic anhydride	SA	124-38-9	5000	9150	15000	27400	50000	Eye, skin & respiratory irritant (dry ice); Respiratory (gas); Poor warning properties; Ineffective sorbents
Carbon disulphide Carbon bisulphide	BP	75-15-0	5	15	-	-	500	Sk; Cardio.; CNS
Carbon monoxide Monoxide; Carbonic oxide	SA	630-08-0	30	35	200	232	1500	Very poor warning properties; Ineffective sorbents
Carbon tetrachloride Tetrachloromethane; Perchlormethane	SA	56-23-5	2	13	-	-	300	Eye & skin irritant; Poor warning properties; Carc.; Sk; CNS
Cellulose (pure) - inhalable / respirable dust Paper fiber; Cellulose powder; Cotton linters	P	9004-34-6	- -	10 4	- -	20 -	-	Eye irritant
Chlorine Molecular chlorine	B	7782-50-5	-	-	0,5	1,5	30	Eye, skin & respiratory irritant; CNS
Chlorine dioxide Chlorine peroxide; Chlorine (IV) oxide	SA	10049-04-4	0,1	0,28	0,3	0,84	10	Eye, skin & respiratory irritant; Poor warning properties
Chloroacetaldehyde 2-Chloroethanal; 2-chloroacetaldehyde	SA	107-20-0	-	-	1	3,3	100	Eye, skin & respiratory irritant; Poor warning properties
2-Chloroacetophenone 2-chloro-1-phenylethanone	AP	532-27-4	0,05	0,32	-	-	-	Eye, skin & respiratory irritant; Pulmonary edema
Chlorobenzene Monochlorobenzene; Chlorobenzol; Phenyl chloride	A	108-90-7	1	4,7	3	14	2400	Eye, skin & respiratory irritant; Sk; CNS
Chlorodifluoromethane Freon™ 22; Fluorocarbon 22	SA	75-45-6	1000	3590	-	-	-	Respiratory irritant; Warning properties unknown; Ineffective sorbents; CNS
Chloroethane Ethyl chloride; Monocloroethane; Hydrochloric ether	AX	75-00-3	50	134	-	-	-	Single shift only; CNS
2-Chloroethanol Ethylene chlorohydrin; 2-Chloroethyl alcohol	A	107-07-3	-	-	1	3,4	10	Sk; CNS
1-Chloro-2,3-epoxypropane Epichlorohydrin; 2-Chloropropylene oxide; g-Chloropropylene oxide	SA	106-89-8	0,5	1,9	1,5	5,8	250	Eye irritant; Poor warning properties; Carc.; Sk
Chloroform Trichloromethane	SA	67-66-3	2	9,9	-	-	1000	Eye irritant; Poor warning properties; Carc.; Sk; CNS
Chloromethane Methyl chloride	SA	74-87-3	50	105	100	210	10000	Sk; CNS
1-Chloro-4-nitrobenzene 4-Chloronitrobenzene; p-Chloronitrobenzene; p-Nitrochlorobenzene	AP	100-00-5	-	1	-	2	344	Sk
Chlorosulphonic acid ChloroSulphuric acid; Sulphonic acid; Sulfurochloridic acid	BP	7790-94-5	-	1	-	-	-	Eye irritant
Chlorpyrifos (ISO)	AP	2921-88-2	-	0,2	-	0,6	-	Sk; CNS
Chromium Chromium (II) compounds (as Cr); Chromium (III) compounds (as Cr)	P	7440-47-3	-	0,5	-	-	-	Eye, skin & respiratory irritant

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	P R SL						
A1P R SL 30 03 57	P R SL	A1					
A1B1E1P R SL 30 03 64	P R SL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	P R SL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	P R SL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Chromium (VI) compounds (as Cr)	P	-	-	0,05	-	-	-	Eye irritant; Carc.; Sen.
Cobalt and Cobalt compounds (as Co)	P	-	-	0.1	-	-	20 mg/ m^3	Carc. (cobalt dichloride and sulphate); Sen.
Copper fume (as Cu)	P	7440-50-8	-	0,2	-	-	-	Eye, skin & respiratory irritant
Copper and compounds dust and mists (as Cu)	P	7440-50-8	-	1	-	2	-	Eye, skin & respiratory irritant
Cotton dust	P	-	-	2,5	-	-		Respiratory irritant; Cardio.
Cryofluorane (Freon™ 114) / (Halon™ 242) Refrigerant 114; FC-114; 1,2-dichloro-1,1,2,2-tetrafluoroethane	SA	76-14-2	1000	7110	1250	8890	50000	Respiratory irritant; Poor warning properties; Asphyxiant; Cardio.
Cumene Isopropyl benzene; 2-Phenyl propane; Cumol	A	98-82-8	25	125	50	250	8000	Eye irritant; Sk
Cyanamide Cyanogenamide; Carbodiimide	P	420-04-2	0,58	1	-	-	-	Eye, skin & respiratory irritant; Sk
Cyanides, except HCN, cyanogen and cyanogen chloride (as CN)	BP	57-12-5	-	5	-	-	50 mg/m^3	Warning properties unknown; Sk
Cyanogen chloride CNCl	SA	506-77-4	-	-	0,3	0,77	-	Eye, skin & respiratory irritant; Poor warning properties
Cyclohexane Hexahydrobenzene; Hexamethylene	A	110-82-7	100	350	300	1050	10000	Eye, skin & respiratory irritant; CNS
Cyclohexanol Hexalin; Hydralin; Hexahydrophenol; Hydroxycyclohexane; Anol; Cyclohexyl alcohol	A	108-93-0	50	208	-	-	3500	Eye, skin & respiratory irritant; CNS
Cyclohexanone Pimelic ketone; Cyclohexyl ketone	A	108-94-1	10	41	20	82	5000	Eye & skin irritant; Sk; CNS
Cyclohexylamine Hexahydroaniline; Aminocyclohexane; Cyclohexanamine	A	108-91-8	10	41	-	-	-	Eye, skin & respiratory irritant; CNS
2,4 D (ISO) 2-(2,4-dichlorophenoxy)acetic acid	AP	94-75-7	-	10	-	20	-	Skin irritant; CNS
Dialkyl 79 phthalate Dialkylphthalate C7-C9, Phthalic acid, dialkyl(C7-9) ester	P	83968-18-7	-	5	-	-	-	-
Diallyl phthalate	AP	131-17-9	-	5	-	-	-	-
Diatomaceous earth, natural, respirable dust Diatomite; Dioxosilane; Silicon dioxide	P	61790-53-2	-	1,2	-	-	-	Eye & respiratory irritant; Pneumoconiosis
Dibenzoyl peroxide Benzoyl peroxide; Benzoyl benzenecarboperoxoate	AP	94-36-0	-	5	-	-	7000 mg/m^3	Eye, skin & respiratory irritant
Dibismuth tritelluride Bismuth telluride	P	1304-82-1	-	10	-	20	-	-
Diboron trioxide Anhydrous boric acid; Boric anhydride; Boron oxide; oxo(oxoboranyloxy)borane	P	1303-86-2	-	10	-	20	-	Eye, skin & respiratory irritant
1,2-Dibromoethane Ethylene dibromide	A	106-93-4	0,5	3,9	-	-	400	Eye, skin & respiratory irritant; Carc.; Sk
Dibutyl hydrogen phosphate Dibutyl acid-o-phosphate; Di-n-butyl hydrogen phosphate; Dibutyl phosphoric acid	AP	107-66-4	1	8,7	2	17	125	Eye, skin & respiratory irritant
Dibutyl phthalate Dibutyl benzene-1,2-dicarboxylate	AP	84-74-2	-	5	-	10	9300 mg/m^3	Eye & respiratory irritant
Dichloroacetylene Dichloroethyne	SA	7572-29-4	-	-	0,1	0,39	-	Eye irritant; Warning properties unknown; CNS
1,2-Dichlorobenzene ortho-dichlorobenzene; o-Dichlorobenzene; o-Dichloro-Benzol	A	95-50-1	25	153	50	306	1000	Eye, skin & respiratory irritant; Sk
1,4-Dichlorobenzene para-dichlorobenzene; p-Dichlorobenzene; Dichloricide	A	106-46-7	25	153	50	306	1000	Eye & respiratory irritant
1,3-Dichloro-5,5-dimethyl-hydantoin Halane; Dactin	ABEP	118-52-5	-	0,2	-	0,4	-	Eye & respiratory irritant

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

	A	AX	B	E	K	Hg	SX
A2 50 01 56	A2						
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58	A2		B2				
A2B2E2 50 01 63	A2		B2	E2			
A2B2E2K2 50 01 69	A2		B2	E2	K2		

Combined filters with RD40*1/7" thread

	P3	A1	A2	A3	AX	B1	B2	E1	E2	K1	K2	Hg
A1P3 50 03 57	P3	A1										
A2P3 50 01 57	P3		A2									
A3AXP3 50 01 70	P3			A3	AX							
B2P3 50 01 62	P3						B2					
K2P3 50 01 60	P3										K2	
A2B2P3 50 01 67	P3		A2				B2					
A2B2E2P3 50 01 64	P3		A2				B2		E2			
A1B1E1P3 50 03 64	P3	A1				B1		E1				
A2B2E2K2P3 50 01 68	P3		A2				B2		E2		K2	
A2B2E2K2HgP3 50 01 66	P3		A2				B2		E2		K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

	PRSL	A1	B1	E1
P R SL 30 00 10/2	PRSL			
A1P R SL 30 03 57	PRSL	A1		
A1B1E1P R SL 30 03 64	PRSL	A1	B1	E1

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
1,1-Dichloroethane Ethylidene chloride	SA	75-34-3	100	-	-	-	4000	Eye, skin & respiratory irritant; Poor warning properties; Sk; CNS
1,2-Dichloroethane Ethylene Dichloride; Ethylene chloride	SA	107-06-2	5	21	-	-	1000	Poor warning properties; Carc.; Sk; CNS
1,2-Dichloroethylene , cis:trans isomers 60:40 Acetylene dichloride; Dioform	AX	540-59-0	200	806	250	1010	4000	Eye, skin & respiratory irritant; Single shift only; Short organic vapor service life; CNS
Dichlorofluoromethane Refrigerant 21; Freon™ 21	SA	75-43-4	10	43	-	-	50000	Warning properties unknown; Asphyxiant; Cardio.
Dichloromethane Methylene chloride	SA	75-09-2	100	350	300	1060	5000	Eye & skin irritant; Carc.; Sk
2,2'-Dichloro-4,4'-methylene-dianiline (MbOCA) 4,4'-Methylene-bis-(2-chlorobenzamine); 4,4'-Methylene-bis-(2-chloraniline)	AP	101-14-4	-	0,005	-	-	-	Warning properties unknown; Carc.; Sk
Dicyclohexyl phthalate Dicyclohexyl benzene-1,2-dicarboxylate	AP	84-61-7	-	5	-	-	-	-
Dicyclopentadiene	AP	77-73-6	5	27	-	-	-	Eye, skin & respiratory irritant; CNS
Diethylamine N-ethylethanamine	K	109-89-7	5	15	10	30	-	Eye, skin & respiratory irritant
Diethyl ether Ethyl ether; Ethyl oxide; Ether	AX	60-29-7	100	310	200	620	19000	Eye, skin & respiratory irritant; Single shift only; Short organic vapor service life; CNS
Diethyl phthalate Ethylphthalate; Phthalic acid diethyl ester	AP	84-66-2	-	5	-	10	-	Eye & skin irritant; CNS
Diethyl sulphate Diethyl sulfate	ABP	64-67-5	0,05	0,32	-	-	-	Carc.; Sk
Dihydrogen selenide (as Se) Selenium hydride; Hydrogen selenide (as Se)	SA	7783-07-5	0,02	0,07	0,05	0,17	2	Eye, skin & respiratory irritant; Poor warning properties
Diisobutyl phthalate bis(2-methylpropyl) benzene-1,2-dicarboxylate	AP	84-69-5	-	5	-	-	-	Sk.
Diisodecyl phthalate bis(8-methylnonyl) benzene-1,2-dicarboxylate	AP	26761-40-0	-	5	-	-	-	-
Diisononyl phthalate bis(7-methyloctyl) benzene-1,2-dicarboxylate	AP	28553-12-0	-	5	-	-	-	-
Diisooctyl phthalate bis(6-methylheptyl) benzene-1,2-dicarboxylate	AP	27554-26-3	-	5	-	-	-	-
Diisopropylamine N-propan-2-ylpropan-2-amine	K	108-18-9	5	21	-	-	1000	Eye, skin & respiratory irritant; Sk.; CNS
Diisopropyl ether Isopropyl ether	A	108-20-3	250	1060	310	1310	10000	Eye & skin irritant; CNS
N,N-Dimethylacetamide Dimethyl acetamide	SA	127-19-5	10	36	20	72	400	Eye, skin & respiratory irritant; Poor warning properties; Sk; CNS
N,N-Dimethylaniline Dimethylaniline	A	121-69-7	5	25	10	50	100	Blood; Cardio.; Sk; CNS
N,N-Dimethylethylamine N,N-dimethylethanamine	K	598-56-1	10	30	15	46	-	-
Dimethyloxymethane Methylal; Methyl formal; Formal; Dimethylacetal formaldehyde; Dimethoxymethane	AX	109-87-5	1000	3160	1250	3950	15000	Eye, skin & respiratory irritant; Warning properties unknown; Single shift only; CNS
Dimethylamine Anhydrous	K	124-40-3	2	3,8	6	11	2000	Eye & respiratory irritant
2-Dimethylaminoethanol	SA	108-01-0	2	7,4	6	22	-	-
Dimethyl ether Methyl ether; Wood ether; Methoxymethan	AX	115-10-6	400	766	500	958	-	Single shift only; Short organic vapor service life
N,N-Dimethylformamide Dimethylformamide; DMF	SA	68-12-2	5	15	10	30	3500	Eye, skin & respiratory irritant; Poor warning properties; Sk
2,6-Dimethylheptan-4-one Diisobutyl ketone; 2,6-Dimenthyl-4-heptanone; sym-Diisopropylacetone; Isovalerone; Valerone	A	108-83-8	25	148	-	-	2000	Eye & skin irritant; CNS

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL						
A1P R SL 30 03 57	PRSL	A1					
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Dimethyl phthalate Dimethyl benzene-1,2-dicarboxylate	P	131-11-3	-	5	-	10	9300 mg/m3	Eye & respiratory irritant
Dimethyl sulphate Sulfuric acid dimethyl ester	AP	77-78-1	0,05	0,26	-	-	10	Eye irritant; Warning properties unknown; Carc.; Sk; CNS
Dinitrobenzene - all isomers	AP	25154-54-5	0,15	1	0,5	3,5	29	Sk
Dinonyl phthalate Dinonyl benzene-1,2-dicarboxylate	P	84-76-4	-	5	-	-	-	-
1,4-Dioxane Dioxane; Diethylene dioxide; p-Dioxane; Diethylene ether	AP	123-91-1	20	73	-	-	2000	Eye & skin irritant; Sk; Carc.
Diphenylamine N-phenylaniline	AP	122-39-4	-	10	-	20	-	Eye & skin irritant
Diphenyl ether (vapour) Phenyl ether; Diphenyl oxide	AP	101-84-8	1	7,1	-	-	-	Eye & skin irritant
Diphosphorus pentasulphide Phosphorus pentasulphide; Phosphoric sulphide	BP	1314-80-3	-	1	-	2	750 mg/m3	Eye, skin & respiratory irritant
Disphosphorus pentoxide	P	1314-56-3	-	1	-	2	-	Eye, skin & respiratory irritant
Diquat dibromide (ISO)	P	85-00-7	-	0,5	-	1	-	-
Disodium disulphite Sodium pyrosulphite; Sodium metabisulphite	P	7681-57-4	-	5	-	-	-	Eye, skin & respiratory irritant
Disodium tetraborate - anhydrous Borates, tetra sodium salts - anhydrous	P	1330-43-4	-	1	-	-	-	Eye, skin & respiratory irritant
Disodium tetraborate - decahydrate Borates, tetra sodium salts - decahydrate	P	1330-96-4	-	5	-	-	-	Eye, skin & respiratory irritant
Disodium tetraborate - pentahydrate Borates, tetra sodium salts - pentahydrate	P	11130-12-4	-	1	-	-	-	Eye, skin & respiratory irritant
Disulphur dichloride Sulphur monochloride; Sulphur chloride; Sulphur subchloride	BP	10025-67-9	-	-	1	5,6	10	Eye, skin & respiratory irritant
2,6-Di-tert-butyl-p-cresol (Butylated hydroxytoluene) BHT; 2,6-Ditertiary-butyl-para-cresol; 2,6-ditert-butyl-4-methylphenol	P	128-37-0	-	10	-	-	-	Eye & skin irritant
6,6'-Di-tert-butyl-4,4'-thiodi-m-cresol 4,4'-Thiobis(6-tert-butyl-m-cresol); 4,4'-Thiobis(3-methyl-6-tert-butyl phenol)	P	96-69-5	-	10	-	20	-	Eye, skin & respiratory irritant
Diuron (ISO) 3-(3,4-dichlorophenyl)-1,1-dimethylurea	P	330-54-1	-	10	-	-	-	Eye, skin & respiratory irritant; Blood
Emery - inhalable / respirable dust Corundum Alumina	P	1302-74-5	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Endosulfan (ISO)	P	115-29-7	-	0,1	-	0,3	-	Sk; CNS
Enflurane 2-Chloro-1,1,2-trifluoroethyl difluoromethyl ether; Ethrane	SA	13838-16-9	50	383	-	-	-	Eye irritant; Warning properties unknown; CNS
Ethane-1-2-diol - particulate or vapour Ethylene glycol; Ethylene alcohol; Glycol; 1,2-Ethanediol	AP	107-21-1	- 20	10 52	- 40	- 104	-	Eye & skin irritant; Sk; CNS
Ethanethiol Ethyl mercaptan; Ethyl sulfhydrate	AX	75-08-1	0,5	1,3	2	5,2	2500	Skin irritant; Single shift only
Ethanol Ethyl alcohol	A	64-17-5	1000	1920	-	-	15000	Eye & skin irritant; Short organic vapor service life
2-Ethoxyethanol Ethylene glycol monoethyl ether; Glycol monoethyl ether	A	110-80-5	2	8	-	-	6000	Eye irritant; Sk
2-Ethoxyethyl acetate Ethylene glycol monoethyl ether acetate	A	111-15-9	2	11	-	-	6000	Eye irritant; Sk
2-Ethylhexyl chloroformate 2-ethylhexyl carbonochloridate	AP	24468-13-1	1	8	-	-	-	-
Ethyl acetate Acetic acid ethyl ester; Ethyl ethanoate	A	141-78-6	200	-	400	-	10000	Eye, skin & respiratory irritant

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	P R SL						
A1P R SL 30 03 57	P R SL	A1					
A1B1E1P R SL 30 03 64	P R SL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	P R SL

Filter for CleanAIR® Asbest

P R SL 56 00 10	P R SL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Ethyl acrylate Acrylic acide ethyl ester; Ethyl prop-2-enoate	A	140-88-5	5	21	10	42	2000	Eye, skin & respiratory irritant
Ethylamine Anhydrous ethylamine; Aminoethane; Monoethylamine; Ethyl prop-2-enoate	K	75-04-7	2	3,8	6	11	4000	Eye, skin & respiratory irritant
Ethylbenzene Phenylethane; Ethylbenzol	A	100-41-4	100	441	125	552	2000	Eye & skin irritant; Sk; CNS
Ethyl chloroformate Ethyl carbonochloridate	A	541-41-3	1	4,5	-	-	-	Eye, skin and respiratory irritant
Ethyl cyanoacrylate ethyl 2-cyanoprop-2-enoate	AP	7085-85-0	-	-	0,3	1,5	-	Eye, skin and respiratory irritant
Ethyl formate Ethyl methanoate; Formic acid ethyl ester	AX	109-94-4	100	308	150	462	8000	Eye & respiratory irritant; Short organic vapor service life; Single shift only; CNS
Ethylene oxide Dimethylene oxide; Oxirane; 1,2-Epoxy ethane	SA	75-21-8	5	9,2	-	-	800	Eye irritant; Poor warning properties; Carc.
4-Ethylmorpholine N-Ethylmorpholine	AP	100-74-3	5	24	20	96	2000	Eye & skin irritant; Sk
Ferrous foundry particulate - inhalable / respirable dust	P	-	- -	10 4	- -	- -	-	-
Flour dust	P	-	-	10	-	30	-	Sen
Fluoride (inorganic as F)	P	16984-48-8	-	2,5	-	-	500 mg/m^3	-
Fluorine Molecular fluorine	SA	7782-41-4	1	1,6	1	1,6	25	Eye & respiratory irritant; Poor warning properties
Formaldehyde Methylene oxide	ABEK	50-00-0	2	2,5	2	2,5	30	Eye, skin & respiratory irritant; Carc.
Formamide Carbamaldehyde; Methanamide	SA	75-12-7	20	37	30	56	-	Eye & skin irritant; Poor warning properties; CNS
Formic acid Hydrogencarboxylic acid; Methanoic acid	SA	64-18-6	5	9,6	-	-	-	Eye irritant; Poor warning properties
2-Furaldehyde Furfuraldehyde; Fural; 2-Furancarboxaldehyde; Furfural; Furan-2-carbaldehyde	A	98-01-1	2	8	5	20	250	Eye, skin & respiratory irritant; Sk
Germane Germanium tetrahydride; Germanium hydride	SA	7782-65-2	0,2	0,64	0,6	1,9	-	Warning properties unknown
Glutaraldehyde 1,5-Pentanedial; Pentanedial	AP	111-30-8	0,05	0,2	0,05	0,2	-	Eye, skin & respiratory irritant; Sen.
Glycerol, mist Glycerin; Propane-1,2,3-triol	AP	56-81-5	-	10	-	-	-	-
Grain dust (oats, wheat, barley)	P	-	-	10	-	-	-	Eye, skin & respiratory irritant; Sen.
Graphite - inhalable / respirable dust (Activated charcoal) Plumbago; Potelot; Corbo minerals; Black lead; Silver lead	P	7440-44-0	- -	10 4	- -	- -	-	-
Gypsum - inhalable / respirable dust Calcium;sulfate;dihydrate	P	10101-41-4	- -	10 4	- -	- -	-	Eye & skin irritant
Halogeno-platinum compounds (complex co-ordination compounds in which the platinum atom is directly co-ordinated to halide groups) (as Pt)	P	-	-	0,002	-	-	-	Sen
Halothane 2-Bromo-2-chloro-1,1,1-trifluoroethane	SA	151-67-7	10	82	-	-	-	Eye, skin & respiratory irritant; CNS
Hardwood dust	P	-	-	5	-	-	-	Carc.; Sen
n-Heptane Normal heptane; Heptane	A	142-82-5	500	2085	-	-	5000	CNS
Heptan-2-one Methyl n-amyl ketone; n-Amyl methyl ketone; 2-Heptanone	A	110-43-0	50	237	100	475	4000	Eye & skin irritant; Sk; CNS
Heptan-3-one 3-Heptanone; Ethyl butyl ketone	A	106-35-4	35	166	100	475	3000	Eye & skin irritant; Sk; CNS

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL						
A1P R SL 30 03 57	PRSL	A1					
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
n-Hexane Hexane; Hexyl hydride; Normal hexane	A	110-54-3	20	72	-	-	5000	Eye & skin irritant; CNS
Caprolactam dust and vapour Aminocaproic lactam; 2-Oxohexamethyleneimine; Azepan-2one	AP	105-60-2	- -	1 10	- -	3 20	-	Eye, skin & respiratory irritant; CNS
Hexan-2-one 2-Hexanone; Methyl butyl ketone	A	591-78-6	5	21	-	-	5000	Eye irritant; Sk; CNS
Hydrazine Anhydrous hydrazine; Diazine	SA	302-01-2	0,02	0,03	0,1	0,13	80	Eye & skin irritant; Poor warning properties; Carc.; Sk; CNS
Hydrogen bromide Hydrobromic acid; HBr; Bromane	BP	10035-10-6	-	-	3	10	-	Eye, skin & respiratory irritant
Hydrogen chloride (gas and aerosol mists) Hydrochloric acid; HCl; Muriatic Acid; Chlorane	BP	7647-01-0	1	2	5	8	100	Eye, skin & respiratory irritant
Hydrogen cyanide Hydrocyanic acid; Prussic acid; Formonitrile	BP	74-90-8	-	-	10	11	50	Eye irritant; Sk; CNS
Hydrogen fluoride Fluorane; Fluoric acid; HF	BP	7664-39-3	1,8	1,5	3	2,5	30	Eye, skin & respiratory irritant
Hydrogen peroxide Peroxide; Hydrogen dioxide	BP	7722-84-1	1	1,4	2	2,8	75	Eye, skin & respiratory irritant; Warning properties unknown
Hydrogen sulphide Sulfane; H2S; Hydrosulphuric Acid	B	7783-06-4	5	7	10	14	300	Eye & respiratory irritant; Warning properties (Olfactory fatigue); CNS
Hydroquinone Benzene-1,4-diol; Quinol; Dihydroxybenzene; 1,4-Benzenediol	AP	123-31-9	-	0,5	-	-	50 mg/m^3	Eye irritant; CNS
4-Hydroxy-4-methylpentan-2-one Diacetone; Diacetone alcohol; 2-Methyl-2-pentanol-4-one	A	123-42-2	50	241	75	362	2100	Eye, skin & respiratory irritant; CNS; Sk
2-Hydroxypropyl acrylate 2-Hydroxypropyl prop-2-enoate	A	999-61-1	0,5	2,7	-	-	-	Eye, skin & respiratory irritant; Warning properties unknown; Sk
2,2´- Iminodi(ethylamine) Diethylene triamine; N´-(2-aminoethyl)ethane-1,2-diamine, Bis(2-aminothyl)amine	SA	111-40-0	1	4,3	-	-	-	Eye, skin & respiratory irritant; Poor warning properties; Sk
Indene Indonaphthene; 1H-indene	A	95-13-6	10	48	15	72	-	Eye, skin & respiratory irritant
Indium and compounds (as In)	P	-	-	0,1	0	0,3	-	Eye, skin & respiratory irritant
Iodine Molecular iodine	BP	7553-56-2	-	-	0,1	1,1	10	Eye, skin & respiratory irritant; Warning properties unknown; CNS
Iodoform Triiodomethane	SA	75-47-8	0,6	9,8	1	16	-	Eye & skin irritant; Poor warning properties
Iodomethane Methyl iodide	AX	74-88-4	2	12	-	-	800	Eye, skin & respiratory irritant; Warning properties unknown; Single shift only; Sk; CNS
Iron(III)oxide, fume (as Fe) Ferric oxide fume	P	1309-37-1	-	5	-	10	-	-
Iron salts (as Fe) Iron salts, soluble (as Fe)	P	-	-	1	-	2	-	Eye irritant
Isobutyl acetate 2-Methylpropyl acetate	AP	110-19-0	150	724	187	903	7500	Eye, skin & respiratory irritant; CNS
Isocyanates, all (as -NCO) Except methyl isocyanate	SA	-	- -	0,02	- -	0,07	-	Sen.
Isoflurane	SA	26675-46-7	50	383	-	-	-	CNS; Asphyxiant
Isooctyl alcohol (mixed isomers) Isooctanol; 6-Methylheptan-1-ol	AP	26952-21-6	50	271	-	-	-	Eye & skin irritant; Warning properties unknown
Isopentane 2-Methylbutane	AX	78-78-4	600	1800	-	-	-	Single shift only; CNS
Isopropyl acetate Isopropyl ester of acetic acid; sec-Propyl acetate; Propan-2-yl acetate	A	108-21-4	-	-	200	849	16000	Eye, skin & respiratory irritant; CNS
Isopropyl chloroformate Propan-2-yl carbonochloridate	AP	108-23-6	1	5,1	-	-	-	Eye, skin & respiratory irritant

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	P R SL						
A1P R SL 30 03 57	P R SL	A1					
A1B1E1P R SL 30 03 64	P R SL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	P R SL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	P R SL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit Long-term ppm	Long-term mg.m^{-3}	Short-term ppm	Short-term mg.m^{-3}	IDLH value	Comments
Kaolin, respirable dust China clay; Aluminium silicate	**P**	1332-58-7	-	2	-	-	-	-
Ketene Carbomethene; Ethenone	**SA**	463-51-4	0,5	0,87	1,5	2,6	-	Eye & skin irritant; Warning properties unknown
Limestone - total inhalable / respirable dust Calcium Carbonate; Marble	**P**	1317-65-3	- -	10 4	- -	- -	-	Eye & skin irritant; Carc. (only applies if LPG contains more than 0.1% of buta-1,3-diene)
Liquefied petroleum gas LPG; Bottled gas	**SA**	68476-85-7	1000	1750	1250	2180	19000	Warning properties unknown; Asphyxiant
Lithium hydride	**P**	7580-67-8	-	0,025	-	-	55 mg/m^3	Eye & skin irritant
Lithium hydroxide	**P**	1310-65-2	-	-	-	1	-	Eye, skin & respiratory irritant
Magnesite - total inhalable / respirable dust Magnesium carbonate - total inhalable dust	**P**	546-93-0	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Magnesium oxide (as Mg) - inhalable dust fume and total respirable dust Magnesia fume; Oxomagnesium	**P**	1309-48-4	- -	10 4	- -	- -	750 mg/m^3	Eye, skin & respiratory irritant
Malathion (ISO) Carbofos	**AP**	121-75-5	-	10	-	-	-	Eye, skin & respiratory irritant; Sk; CNS
Maleic anhydride 2,5-Furanedione; cis-Butenedioic anhydride; Furan-2,5-dione	**AP**	108-31-6	-	1	-	3	-	Skin & respiratory irritant; Sen.
Manganese and its inorganic compounds(as Mn) Manganese; Metal fume	**P**	7439-96-5	-	0,5	-	-	-	-
Marble total - inhalable and respirable Calcium carbonate; Limestone	**P**	1317-65-3	- -	10 4	- -	- -	-	Eye & skin irritant; Carc. (only applies if LPG contains more than 0.1% of buta-1,3-diene)
Mercaptoacetic acid Thioglycolic acid; Thioranic acid; 2-Sulfanyl acetic	**SA**	68-11-1	1	3,8	-	-	-	Eye, skin & respiratory irritant; Poor warning properties; Sk.
Mercury and divalent inorganic compounds including mercuric oxide and mercuric chloride (measured as mercury) (as Hg)	**ABEK HgP**	-	-	0,02	-	-	28 mg/m^3	Eye & skin irritant; Sk.
Methacrylic acid 2-methacrylic acid; 2-Methyl propenoic acid; a-Methacrylic acid; 2-Methylprop-2-enoic acid	**AP**	79-41-4	20	72	40	143	-	Eye & skin irritant; Warning properties unknown
Methylacrylonitrile 2-Methyl-2-propenenitrile; Isoprene cyanide	**SA**	126-98-7	1	2,8	-	-	-	Eye & skin irritant; Poor warning properties; Sk; CNS
Methanethiol Methyl mercaptan; Mercaptomethane	**SA**	74-93-1	0,5	1	-	-		Eye, skin & respiratory irritant; Blood; CNS
Methanol Methyl alcohol; Wood alcohol; Carbinol	**AX**	67-56-1	200	266	250	333	25000	Eye, skin & respiratory irritant; Single shift only; Sk
2-Methoxyethanol Ethylene glycol monomethyl ether	**A**	109-86-4	1	3	-	-	200	Eye, skin & respiratory irritant; Sk; CNS
2-(2-Methoxyethoxy) ethanol	**A**	111-77-3	10	50,1	-	-	-	Sk
2-Methoxyethyl acetate Ethylene glycol methyl ether acetate	**A**	110-49-6	1	5	-	-	4000	Eye, skin & respiratory irritant; Sk; CNS
(2-methyoxyethylethoxy) propanol Dipropylene glycol methyl ether; Dipropylene glycol monomethyl ether; DowanolTM50B	**SA**	34590-94-8	50	308	-	-	-	Eye, skin & respiratory irritant; Poor warning properties; Sk
1-Methoxypropan-2-ol 1-Methoxy-2-propanol; Propylene glycol monomethyl ether	**A**	107-98-2	100	375	150	560	-	Eye & skin irritant; Sk; CNS
1-Methoxypropyl acetate 1-Methoxy-2-propanol acetate; PGMEA	**A**	108-65-6	50	274	100	548	-	Eye, skin & respiratory irritant; Sk; CNS
Methyl acetate Methyl acetic ester; Acetic acid methyl ester; Methyl ethanoate	**AX**	79-20-9	200	616	250	770	10,000	Eye, skin & respiratory irritant; Short organic vapor service life; Single shift only; CNS
Methyl acrylate Methyl propenoate; Methyl prop-2-enoate	**A**	96-33-3	5	18	10	36	1000	Eye, skin & respiratory irritant; CNS
3-Methylbutan-1-ol Isoamyl alcohol; Isobutyl carbinol; Isopentyl alcohol; Fusel oil; 3-Methyl-1-butanol	**A**	123-51-3	100	366	125	458	10000	Eye & skin irritant
Methyl cyanoacrylate Mecrylate; Methyl 2-cyanoacrylate; Methyl 2-cyanoprop-2-enoate	**A**	137-05-3	-	-	0,3	1,4	-	Eye, skin & respiratory irritant

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

	P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2				
B2 50 01 61			B2			
K2 50 01 59					K2	
A2B2 50 01 58		A2		B2		
A2B2E2 50 01 63		A2		B2	E2	
A2B2E2K2 50 01 69		A2		B2	E2	K2

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3					K2	
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL				
A1P R SL 30 03 57	PRSL	A1			
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
4,4'-Methylene dianiline 4,4'-Diaminodiphenylmethane; 4-[(4-aminophenyl)methyl]aniline	AP	101-77-9	0,01	0,08	-	-	-	Eye irritant; Warning properties unknown; Carc.; Sk
Methyl ethyl ketone peroxide	AP	1338-23-4	-	-	0,2	1,5	-	Eye, skin & respiratory irritant; Warning properties unknown
Methyl methacrylate ethyl 2-methylprop-2-enoate	A	80-62-6	50	208	100	416	-	Eye, skin & respiratory irritant
2-Methylcyclohexanone o-Methylcyclohexanone; 2-Methylcyclohexan-1-one	A	583-60-8	50	233	75	350	2500	Eye, skin & respiratory irritant; CNS
Methylcyclohexanols - mixture of isomers	A	25639-42-3	50	237	75	356	-	Eye, skin & respiratory irritant
Methyl isocyanate Isocyanic acid methyl ester; Methylimino(oxo)methane	SA	624-83-9	-	-	0.02	-	20	Eye, skin & respiratory irritant; Poor warning properties; Sen.; Sk
N-Methylaniline Monomethyl aniline; N-Methyl aniline	SA	100-61-8	0,5	2,2	-	-	100	Respiratory irritant; Poor warning properties; Blood; Sk; CNS
n-Methyl-2-pyrrolidone 1-methyl-2-pyrrolidone; m-Pyrol; 1-methylpyrrolidin-2-one	SA	872-50-4	10	40	20	80	-	Eye & skin irritant; Warning properties unknown; Sk
5-Methylheptan-3-one Ethyl amyl ketone; 5-Methyl-3-heptanone	A	541-85-5	10	53	20	107	3000	Eye, skin & respiratory irritant; CNS
5-Methylhexan-2-one 5-Methyl-2-hexanone; Methyl isoamyl ketone	A	110-12-3	20	95	100	475	-	Eye, skin & respiratory irritant; Sk; CNS
2-Methylpentane-2,4 diol 4-Methyl-2,4-pentanediol; Hexylene glycol	A	107-41-5	25	123	25	123	-	Eye, skin & respiratory irritant; CNS
4-methylpentan-2-ol Methyl isobutyl carbinol; Methyl amyl alcohol	A	108-11-2	25	106	40	170	2000	Eye & skin irritant; Sk; CNS
4-Methylpentan-2-one Methyl isobutyl ketone; Hexone	A	108-10-1	50	208	100	416	3000	Eye, skin & respiratory irritant; Sk; CNS
2-Methylpropan-1-ol Isobutyl alcohol; Isobutanol; 2-Methyl-1-propanol; Isopropylcarbinol	A	78-83-1	50	154	75	231	8000	Eye, skin & respiratory irritant; CNS
2-Methylpropan-2-ol tert-Butyl alcohol; 2-Methyl-2-propanol; Trimethyl-carbinol	A	75-65-0	100	308	150	462	8000	Eye, skin & respiratory irritant; CNS
Methyl-tert-butyl-ether 2-Methoxy-2-methyl-propane; tert-Butyl methyl ether; MTBE	A	1634-04-4	50	183,5	100	367	-	Eye, skin & respiratory irritant; CNS
Mica (less than 1% quartz) total - inhalable / respirable dust	P	12001-26-2	- -	10 0,8	- -	- -	1500 mg/m^3	Eye irritant
MMMF - Machine/Man-made mineral fibre, except for refractory ceramic fibres and special purpose fibres	P	-	5 g/m^3	-	-	-	-	Eye, skin & respiratory irritant
Molybdenum (as Mo) - soluble and insoluble compounds	P	7439-98-7	- -	5 10	- -	10 20	-	Eye irritant
Monochloroacetic acid Chloroethanoic acid; 2-chloroacetic acid	AP	79-11-8	0,3	1,2	-	-	-	Eye irritant; Sk
Morpholine Tetrahydro-1,4-oxazine; Diethylenimide oxide	A	110-91-8	10	36	20	72	8000	Eye & skin irritant; Sk
Nickel, metal dust (as Ni)	P	7440-02-0	- -	0,1 0,5	- -	- -	-	Carc (nickel oxides and sulphides); Sk; Sen. (nickel sulphate)
Nickel,metal fume (as Ni)	P	7440-02-0	-	-	-	-	-	Carc (nickel oxides and sulphides); Sk; Sen. (nickel sulphate)
Nickel, soluble compounds (as Ni)	P	7440-02-0	-	-	-	-	-	Carc (nickel oxides and sulphides); Sk; Sen. (nickel sulphate)
Nickel, sulphide roasting, fume and dust (as Ni)	SA	-	-	-	-	-	-	Eye irritant; Warning properties unknown; Sk; Carc (nickel oxides and sulphides); Sen. (nickel sulphate)
Nicotine 3-(1-Methyl-2-pyrrolidyl) pyridine	AP	54-11-5	-	0,5	-	1,5	35 mg/m^3	Sk; Cardio.; CNS
Nitric acid Aqua fortis; Hydrogen nitrate; White fuming nitric acid; Red fuming nitric acid	ABEP	7697-37-2	-	-	1	2,6	100	Eye & skin irritant
Nitrobenzene Nitrobenzol; Oil of mirbane	AP	98-95-3	0,2	1	-	-	200	Eye & skin irritant; Sk; Blood; Cardio., Carc.

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

	A	AX	B	E	K	Hg	SX
A2 50 01 56	A2						
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58	A2		B2				
A2B2E2 50 01 63	A2		B2	E2			
A2B2E2K2 50 01 69	A2		B2	E2	K2		

Combined filters with RD40*1/7" thread

	P3	A	AX	B	E	K	Hg	SX
A1P3 50 03 57	P3	A1						
A2P3 50 01 57	P3	A2						
A3AXP3 50 01 70	P3	A3	AX					
B2P3 50 01 62	P3			B2				
K2P3 50 01 60	P3					K2		
A2B2P3 50 01 67	P3	A2		B2				
A2B2E2P3 50 01 64	P3	A2		B2	E2			
A1B1E1P3 50 03 64	P3	A1		B1	E1			
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2		
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg	

Filters with TR-110 thread (AerGO® / D-Bug)

	PRSL	A	B	E
P R SL 30 00 10/2	PRSL			
A1P R SL 30 03 57	PRSL	A1		
A1B1E1P R SL 30 03 64	PRSL	A1	B1	E1

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Nitromethane Nitrocarbol	**AP**	75-52-5	100	254	150	381	1000	Skin & eye irritant; Short ‚A' filter service life; CNS
2-Nitropropane sec-Nitropropane; Isonitropropane; Dimethylnitromethane	**AP**	79-46-9	5	19	-	-	2300	Eye & skin irritant; Carc.
Nitrous oxide	**SA**	10024-97-2	100	183	-	-	-	Warning properties unknown; Asphyxiant; CNS
Orthophosphoric acid Phosphoric acid; o-phosphoric acid	**P**	7664-38-2	-	1	-	2	10000 mg/m^3	Eye & respiratory irritant
Osmium tetraoxide (as Os) Osmic acid; Tetraoxoosmium	**BP**	20816-12-0	0,000	0,002	0,001	0,006	0,1 ppm	Eye & respiratory irritant; Unknown sorbent effecti-veness
Oxalic acid Ethanedioic acid	**P**	144-62-7	-	1	-	2	500 mg/m^3	Eye & skin irritant
2,2'-Oxydiethanol Diethylene glycol; DEG; Diglycol; 2,2'-Dihydroxydiethyl ether	**A**	111-46-6	23	101	-	-	-	-
Ozone Triatomic oxygen	**ABE / Ozone**	10028-15-6	-	-	0,2	0,4	10	Eye irritant
Paracetamol, total inhalable dust N-(4-hydroxyphenyl)acetamide; Acetaminophen	**P**	103-90-2	-	10	-	-	-	-
Paraffin wax, fume	**AP**	8002-74-2	-	2	-	6	-	Eye, skin & respiratory irritant
Paraquat dichloride, respirable dust	**AP**	1910-42-5	-	0,08	-	-	-	Eye, skin & respiratory irritant; Heart
Pentacarbonyliron (as Fe) Iron pentacarbonyl (as Fe); Iron carbonyl; Iron(0) pentacarbonyl	**AP**	13463-40-6	0,01	0,08	-	-	-	Eye, skin & respiratory irritant; Warning properties unknown
Pentaerythritol - inhalable / respirable dust Tetramethylolmethane; 2,2-bis(Hydroxymethyl)-1,3-propanediol - respirable dust	**P**	115-77-5	- -	10 4	- -	20 -	-	Eye & respiratory irritant
Pentan-2-one Methyl propyl ketone; 2-Pentanone; Ethyl acetone	**A**	107-87-9	200	716	250	895	5000	Eye, skin & respiratory irritant; CNS
Pentan-3-one Diethyl ketone; Metacetone; Propione; 3-Pentanone; Ethyl propionyl	**A**	96-22-0	200	716	250	895	-	Eye, skin & respiratory irritant; CNS
Pentane Normal pentane; n-Pentane	**AX**	109-66-0	600	1800	-	-	15000	Eye, skin & respiratory irritant; Single shift only; CNS
Pentyl acetates (all isomers) n-Amyl acetate; 1-Pentanol acetate	**AP**	628-63-7	50	270	100	541	3000 -9000	Eye, skin & respiratory irritant; CNS
2-Phenylpropene a-Methyl styrene; 1-Methyl-1-phenyl-ethylene; Prop-1-en-2-ylbenzene	**AP**	98-83-9	50	246	100	491	5000	Eye, skin & respiratory irritant; CNS
Phenol Carbolic acid; Monohydroxy benzene	**AP**	108-95-2	2	7,8	4	16	250	Eye & skin irritant; Sk
p-Phenylenediamine p-Diaminobenzene; 1,4-Diaminobenzene; Benzene-1,4-diamine	**AP**	106-50-3	-	0,1	-	-	25 mg/m^3	Skin & respiratory irritant; Sk
Phorate (ISO)	**AP**	298-02-2	-	0,05	-	0,2	-	Eye, skin & respiratory irritant; Sk; CNS
Phosgene Carbonyl chloride; Carbon oxychloride; Chloroformyl chloride; Carbonyl dichloride	**SA**	75-44-5	0,02	0,08	0,06	0,25	2	Eye, skin & respiratory irritant; Poor warning properties
Phosphine Hydrogen phosphide; Phosphorus hydride; Phosphorated hydrogen; Phosphane	**SA**	7803-51-2	0,1	0,14	0,2	0,28	200	Respiratory irritant; Ineffective sorbents; Fumigant; Heart; CNS
Phosphorus pentachloride Phosphoric chloride	**EP**	10026-13-8	0,1	0,87	0,2	2	200 mg/m^3	Eye, skin & respiratory irritant; Warning properties unknown
Phosphorus trichloride Phosphorus chloride; Trichlorophosphane	**SA**	7719-12-2	0,2	1,1	0,5	2,9	50	Eye, skin & respiratory irritant; Warning properties unknown
Phosphorus, yellow White phosphorus; WP	**SA**	7723-14-0	-	0,1	-	0,3	-	Eye & respiratory irritant; Warning properties unknown; Filter „P" acceptable if no phosphorus vapour or phosphine gas present
Phosphoryl trichloride Phosphoryl chloride; Phosphorus oxychloride	**SA**	10025-87-3	0,2	1,3	0,6	3,8	-	Eye, skin & respiratory irritant; Warning properties unknown; CNS
Phthalic anhydride 1,3-Isobenzofurandione; 2-benzofuran-1,3-dione	**AP**	85-44-9	-	4	-	12	1650	Eye, skin & respiratoy irritant; Sen.

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL				
A1P R SL 30 03 57	PRSL	A1			
A1B1E1P R SL 30 03 64	PRSL	A1	B1	E1	

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Picloram (ISO)	ABP	1918-02-1	-	10	-	20	-	-
Picric acid 2,4,6-Trinitrophenol	P	88-89-1	-	0,1	-	0,3	-	Eye & skin irritant; Blood
Piperazine 1,4-Diazacyclohexane; Diethylenediamine; Hexahydropyrazine; Piperaxine and salts	P	110-85-0	-	0,1	-	0,3	-	Eye, skin & respiratory irritant; Sen.
Piperazine dihydrochloride Dihydrochloride salt of diethylene-diamine	P	142-64-3	-	0,1	-	0,3	-	Eye, skin & respiratory irritant; Sen.
Piperidine Hexahydropyridine	SA	110-89-4	1	3,5	-	-	-	Eye, skin & respiratory irritant; Sk
Plaster of Paris - inhalable / respirable dust Dicalcium;disulfate;hydrate; Gypsum hemihydrate	P	26499-65-0	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Platinum compounds, soluble (except certain halogeno - platinum compounds) (as Pt)	P	-	-	0,002	-	-	-	Eye irritant
Platinum metal Platinum - Metal, dusts, mists and fume	P	7440-06-4	-	5	-	-	-	Eye, skin & respiratory irritant
Polychlorinated biphenyls PCB	AP	1336-36-3	-	0,1	-	-		Eye irritant; Sk; Carc.
Polyvinyl chloride - inhalable / respirable dust	P	9002-86-2	- -	10 4	- -	- -	-	-
Portland Cement - inhalable / respirable dust	P	65997-15-1	- -	10 4	- -	- -	-	Eye & skin irritant
Potassium hydroxide Caustic potash; Potassium hydrate	P	1310-58-3	-	-	-	2	-	Eye, skin & respiratory irritant
Propane-1,2-diol - total vapour and particulates Propylene glycol; 1,2-Propanediol; 1,2-Dihydroxy-propane; Methyl glycol	AP	57-55-6	150 -	474 10	- -	- -	-	Eye, skin & respiratory irritant
Propane-1,2-diol - particulates Propylene glycol; 1,2-Dihydroxy-propane; Methyl glycol	P	57-55-6	-	-	-	-	-	Eye, skin & respiratory irritant
Propan-1-ol 1-Propanol; n-Propyl alcohol; Ethylcarbinol	AP	71-23-8	200	500	250	625	4000	Eye irritant; Sk; CNS
Propan-2-ol Isopropyl alcohol; Isopropanol; 2-Propanol; sec-Propyl alcohol	A	67-63-0	400	999	500	1250	12000	Eye & skin irritant; CNS
Propionic acid Methylacetic acid; Ethylformic acid; Propanoic acid	A	79-09-4	10	31	15	46	-	Eye, skin & respiratory irritant
Propoxur (ISO) (2-propan-2-yloxyphenyl) N-methylcarbamate	P	114-26-1	-	0,5	-	2	-	Sk; CNS
Propranolol	AP	525-66-6	-	2	-	6	-	-
n-Propyl acetate Propylacetate; Acetic acid n-propyl ester	A	109-60-4	200	849	250	1060	8000	Eye, skin & respiratory irritant; CNS
Propylene oxide 1,2-Epoxypropane; Propene oxide; Methyloxirane	SA	75-56-9	5	12	-	-	2000	Eye, skin & respiratory irritant; Poor warning properties; Carc.
Prop-2-yn-1-ol 2-Propyn-1-ol; Propargyl alcohol	SA	107-19-7	1	2,3	3	7	-	Skin & respiratory irritant; Sk; CNS
Pulverised fuel ash - inhalable / respirable dust	P	-	- -	10 4	- -	- -	-	-
Pyridine Azabenzene; Azine	A	110-86-1	5	16	10	33	-	Eye & skin irritant; Sk; CNS
2-Pyridylamine a-Aminopyridine; 2-Aminopyridine; Pyridin-2-amine	SA	504-29-0	0,5	2	2	7,8	5	Eye & skin irritant; Warning properties unknown; Sk; CNS
Pyrocatechol Catechol; 1,2-Benzenediol; 2-Hydroxyphenol; 1,2-Dihydroxybenzene	SA	120-80-9	5	23	-	-	-	Eye, skin & respiratory irritant; Poor warning properties; Sk; CNS
Refractory ceramic fibres and special purpose fibres	P	-	-	5	-	-	-	Carc.
Resorcinol m-Dihydroxybenzene; 1,3-Benzenediol; Benzene-1,3-diol	P	108-46-3	10	46	20	92	-	Eye, skin & respiratory irritant; Blood; Cardio.; Sk; CNS

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3					K2	
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL						
A1P R SL 30 03 57	PRSL	A1					
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Rhodium (as Rh) - insoluble compounds, dusts and mists - soluble salts	**P**	-	- -	0,1 0,001	- -	0,3 0,003	-	Eye irritant
Rosin-based solder flux fume Colophony	**P**	8050-09-7	-	0,05	-	0,15	-	Eye, skin & respiratory irritant; Sen.
Rotenone (ISO)	**P**	83-79-4	-	5	-	10	-	Eye, skin & respiratory irritant; CNS
Rouge - total inhalable / respirable dust Red iron oxide; Red oxide; Blended red oxides; Iron(III)oxide	**P**	1309-37-1	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Rubber fume	**P**	-	-	0,6	-	-	-	Limit relates to cyclohexane soluble material; Carc.
Rubber process dust	**P**	-	-	6	-	-	-	Carc.
Selenium and compounds (except hydrogen selenide (as Se) - Dusts,mists & fumes)	**P**	-	-	0,1	-	-	-	Eye, skin & respiratory irritant
Silane Silicon tetrahydride	**SA**	7803-62-5	0,5	0,67	1	1,3	-	Eye, skin & respiratory irritant; Warning properties unknown; CNS
Silica, amorphous - inhalable / respirable dust Silicon dioxide, Dioxosilane	**P**	112945-52-5	- -	6 2,4	- -	- -	-	Eye & respiratory irritant
Silica, crystalline - respirable dust Tripoli	**P**	-	-	0,1	-	-	-	Respiratory irritant
Silica, fused respirable dust Cristobalite; Quartz	**P**	60676-86-0	-	0,08	-	-	-	Respiratory irritant
Silicon - inhalable / respirable dust	**P**	7440-21-3	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Silicon carbide (not whiskers) - total inhalable / respirable dust Carbon silicide; Carborundum	**P**	409-21-2	- -	10 4	- -	- -	-	Eye, skin & respiratory irritant
Silver (soluble compounds as Ag)	**P**	-	-	0,01	-	-	-	-
Silver, metallic Silver (metal)	**P**	7440-22-4	-	0,1	-	-	-	-
Sodium azide (as NaN3) Hydrazoic acid Hydrazoic acid; Sodium salt	**SA**	26628-22-8	-	0,1	-	0,3	-	Eye & skin irritant; Warning properties unknown; Sk; CNS
Sodium 2- (2,4-dichlorophenoxy) ethyl sulphate Disul-sodium	**P**	136-78-7	-	10	-	20	-	Eye & skin irritant; CNS
Sodium hydrogen sulphite Sodium bisulphite	**EP**	7631-90-5	-	5	-	-	-	Eye & skin irritant
Sodium hydroxide Caustic soda; Soda lye; Lye (Sodium hydroxide)	**P**	1310-73-2	-	-	-	2	250 mg/m^3	Eye & skin irritant
Softwood dust	**P**	-	-	5	-	-	-	Sen.
Starch - total inhalable / respirable dust Corn starch; Maltose	**P**	9005-25-8	- -	10 4	- -	- -	-	Eye & skin irritant
Styrene Phenylethylene; Vinyl benzene; Cinnamene; Styrene monomer	**A**	100-42-5	100	430	250	1080	5000	Eye, skin & respiratory irritant; Carc.
Subtilisins Proteolytic enzymes as 100% crystalline enzyme	**SA**	1395-21-7	-	0,000	-	-	-	Eye, skin & respiratory irritant; Warning properties unknown; Sen.
Sucrose Table sugar; Saccharose	**P**	57-50-1	-	10	-	20	-	Eye, skin & respiratory irritant
Sulfotep (ISO)	**ABP**	3689-24-5	-	0,1	-	-	-	Eye, skin & respiratory irritant; Cardio.; Sk; CNS
Sulphur hexafluoride	**SA**	2551-62-4	1000	6070	1250	7590	-	Warning properties unknown; Ineffective sorbents; Asphyxiant
Sulphuric acid (mist) Battery acid; Hydrogen sulfate; Oil of vitriol	**EP**	7664-93-9	-	0,05	-	-	-	Eye & skin irritant; The mist is defined as the thoracic fraction; Carc.
Sulfur dioxide	**E**	7446-09-5	-	2	-	5	100	Eye, skin & respiratory irritant

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3	50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2					
B2 50 01 61			B2				
K2 50 01 59					K2		
A2B2 50 01 58		A2		B2			
A2B2E2 50 01 63		A2		B2	E2		
A2B2E2K2 50 01 69		A2		B2	E2	K2	

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1					
A2P3 50 01 57	P3	A2					
A3AXP3 50 01 70	P3	A3	AX				
B2P3 50 01 62	P3			B2			
K2P3 50 01 60	P3				K2		
A2B2P3 50 01 67	P3	A2		B2			
A2B2E2P3 50 01 64	P3	A2		B2	E2		
A1B1E1P3 50 03 64	P3	A1		B1	E1		
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2	
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL						
A1P R SL 30 03 57	PRSL	A1					
A1B1E1P R SL 30 03 64	PRSL	A1		B1	E1		

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL	

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL	

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Sulphuryl difluoride Sulphuryl fluoride	SA	2699-79-8	5	21	10	42	1000	Eye irritant; Warning properties unknown
Talc, respirable dust (Hydrous magnesium silicate) Steatite talc; Non-fibrous talc; dioxosilane;oxomagnesium;hydrate	P	14807-96-6	-	1	-	-	-	Eye and respiratory irritant
Tantalum Tantalum - metal and oxide dusts; Tantalum - metal fume	P	7440-25-7	-	5	-	10	-	Eye & skin irritant
Tellurium compounds (dusts and mists), except hydrogen telluride - as Te	P	13494-80-9	-	0,1	-	-	-	-
Terphenyls, all isomers o-Terphenyl; m-Terphenyl; p-Terphenyl; Mixed terphenyls; Diphenyl benzenes	P	26140-60-3	-	-	0,5	4,8	-	Eye & skin irritant
1,1,2,2-Tetrabromoethane Tetrabromoethane; Acetylene tetrabromide	SA	79-27-6	0,5	7,2	-	-	8	Eye, skin & respiratory irritant; Warning properties unknown; Sk; CNS
Tetracarbonylnickel (as Ni) Nickel tetracarbonyl; Nickel carbonyl (as Ni)	SA	13463-39-3	-	-	0,1	0,24	7	Eye irritant; Poor warning properties; CNS
Tetrachloroethylene Perchloroethylene; Perk	SA	127-18-4	50	345	100	689	500	Eye, skin & respiratory irritant; Carc.; CNS
1,1,1,2-Tetrafluoroethane (HFC 134a) Tetrafluoroethane; Norflurane	SA	811-97-2	1000	4240	-	-	-	Warning properties unknown
Tetrahydrofuran THF; 1,2-Epoxybutane; 1,2-Butylene oxide Epoxy-butane; Oxolane	A	109-99-9	50	150	100	300	-	Eye, skin & respiratory irritant; Sk; CNS
Tetrasodium pyrophosphate Sodium pyrophosphate	P	7722-88-5	-	5	-	-	-	Eye & skin irritant
Thallium, soluble compounds (as Tl) Thallium hydroxide; Thallium acetate; Thallium carbonate	P	7440-28-0	-	0,1	-	-	20 mg/m^3	Sk
Thionyl chloride Sulphurous oxychloride; Sulphur oxychloride; Thionyl dichloride	EP	7719-09-7	-	-	1	4,9	-	Eye & skin irritant; Warning properties unknown
Tin, metal fume	P	7440-31-5	-	2	-	4	400 mg/m^3	Eye, skin & respiratory irritant
Tin compounds, inorganic except SnH4) and metal oxides (as Sn)	P	-	-	2	-	4	400 mg/m^3	Eye, skin & respiratory irritant
Tin compounds, organic, except Cyhexatin (ISO), (as Sn)	AP	-	-	0,1	-	0,2	-	Eye, skin & respiratory irritant; Sk
Titanium dioxide - total inhalable / respirable dust Rutile; Anatase; Brookite	A	13463-67-7	- -	10 4	- -	- -	-	Respiratory irritant; Carc.
Toluene Toluol; Phenyl methane; Methyl benzene	A	108-88-3	50	191	100	384	2000	Eye, skin & respiratory irritant; Sk; CNS
p-Toluenesulphonyl chloride 4-Methyl-benzenesulfonyl chloride; Tosyl chloride	B	98-59-9	-	-	-	5	-	-
o-Toluidine o-Aminotoluene; o-Methylaniline; 2-Methylaniline	SA	95-53-4	0,2	0,89	-	-	100	Eye irritant; Poor warning properties; Blood; Cardio.; Carc.; Sk;
Tributyl phosphate, all isomers Tri-n-butyl phosphate; TBP	AP	126-73-8	-	5	-	5	125	Eye, skin & respiratory irritant
1,2,4-Trichlorobenzene	P	120-82-1	1	-	5	-	-	Eye & skin irritant; Sk
1,1,1-Trichloroethane Methyl chloroform	A	71-55-6	100	555	200	1110	1000	Eye, skin & respiratory irritant; CNS
Trichloroethylene Ethylene trichloride; Triclene™	A	79-01-6	100	550	150	820	1000	Eye & skin irritant; Carc.; Sk
Trichloronitromethane Nitrotrichloromethane; Chloropicrin; Nitrochloroform	SA	76-06-2	0,1	0,68	0,3	2,1	4	Eye, skin & respiratory irritant; Poor warning properties
Triethylamine N,N-diethylethanamine	A	121-44-8	2	8	4	17	-	Eye, skin & respiratory irritant; Sk
Triglycidyl isocyanurate TGIC	AP	2451-62-9	-	0,1	-	-	-	Carc.
Trimellitic anhydrite TMA (Trimellitic anhydrite); 1,3-dioxo-2-benzofuran-5-carboxylic acid	AP	552-30-7	-	0,04	-	0,12	-	Eye, skin & respiratory irritant; Sen.

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.

Filter type
Product code

P	A	AX	B	E	K	Hg	SX

Particle filters with RD40*1/7" thread

P3 50 00 48	P3 — 50 02 49 (ZERO) 50 42 49 (ZERO lite) 50 40 48 (P3 lite)

Gas filters with RD40*1/7" thread

A2 50 01 56		A2						
B2 50 01 61			B2					
K2 50 01 59					K2			
A2B2 50 01 58		A2		B2				
A2B2E2 50 01 63		A2		B2	E2			
A2B2E2K2 50 01 69		A2		B2	E2	K2		

Combined filters with RD40*1/7" thread

A1P3 50 03 57	P3	A1						
A2P3 50 01 57	P3	A2						
A3AXP3 50 01 70	P3	A3	AX					
B2P3 50 01 62	P3			B2				
K2P3 50 01 60	P3				K2			
A2B2P3 50 01 67	P3	A2		B2				
A2B2E2P3 50 01 64	P3	A2		B2	E2			
A1B1E1P3 50 03 64	P3	A1		B1	E1			
A2B2E2K2P3 50 01 68	P3	A2		B2	E2	K2		
A2B2E2K2HgP3 50 01 66	P3	A2		B2	E2	K2	Hg	

Filters with TR-110 thread (AerGO® / D-Bug)

P R SL 30 00 10/2	PRSL				
A1P R SL 30 03 57	PRSL	A1			
A1B1E1P R SL 30 03 64	PRSL	A1	B1	E1	

Filter for CleanAIR® Basic EVO (Basic 2000)

P R SL 80 00 10/2	PRSL

Filter for CleanAIR® Asbest

P R SL 56 00 10	PRSL

Each filter marked as P3 is approved also according the EN 12941 and EN 12942 as P R SL for use in combination with CleanAIR® PAPR systems

Substance Synonym	Filter Type	CAS Number	Workplace exposure limit				IDLH value	Comments
			Long-term		Short-term			
			ppm	mg.m^{-3}	ppm	mg.m^{-3}		
Trimethylbenzenes, all isomers or mixtures Mesitylene; Pseudocumene; Hemimellitene	**BP**	25551-13-7	25	125	-	-	-	Eye & skin irritant
3,5,5-Trimethylcyclohex-2-enone 3,5,5-Trimethyl-cyclohexenone; Isophorone	**B**	78-59-1	-	-	5	29	800	Eye, skin & respiratory irritant; CNS
Trimethyl phosphite Phosphorous acid trimethylester; Methyl phosphite	**P**	121-45-9	2	10	-	-	-	Eye, skin & respiratory irritant
2,4,6-Trinitrotoluene (TNT) TNT; Trinitrotoluol; Trinitrotoluene; sym-Trinitrotoluene	**P**	118-96-7	-	0,5	-	-	1000 mg/m^3	Skin irritant; Sk
Tri-o-tolyl phosphate Triorthocresyl phosphate; o-Tritolyl phosphate; tricresylphosphate	**BP**	78-30-8	-	0,1	-	0,3	40 mg/m^3	Sk; CNS
Triphenyl phosphate Phenyl phosphate	**BP**	115-86-6	-	3	-	6	1000 mg/m^3	-
Triphenyl phosphate / Tungsten and compounds Phenyl phosphate (heat involved); TPP (heat involved)	**BP**	7440-33-7	- -	1 5	- -	3 10	1000 mg/m^3	Eye, skin & respiratory irritant
Turpentine Gum spirits; Turps; Wood turpentine; Gum turpentine	**BP**	8006-64-2	100	566	150	850	1500	Eye & skin irritant
Vanadium pentoxide Divanadium pentoxide; Vanadic anhydride; Vanadium oxide; Vanadium(V) oxide	**BP**	1314-62-1	-	0,05	-	-	70 mg/m^3	Eye, skin & respiratory irritant; Carc.
Vinyl acetate 1-Acetoxyethylene; Ethenyl acetate	**AP**	108-05-4	5	17,6	10	35,2	-	Eye, skin & respiratory irritant
Vinyl chloride Chloroethylene; Chloroethene; Monochloroethylene; VC; VCM	**SA**	75-01-4	3	7,8	-	-	-	Eye, skin & respiratory irritant; Poor warning properties; Carc.
Vinylidene chloride 1,1-Dichloroethylene; 1,1-Dichloroethene	**SA**	75-35-4	10	40	-	-	-	Eye, skin & respiratory irritant; Poor warning properties; Single use filter - not available for PAPR
Wool process dust	**P**	-	-	10	-	-	-	-
Xylene, o-,m-,p- or mixed isomers Dimethylbenzenes	**A**	1330-20-7	50	220	100	441	1000	Eye, skin & respiratory irritant; Sk
Yttrium	**P**	7440-65-5	-	1	-	3	-	Eye irritant
Zinc chloride, fume	**P**	7646-85-7	-	1	-	2	4800 mg/m^3	Eye, skin & respiratory irritant
Zinc distearate, inhalable and respirable Synpro stearate; Zinc distearate	**P**	557-05-1	- -	10 4	- -	20 -	-	Eye, skin & respiratory irritant
Zirconium compounds (as Zr)	**P**	7440-67-7	-	5	-	10	500 mg/m^3	-

Colour code *Type*	For use against *Other information*
Brown ***A***	**Organic gases and vapours** (boiling point above 65 °C) Class 1, 2, 3
Brown ***AX***	**Organic gases and vapours** (boiling point at or below 65 °C) Single use only; AX filters are only specified for one class
Grey ***B***	**Inorganic gases and vapours** Class 1, 2, 3 Do not use against carbon monoxide
Yellow ***E***	**SO_2 and other acid gases** Class 1, 2, 3
Green ***K***	**Ammonia and its organic derivatives** Class 1, 2, 3
White ***P***	**Particles** Class 1, 2, 3
Red ***Hg***	**Mercury** Must include P3 particle filter Maximum use time 50 hours Special filter are only specified for one class
Blue ***NO***	**Oxides of nitrogen** Must include P3 particle filter Single use only; Special filter are only specified for one class
Violet ***SX***	Substance as specified by the manufacturer
Orange ***Reactor***	**Radioactive methyliodide and radioactive particles** Must include P3 particle filter
Compressed air supply ***SA***	The air is taken from a source of compressed air and delivered to CleanAIR® Pressure Flow Master / CA Pressure For Mask system, which enables regulation of the airflow delivered through an air hose into a protective mask or a hood.

This table shows the colour coding of filters according to EN 143, EN 12941, EN 12942 and EN 14387. This information should help you to determine the appropriate filter type needed for the contaminant you are dealing with. Please note, that filters intended to be used in combination with powered air purifying respirators must comply with EN 12941 or EN 12942.