Dräger

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Filter Selection Guide

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This brochure will give you a brief overview of the most important factors to consider when choosing filtering respiratory protection devices. This information can help you protect yourself against harmful substances in the air by selecting the appropriate masks and filters.

1. What must I consider when choosing a respirator?
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.

2. Please check the following before using filtering respiratory protection:
- Is there enough oxygen in the ambient air? (see your local legislative requirements – in Germany a minimum of 17 vol. % is required)
- What contaminants are in the ambient air?
- What are the concentrations of the contaminants?
- Are the contaminants in gas, particle, or vapour form? Or are they a mixture?
- Do the contaminants have adequate warning properties (e.g. smell or taste?)
- What are the applicable **O**ccupational **E**xposure **L**imits (OEL)?
- In addition to respiratory protection, is other personal protection equipment (e.g. eye or ear protection) required?

3. Which respirator should I choose?
It is necessary to answer all of the above questions (in 2.) to determine the needed protection factor. Table 1 gives you a brief overview of the nominal protection factors (NFP) for respiratory protective devices. The NFP is the highest permissible leakage level according to the approval requirements of the respective device. It indicates the mathmetically calculated maximum protection performance. To evaluate the minimum required protection factor – you will need to know the concentration of the hazardous substance you are dealing with as well as the assigned Occupational Exposure Limit (OEL) of the

substance. An OEL (like AGW) is the concentration of a specific airborne substance – averaged over a reference period, which shows no evidence to be threatening to ones health if exposed to it, at that concentration, on a daily basis.

Table 1: List of respiratory protective devices

Device	Marking	Nominal protection factor [1]
Particle filtering devices		
Filtering facepiece	FFP1	4
	FFP2	12
	FFP3	50
Quarter / Half mask	P1	4
with filter	P2	12
	P3	48
Full face mask	P1	5
with filter	P2	16
	P3	1000
PAPR	TH1P	10
with helmet or hood	TH2P	50
	TH3P	500
PAPR with quarter /	TM1P	20
half or full face mask	TM2P	200
(power on)	TM3P	2000
Gas filtering devices		
Quarter / half mask with filter		50
Full face mask with filter		2000

1) Values have been taken from the EN 529:2005 and BGR 190. Additional national and local regulations must be followed. Keep in mind that the performance indicated by the nominal protection factor can only be achieved when the respiratory protective device is worn correctly and has been properly maintained. Make sure you choose the size that fits best for your face. Also, a respirator should only be worn on cleanly shaven faces, as facial hair in the sealing area causes leakage.

Example: Determining the needed protection factor of your respirator

Contaminant:	Lead dust (particle protection is needed)
Concentration at the work place:	3 mg/m³
OEL (Occupational Exposure Limit):	0.1 mg/m³

Minimum protection factor =

$$\frac{\text{concentration of hazardous substance}}{\text{OEL}} = \frac{3}{0.1} = 30$$

You can see in table 1 that with a needed minimum protection factor of 30 for lead dust, you will need to use a P3-filter or together with a half mask, a full face mask, or PAPR. In the case where the contaminants are present in both particle and gas form, the nominal protection factor must be established for each one separately. For the selection of filtering devices, 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. %.

4. 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 table 1) by the Occupational Exposure Limit (OEL).

Maximum permissible concentration =

nominal protection factor x OEL

Example: Determining the maximum permissible concentration[2)]

Contaminant:	Chlorine dioxide
OEL:	0.1 ppm (Occupational Exposure Limit)
Respirator:	Full face mask with combination filter B-P2

Nominal protection factor x OEL = Maximum permissible concentration

Nominal protection factor of full face mask with gas filter: 2000

2000 x 0.1 = 200 ppm Chlorine dioxide

Nominal protection factor of full face mask with particle filter P2: 16

16 x 0.1 = 1.6 ppm Chlorine dioxide

When using a combination filter, which is the case in the above illustration, both of the maximum permissible concentrations need to be calculated, i.e. the value for the gas filter and the value for the particle filter. The lower of the two values should be taken as the maximum permissible concentration for this combination filter. For the example above therefore, the maximum permissible concentration for chorine dioxide when using a full face mask with a B-P2 combination filter is 1.6 ppm of Chlorine Dioxide

[2)] Values and terms of calculation have been taken from the EN529:2005 and BGR 190. Additional national and local regulations must be followed. Values of OEL based on AGW according to German regulations and there of time-weighted average values over a reference period and not any short term exposure limits.

5. How to select the right filter?

Contaminants come in different forms – generally: aerosols (solids/particles) and gases (gases, vapours). You can choose between the filter types to protect against one of these forms or a combination of both of them.

Solids / particles:	Dusts, fibres, fumes, microorganisms (e.g. viruses, bacteria, fungi, spores) and mists
Gaseous substances:	Gases and vapours

The following table shows you the color coding of filters according to EN14387 – which helps you to determine which filter-type is needed for the contaminants you are dealing with.

Table 2: Colour-Coding for Filters

Colour code	Filter type	Contaminants present
	AX[3]	Gases and vapours of organic compounds with boiling point ≤ 65 °C
	A	Gases and vapours of organic compounds with boiling point > 65 °C
	B	Inorganic gases and vapours, e.g. chlorine, hydrogen sulphide, hydrogen cyanide
	E	Sulphur dioxide, hydrogen chloride
	K	Ammonia and organic Ammonia derivates
	CO[4]	Carbon monoxide
	Hg[5]	Mercury vapour
	NO[6]	Nitrous gases including nitrogen monoxide
	Reactor[7]	Radioactive iodine including radioactive methyl iodide
	P	Particles

[3] AX filters may only be used as supplied from factory. Reuse and use against gascompounds is absolutely impermissible.
[4] CO filters for one time use only. Must be disposed after use. Special guidelines according to local regulations apply.
[5] Hg Filters can only be used for a maximum of 50 hours according to EN 14387.
[6] NO filters for one time use only. Must be disposed after use.
[7] Reactor filters: special guidelines according to local regulations apply.

Differentiation of filter types

Filters are split in different classes according to their capacity (gas filters) or their efficiency (particle filters), see table 3. Gas filters of class 2 may be used at higher concentrations or for a longer time than class 1 filters. The class of a particle filter indicates how efficient the filter is in filtering out particles. (class 1: 80%, class 2: 94%, class 3: 99.95%).

Table 3: Differentiation of filter types

Filter type	Filter class	Protection against	Maximum permissible concentration of toxic substance
Gas filter		Gases and vapours	
		Capacity:	50 times the OEL with half masks / 2000 times the OEL with full face masks, but maximal:
	1	Small	0.1 vol. % (1000 ppm)[8)]
	2	Medium	0.5 vol. % (5000 ppm)[8)]
	3	Large	1.0 vol. % (10000 ppm)[8)]
Particle filter		Particles	
		Efficiency (separation ability):	
	1	Small	4 times the OEL with half masks / 5 times the OEL with full face masks[9)]
	2	Medium	12 times the OEL with half masks / 16 times the OEL with full face masks[9)]
	3	Large	48 times the OEL with half masks / 1000 times the OEL with full face masks[9)]
Combined filter		Gases, vapours and particles	
	1-P2 2-P2 1-P3 2-P3	Appropriate combination of gas and particle filters	Appropriate combined levels

[8)] Values taken from the European Norm EN 14387
[9)] Values taken from the BGR 190

Additional national and local regulations must be followed.

Example Filter Types:

A2B2-P3 

A filter with the above mentioned colour code is suitable for the following contaminants:

A gases and vapours of organic compounds with a boiling point beyond 65 °C up to concentrations covered by filter class 2 and

B inorganic gases and vapours, e.g. chlorine, hydrogen sulphide, hydrogen cyanide, up to concentrations covered by filter class 2 and

P particles up to concentrations covered by filter class 3.

6. When using filtering respiratory protection, always keep the following in mind:

Never use any kind of filtering respiratory protection device . . .

- in oxygen deficient atmospheres (see local legislation for further guidelines e.g. Germany less than 17 vol. % O_2)
- in poorly ventilated areas or confined spaces, such as tanks, small rooms, tunnels, or vessels
- in atmospheres where the concentrations of the toxic contaminants are unknown
- when the concentration of a contaminant is higher than the maximum permissible concentration and / or the filter class capacity
- when the contaminant has poor or no warning properties (smell, taste or irritation), such as aniline, benzene, carbon monoxide, and ozone

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 combination filter, to filter out both gases and particles

7. How long does a filter last?

The service life of a respiratory filter depends on its size and on the conditions of use.

Factors affecting service life:

- concentration of the contaminants
- combination of the contaminants
- air humidity
- temperature
- duration of use
- breathing rate of the user

Since the service life is influenced by many factors, it is not possible to give an estimated service life.

Important is:

- local / company regulations

The end of service life is generally recognizable by:

- in gas filters by a noticeable taste or smell of the contaminant
- in particle filters by an increased breathing resistance
- in combination filters a noticeable taste or smell and/or an increased breathing resistance

Table 4: Examples of contaminants, their OELs (here: AGWs, valid in Germany) and filter recommendations

This is only a small choice of contaminants as example. For more information and a wider choice of contaminants please try our Dräger VOICE database of hazardous substances on the internet (www.draeger.com/voice).

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Acetaldehyde	50	91	AX (P3)	
Acetamide	–	–	A-P3	
Acetic Acid	10	25	B [E] (P2)	
Acetic anhydride	5	21	A (P2)	
Acetone	500	1200	AX (P3)	
Acetoncyanohydrine	–	–	A (P2)	
Acetonitrile	20	34	A (P3)	
Acetyl chloride	–	–	B-P2	
Acrolein	0.1	0.25	AX (P3)	
Acrylamide	–	–	A-P3	
Acrylic acid	10	30	A (P2)	
Acrylnitrile	carcinogen	(cat. 2)	A (P3)	
Aldrin	–	0.25 E	A-P3	
Allyl chloride	carcinogen	(cat. 3B)	AX (P3)	
1-Allyloxy-2, 3-epoxypropane	–	–	A (P2)	
Allylpropyldisulfide	2	12	B (P2)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Aluminium (respirable dust)	–	3	P2	
Aluminium hydroxide	–	3	P2	
Aluminiumoxide (respirable dust)	–	3	P2	
Aluminium oxide (fume)	–	3	P2	
o-Aminoazotoluol	–	–	A (P3)	
1-Aminobutane	2	6,1	A (P2)	
2-Aminobutane	2	6,1	AX (P2)	
4-Aminodiphenyl	–	–	A (P3)	
3-Amino-9-ethylcarbazol	–	–	A (P3)	
2-Amino-2-methylpropane	–	–	AX (P3)	
1-Aminopropane	–	–	K(P2)	
2-Aminopropane	5	12	K (P2)	
2-Aminopyridine	–	–	A-P3	
Amitrole	–	0.2 E	A (P2)	
Ammonia	20	14	K (P3)	
Ammonia in water	–	–	K (P2)	
Ammonia-solution 25%	20	14	K (P2)	
Ammonium nitrate	–	–	NO-P3	
Anilin e	2	7,7	A (P3)	
Anthracene	–	–	A-P3	
9,10-Anthraquinone	–	–	A (P2)	
Antimony	–	–	P2	
Antimony penta chlorid			B-P2	
Antimony trioxide	carcinogen	(cat. 2)	P3	
Antimony hydrogen	–	0.3	B (P3)	
ANTU	–	0.3 E	B-P3	
Arsenic acid	carcinogen	(cat. 1)	P3	
Arsenic pentoxide	carcinogen	(cat. 1)	P3	
Arsenic acid	carcinogen	(cat. 1)	P3	
Arsenic trioxide	carcinogen	(cat. 1)	P3	
Arsenic hydrogen	0.005	0.016	B (P3)	
Asbestos	carcinogen	(cat. 1)	P3	
Auramine	–	–	A-P3	
Aziridine	carcinogen	(cat. 2)	K (P3)	
Azo colorant	–	–	A (P3)	
B				
Barium chloride	–	0.5 E	P2	
Beechwood dust	–	5	P3	
Benzaldehyde	–	–	A (P2)	
Benzidine and its salts	–	–	A (P3)	
Benzene	1	3.2	A (P3)	
Benzene in water	–	–	A (P3)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Benzine in water	–	–	A (P2)	
Benzo[a]pyrene	carcinogen	(cat. 2)	A (P3)	
p-Benzochinone	carcinogen	(cat. 3B)	A-P3	
Benzo[e]pyrene	–	–	A (P3)	
Benzylamine	–	–	A (P2)	
Beryllium	carcinogen	(cat. 1)	P3	
Biphenyl	carcinogen	(cat. 3B)	A-P2	
Bis(tributylzinn)oxide	0.002	0.05	B-P3	
Bitumen	–	–	A-P3	
Borax	–	–	P2	
Boroxide	–	–	P2	
Boric acid	–	0.5	B-P2	
Boron trifluoride	0.35	1	B (P3)	
2-Brombutane	–	–	A (P2)	
Bromine	–	0.7	B (P2)	
Bromobenzene	–	–	A (P2)	
Bromochloro-methane	carcinogen	(cat. 3B)	A (P2)	
2-Bromo-2-chloro-1, 1,1-trifluorethane	5	41	AX (P3)	
Bromoform	–	–	A (P3)	
2-Bromopentane	–	–	A (P2)	
Brown coal tars	–	–	A-P3	
1,3-Butadiene	carcinogen	(cat. 1)	AX (P3)	
n-Butane	1000	2400	AX (P3)	
n-Butanal	–	–	A (P2)	
1-Butanol	100	310	A (P2)	
2-Butanol	–	–	A (P2)	
2-Butanone peroxide	–	–	B (P2)	
1,4-Butane sultone	–	–	A (P3)	
2,4-Butane sultone	–	–	A (P3)	
2-Butenal (trans)	–	–	A (P3)	
1-n-Butoxy-2, 3-epoxypropane	–	–	A (P3)	
1-tert-Butoxy-2, 3-epoxypropane	–	–	A (P3)	
2-Butoxyethanol	20	98	A (P2)	
2-Butoxyethylacetone	20	130	A (P2)	
1-Butyl acetat e	200	950	A (P2)	
2-Butyl acetate	200	950	A (P2)	
tert-Butyl acetate	200	950	A (P2)	
n-Butyl acrylate	2	11	A (P2)	
Butyl formiate	–	–	A (P2)	
tert-Butyl hydroperoxide	–	–	B (P2)	
1-Butyl mercaptan	0.5	1.9	B (P2)	
n-Butyl methacrylate	–	–	A (P2)	
tert-Butyl peracetate	–	–	B (P2)	
p-tert-Butyl phenol	0.08	0.5	A-P2	
Butyl stearate	–	–	A (P2)	
p-tert-Butyltoluol	–	–	A (P3)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
C				
Cadmium	–	–	P3	
Cadmium chloride	–	–	P3	
Cadmium oxide	–	–	P3	
Cadmium sulfate	–	–	P3	
Calcium arsenate	–	–	P3	
Calcium bisulfide solution	–	–	E-P2	
Calcium chromate	–	–	P3	
Calcium cyanamide	–	1 E	P2	
Calcium hydroxide	–	–	P2	
Calcium oxide	–	–	P2	
Camphor	2	13	A-P2	
E-Caprolactam	–	5 E	A-P2	
Carbaryl	–	5 E	B (P2)	
Carbon disulfide	5	16	B (P3)	
Carbon monoxide	30	35	CO	
Carbon tetrachloride	0.5	3.2	A (P3)	
Carbon tetrachloride in water	–	–	A (P3)	
caustic potash (>5%)	–	–	P2	
Caustic soda	–	–	P2	
p-Chloraniline	–	–	A-P3	
Chlorbenzene	10	47	A (P2)	
2-Chloro-1-bromoethane	–	–	A (P3)	
Chlordane	–	0.5	A (P3)	
Chlordecone	–	–	A (P3)	
Chlorine	0.5	1.5	B (P3)	
Chlorine dioxide	0.1	0.28	B (P2)	
Chloroacetic acid	1	4	A-P3	
Chloroacetic acid ethyl esther	1	5	A (P2)	
Chloroethane	40	110	AX (P3)	
2-Chloroethanol	1	3.3	A (P3)	
N-Chloroformyl-morpholin	–	–	A (P3)	
Chlorienated biphenyls (chlorine content 42%)	0.1	1.1	A (P3)	
Chlorienated biphenyls (chlorine content 54%)	0.05	0.7	A (P3)	
Chlorienated camphene (chlorine content 60%)	carcinogen (cat. 2)		A-P2	
3-Chloro-2-methyl-1-propene	–	–	A (P2)	
1-Chloronaphthaline	–	–	A (P2)	
1-Chloro-1-nitropropane	–	–	A NO-P3	
Chloroform	0.5	2.5	AX (P3)	
Chloroform in water	–	–	AX (P3)	
2-Chloroprene	carcinogen (cat. 2)		AX (P3)	
4-Chlor-o-toluidine	–	–	A-P3	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
5-Chlor-o-toluidine	–	–	A-P3	
1-Chlorpentane	–	–	A (P2)	
1-Chlorpropane	–	–	AX (P2)	
2-Chlorpropene	–	–	AX (P2)	
Chlortrifluoride	–	–	B (P2)	
Chromium carbonyl	–	–	CO (P3)	
Chromium oxychloride	carcinogen	(cat. 2)	B (P3)	
Chromic acid anhydrid	carcinogen	(cat. 2)	P3	
Citric acid	–	–	P2	
Coal tar	–	–	A-P3	
Cobalt	carcinogen	(cat. 2)	P3	
Cobalt acetate tetrahydrate	–	–	P2	
Coconut oil	–	–	P2	
Copper	–	0.1	P2	
Copper chloride (solution)	–	0.1	P2	
Copper sulfate (solution)	–	0.1	P2	
Cotton dust	–	1.5 E	P2	
Cristobalite (respirable dust)	carcinogen	(cat. 1)	P2	
Cumene	20	100	A (P2)	
Cyanoacrylate-methyl ester	2	9.2	B (P2)	
Cyanogen bromide	–	–	B-P3	
Cyanogen chloride	–	–	B (P3)	
Cyanuric chloride	–	–	B-P2	
Cyanuric chloride (suspension in water)	–	–	B-P2	
Cyclohexane	200	700	A (P2)	
Cyclohexanol	50	210	A-P2	
Cyclohexanone	20	80	A (P2)	
Cyclohexene	–	–	A (P2)	
Cyclohexylamine	2	8.2	A (P2)	
1,3-Cyclopentadiene	–	–	AX (P3)	
Cyclopentanone	–	–	A (P2)	
D				
DDT	–	1	A (P3)	
Decaborane	0.05	0.25	B-P2	
n-Decane	–	–	A (P2)	
n-Decanol	–	–	A (P2)	
Demeton	0.01	0.1	A B (P3)	
Demeton methyl	0.5	4.8	A B (P3)	
Diacetyl peroxide	–	–	B-P3	
2,4-Diaminoanisole	–	–	A (P3)	
3,3'-Diaminobenzidine	–	–	A (P3)	
3,3'-Diamino benzidine-tetrahydrochloride	–	–	A (P3)	
4,4'-Diamino diphenyl methane	carcinogen	(cat. 2)	A (P3)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
1,2-Diaminoethane	–	–	A (P2)	
2,4-Diaminotoluene	–	–	A-P3	
Diatomaceous earth, calcinated	–	0.3 A	P2	
Diatomaceous earth, uncalcinated	–	4 E	P2	
Diazinon	–	0.1 E	A (P2)	
Diazomethane	–	–	B (P3)	
Dibenzoyl peroxide	–	5 E	B-P2	
Dibenzylamine	–	–	A (P2)	
Dibenzylether	–	–	A (P2)	
Diboran e	–	–	B (P2)	
1,2-Dibromo-3-chlorpropane	–	–	A (P3)	
1,2-Dibroomethane	carcinogen	(cat. 2)	A (P3)	
Dibutyl ether	–	–	A (P2)	
Dibutyl phthalate	–	–	A (P2)	
3,3'-Dichlorbenzidine	carcinogen	(cat. 2)	A (P3)	
1,2-Dichlorbenzene	10	61	A (P2)	
1,3-Dichlorbenzene	3	20	A (P2)	
1,4-Dichlorbenzene	20	120	A-P2	
1,4-Dichloro-2-butene	–	–	A (P3)	
2,2'-Dichloro diethyl ether	10	58	A (P3)	
2,2'-Dichloro diethyl sulfide	–	–	B (P3)	
Dichloro diisopropyl ether	–	–	A (P2)	
Dichloro dimethyl ether	–	–	A (P3)	
1,1-Dichloroethane	100	410	AX (P3)	
1,2-Dichloroethane	–	–	A (P3)	
1,1-Dichloroethene	2	8	AX (P3)	
1,2-Dichloroethene (cis)	200	800	AX (P3)	
1,2-Dichloroethene (trans)	200	800	AX (P3)	
Dichlormethane	75	260	AX (P3)	
Dichlormethane in water	–	–	AX (P3)	
1,2-Dichloro methoxyethane	–	–	A (P3)	
1,1-Dichloro 1-nitroethane	–	–	A NO-P3	
2,4-Dichloro phenoxy aceatic acid	–	1	A (P2)	
1,2-Dichloropropane	carcinogen	(cat. 3B)	A (P2)	
1,3-Dichloro 2-propanol	–	–	A (P3)	
1,3-Dichloro propene (cis- und trans)	–	–	A (P3)	
2,2-Dichloro propionic acid	–	–	A (P2)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
1,2-Dichloro-1, 1,2,2-tetrafluoroethano	1000	7100	AX (P3)	
2,4-Dichlortoluene	5	30	A (P2)	
Dichlorvos	0.11	1	A (P3)	
Dicyclohexyl methane-4,4' -diisocyanate	–	–	A B (P3)	
Dicyclohexyl peroxide	–	–	B-P3	
Dicyclopentadiene	0.5	2.7	A-P2	
Dieldrin	–	0.25 E	A (P3)	
Diesel in water	–	–	A (P2)	
Dieselfuel	–	–	A (P2)	
Diethanolamine	–	–	A-P2	
Diethylamine	5	15	AX (P3)	
2-Diethylamino ethanol	5	24	A (P2)	
Diethylcarbamid acid chloride	–	–	B (P3)	
Diethyl carbonate	–	–	A (P2)	
Diethyleneglycole	10	44	A (P2)	
Diethylentriamine	–	–	A (P2)	
Diethylether	400	1200	AX (P3)	
N,N-Diethyl hydroxylamine	–	–	A (P2)	
Diethyl oxalate	–	–	A (P2)	
Diethyl phtalate	–	–	A (P2)	
Diethyl sebacate	–	–	A (P2)	
Diethyl sulfate	carcinogen	(cat. 2)	A (P3)	
Diethyl sulfide	–	–	B (P2)	
Difluorobromomethane	–	–	AX (P3)	
Difluorodibromo methane	–	–	AX (P3)	
Diglycidyl ether	carcinogen	(cat. 3B)	A (P3)	
1,2-Dihydroxybenzene	–	–	A-P2	
1,3-Dihydroxybenzene	4	20 E	A-P2	
1,4-Dihydroxybenzene	carcinogen	(cat. 2)	A-P2	
Diisobutylketone	–	–	A (P2)	
Diisopropylamine	–	–	A B (P2)	
Diisopropylether	200	850	A (P2)	
Dilauroyl peroxide	–	–	B (P2)	
3,3'-Dimethoxy-benzidine	–	–	A (P3)	
1,1-Dimethoxyethane	–	–	AX (P3)	
1,2-Dimethoxyethane	–	–	A (P2)	
Dimethoxymethan	1000	3200	AX (P3)	
N,N-Dimethyl acetamide	10	36	A (P2)	
Dimethylamine	2	3.7	K (P2)	
1-(Dimethylamino) -2-propanol	–	–	A (P2)	
N,N-Dimethylaniline	5	25	A (P3)	
3,3'-Dimethyl-benzidine	–	–	A (P3)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
_,_-Dimethylbenzyl-hydroperoxide	–	–	B-P2	
2,2-Dimethylbutane	200	720	AX (P3)	
2,3-Dimethylbutane	200	720	AX (P3)	
1,3-Dimethyl-butyl acetate	–	–	A (P2)	
Dimethyl carbamics acid chloride	–	–	B (P3)	
N,N-Dimethylcyclo-hexylamine	–	–	A (P2)	
3,3'-Dimethyl-4,4' -diaminodiphenylmethane	–	–	A (P3)	
Dimethyl disulfide	–	–	B (P3)	
N,N-Dimethyl-ethanolamine	–	–	A (P2)	
Dimethyl ether	1000	1900	AX (P3)	
N,N-Dimethyl-ethylamine	2	6.1	K (P2)	
N,N-Dimethyl-formamide	10	30	A (P2)	
1,1-Dimethylhydrazine	–	–	K (P3)	
1,2-Dimethylhydrazine	–	–	K (P3)	
Dimethyl-hydrogenphosphite	–	–	A (P2)	
Dimethyliso-propylamine	1	3.6	B (P2)	
2,2-Dimethyl propane	1000	3000	AX (P2)	
Dimethylsulfate	carcinogen	(cat. 2)	A (P3)	
Dimethylsulfide	–	–	B (P3)	
1,2-Dinitrobenzene	–	–	A NO-P3	
1,3-Dinitrobenzene	–	–	A NO-P3	
1,4-Dinitrobenzene	–	–	A NO-P3	
1,5-Dinitronaphthalene	–	–	A NO-P3	
2,6-Dinitronaphthalene	–	–	A NO-P3	
4,6-Dinitro-o-kresole	–	–	A NO-P3	
2,3-Dinitrotoluene	–	–	A NO-P3	
2,4-Dinitrotoluene	–	–	A NO-P3	
2,5-Dinitrotoluene	–	–	A NO-P3	
2,6-Dinitrotoluene	carcinogen	(cat. 2)	A NO-P3	
3,4-Dinitrotoluene	carcinogen	(cat. 2)	A NO-P3	
3,5-Dinitrotoluene	–	–	A NO-P3	
1,4-Dioxane	20	73	A (P3)	
1,3-Dioxolan	100	310	A (P2)	
Dipentene	20	110	A (P2)	
Diphenyl ether	1	7.1	A-P2	
Diphenyl ether/ biphenylcompound	–	–	A-P2	
Diphenylmethan-4, 4'-diisocyanate	–	0.05	B (P2)	
Diphenylmethan-4, 4'-diisocyanate, liquid (50 °C)	–	–	B-P2	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Diphosphorus-pentasulfide	–	1	P2	
Dipropylamine	–	–	A B (P2)	
Dipropylene-glycolmethyl ether	–	–	A (P2)	
Dipropyl ether	–	–	A (P2)	
Disulfur dichloride	–	–	B (P2)	
Di-sec-octyl phthalate	–	10	A (P2)	
Disulfiram	–	2 E	B (P2)	
Di-tert-butylperoxide	–	–	B (P2)	
1,2-Divinylbenzene	–	–	A (P2)	
1,3-Divinylbenzene	–	–	A (P2)	
Dodecylbenzenel	–	–	A (P2)	
E				
Endrin	–	0.1 E	A (P3)	
Enflurane	20	150	AX (P3)	
EPN	–	0.5	A (P3)	
1,2-Epoxybutane	–	–	AX (P3)	
1,2-Epoxypropane	carcinogen	(cat. 2)	AX (P3)	
Ethanol	500	960	A (P2)	
Ethanolamine	1	2,5	A (P2)	
2-Ethoxyethanol	5	19	A (P2)	
Ethyl acetate	400	1500	A (P2)	
Ethyl acrylate	5	21	A (P2)	
Ethylamine	5	9.4	K (P2)	
Ethylbenzene	100	440	A (P2)	
Ethyl carbamate	–	–	A-P3	
Ethylene glycol	10	26	A (P2)	
Ethylene glykol-monoisopropyl ether	5	22	A (P2)	
Ethylene oxide	carcinogen	(cat. 2)	AX (P3)	
Ethyl formate	100	310	AX (P3)	
2-Ethyl-1-hexanol	20	110	A (P2)	
2-Ethylhexylamine	–	–	A (P2)	
Ethyl mercaptan	0.5	1.3	AX (P3)	
Ethyl propionate	–	–	A (P2)	
F				
Fenthion	–	0.2 E	A-P3	
Ferbam	–	–	A (P2)	
Ferrovanadium (dust)	–	–	P2	
Fibers (inorg.)	–	–	P2	
Fluoride	1	1.6	B (P3)	
Fluorobenzene	–	–	A (P2)	
Formaldehyde	0.3	0.37	B (P3)	
Formamide	–	–	A (P2)	
Formic acid	5	9,5	B [E] (P2)	
Furan	–	–	AX (P2)	
Furfurol	carcinogen	(cat. 3B)	A (P3)	
Furfurylalcohol	10	41	A (P2)	
G				
Premium gasoline	–	–	A (P2)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Regular gasoline, lead free	–	–	A (P2)	
Gelatine	–	–	P2	
Glutaraldehyde	0.05	0.21	A (P2)	
Glycerine	–	50	A (P2)	
Glycidol	carcinogen	(Kat. 2)	A (P3)	
Glyoxal	–	–	AX (P2)	
Graphite	–	3	P2	
Graphite, dust compounds (>1% quarz)	–	–	P2	
H				
Hafnium	–	–	P2	
Heptachlor	–	0.5 E	A-P3	
n-Heptane	500	2100	A (P2)	
2-Heptanone	–	238	A (P2)	
3-Heptanone	10	47	A (P2)	
4-Heptanone	–	–	A (P2)	
Hexachlorobenzene	–	–	A (P2)	
Hexachloroethane	1	9.8	A-P2	
Hexamethylen-diamin	–	–	A-P2	
1,6-Hexa-methylene diisocyanate	0.005	0.035	B-P3	
Hexamethylene-tetramin	–	–	B K (P2)	
Hexamethyl-phosphoric triamide	–	–	A (P3)	
n-Hexane	50	180	A (P2)	
n-Hexanol	50	210	A (P2)	
2-Hexanone	5	21	A (P3)	
1-Hexen	–	–	AX (P2)	
2-Hexen (cis- und trans isomers)	–	–	A (P2)	
Hexylamin	–	–	A (P2)	
Hexylenglycol	10	49	A (P2)	
Hydrazine	carcinogen	(cat. 2)	K (P3)	
Hydrazoic acid	0.1	0.18	B (P2)	
Hydrochloric acid 32%	2	3	B [E]-P2	
Hydrochloric acid fuming 37%	–	–	B [E]-P2	
Hydrogen bromide	2	6.7	B [E] (P2)	
Hydrogen chloride	2	3	B [E]-P2	
Hydrogen cyanide	1.9	2.1	B (P3)	
Hydrogen cyanide in water	–	–	B (P3)	
Hydrogen fluoride	1	0.83	B [E] (P3)	
Hydrogen peroxide	0.5	0.71	CO [NO]-P3	
Hydrogen selenide	–	0.05 E	B (P3)	
Hydrogen sulfide	5	7.1	B (P3)	
Hydroxylamine	–	–	B [K] (P2)	
4-Hydroxy-4-methyl pentan-2-on	20	96	A (P2)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
I				
Iod	–	–	B-P2	
Iodmethane	–	–	AX (P3)	
Iron chloride	–	–	B (P2)	
Iron oxide	–	3	P2	
Iron pentacarbonyl	0.1	0.81	CO (P3)	
Iron sulfate	–	–	P2	
Isobutyl acetate	100	480	A (P2)	
Isobutylamine	2	6.1	A (P2)	
Isobutylformate	–	–	A (P2)	
Isobutyraldehyde	–	–	AX (P3)	
Isoflurane	–	–	AX (P3)	
Isooctane	500	2400	A (P2)	
Isophoron di-isocyanate	0.005	0.046	B (P3)	
Isopropyl acetate	100	420	A (P2)	
Isopropyl chloride	–	–	AX (P2)	
Isopropyl nitrate	–	–	A NO-P2	
Isopropyl oil	–	–	A (P3)	
J				
Jet fuel F34	–	–	A (P2)	
K				
Kerosene	–	–	A (P2)	
Kerosene in water	–	–	A (P2)	
L				
Lactic acid	–	–	P2	
Lead	–	0.15	P2	
Lead(II)acetate-Trihydrat	–	–	P2	
Lead arsenate	–	–	P3	
Lead chromate	–	–	P3	
Lead nitrate	–	0.15	NO-P3	
Linseed oil	–	–	P2	
Lindane	–	0.1	A-P3	
Lithium hydride	–	0.025 E	P3	
M				
Magnesiumchloride (solution)	–	–	P2	
Magnesiumhydroxide (solution)	–	–	P2	
Magnesiumoxide	–	3	P2	
Magnesiumsulfate	–	–	P2	
Malathion	–	15 E	A (P2)	
Maleic acid	–	–	A-P2	
Maleic acid anhydride	0.1	0.41	A-P2	
Manganese	–	0.5 E	P2	
Mercapto-acetic acid	–	–	B (P3)	
2-Mercaptoethanol	–	–	B (P3)	
Mercury	–	0.1	Hg-P3	
Mercury chloride (solution)	–	0.1 E	P3	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Methacrylonitrile	–	–	A (P3)	
Methacrylic acid	5	18	A (P2)	
Methanol	200	270	AX (P3)	
Methoxychlor	–	15 E	A (P2)	
2-Methoxyethanol	5	16	A (P2)	
2-Methoxyethyl acetate	5	25	A (P2)	
1-Methoxy-2-propanol	100	370	A (P2)	
2-Methoxy-1-propanol	5	19	A (P2)	
1-Methoxy-2-propylacetate	50	270	A (P2)	
2-Methoxy-1-propylacetate	5	28	A (P2)	
Methyl acetate	200	610	AX (P3)	
Methyl acrylate	5	18	A (P2)	
Methylamine	10	13	K (P2)	
N-Methylaniline	0.5	2.2	A (P3)	
Methyl bromide	–	–	AX (P3)	
2-Methylbutane	1000	3000	AX (P3)	
Methylcyclohexane	200	810	A (P2)	
Methylcyclohexanol	6	28	A (P2)	
4,4'-Methylene-bis(2-chloranilin)	–	0.02	A (P3)	
4,4'-Methylene-bis (N,N-dimethylanilin)	–	0.1 E	A (P3)	
Methyl ethyl ketone	200	600	A (P2)	
Methylformate	50	120	AX (P3)	
N-Methyl hydrazine	–	–	B (P3)	
Methyl isobutyl ketone	20	83	A (P2)	
Methyl isocyanate	0.01	0.024	B (P3)	
Methyl mercaptan	0.5	1	B (P2)	
Methyl methacrylate	50	210	A (P2)	
N-Methyl-2,4,6-N-tetranitroanilin	carcinogen	(cat. 3B)	A NO-P3	
2-Methylpentan	200	720	AX (P2)	
3-Methylpentan	200	720	AX (P2)	
4-Methylpentan-2-ol	20	85	A (P2)	
4-Methylpent-3-en-2-on	5	20	A (P2)	
2-Methyl-1-propanol	100	310	A B (P2)	
2-Methyl-2-propanthiol	–	–	AX B (P2)	
Methylpropionate	–	–	A (P2)	
Methylpropylketone	–	–	A (P2)	
N-Methyl-2-pyrrolidone (vapor)	20	82	A (P2)	
Methyl mercury	carcinogen	(cat. 3B)	Hg (P3)	
Methylstyrene	100	490	A (P2)	
Methyl-tert.-butylether	50	180	AX (P3)	
Mevinphos	0.01	0.093	A-P3	
Michler's Ketone	–	–	A (P3)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Mineral fiber	–	–	P3	
Monochloro-dimethyl ether	–	–	AX (P3)	
Morpholine	10	36	A (P2)	
Motor oils, used	–	–	A-P3	
N				
Naled	–	1 E	A-P2	
Naphta	–	–	A (P2)	
Naphthalene	carcinogen	(cat. 2)	A-P2	
1-Naphthylamine	0.17	1 E	A-P3	
2-Naphthylamine	carcinogen	(cat. 1)	A-P3	
1,5-Naphthylene-diisocyanate	–	0.05	B (P3)	
Nickel	carcinogen	(cat. 1)	P3	
Nickel, sulfidic ores	carcinogen	(cat. 1)	P3	
Nickel carbonate	carcinogen	(cat. 1)	P3	
Nickel(II)-chloride	carcinogen	(cat. 1)	P2	
Nickel oxide	carcinogen	(cat. 1)	P3	
Nickel compounds in the form of respirable droplets	carcinogen	(cat. 1)	P3	
Nickel sulfide	carcinogen	(cat. 1)	P3	
Nickel tetracarbonyl	–	–	CO-P3	
Nicotine	–	0.5	A (P3)	
Nitric acid	1	2.6	B NO-P3	
Nitric acid 65%	1	2.6	NO-P3	
Nitric acid 90%	1	2.6	NO-P3	
5-Nitroacenaphthene	–	–	A NO-P3	
2-Nitro-4-aminophenol	–	–	A NO-P3	
4-Nitroaniline	carcinogen	(cat. 3A)	A NO-P3	
Nitrobenzene	–	1	A NO-P3	
4-Nitrobiphenyl	–	–	A NO-P3	
Nitroethane	100	310	A NO-P3	
Nitrogen dioxide	carcinogen	(cat. 3B)	NO-P3	
Nitrogen monoxide	–	–	NO-P3	
Nitroglycerine	carcinogen	(cat. 3B)	A NO-P3	
Nitroglycol	0.05	0.32	A NO-P3	
Nitromethane	carcinogen	(cat. 3B)	A NO-P3	
1-Nitronaphthalene	–	–	A NO-P3	
2-Nitronaphthalene	carcinogen	(cat. 2)	A NO-P3	
5-Nitro-o-toluidine	–	–	A NO-P3	
2-Nitro-p-phenylendiamine	–	–	A NO-P3	
1-Nitropropane	25	92	A NO-P3	
2-Nitropropane	carcinogen	(cat. 2)	A NO-P3	
Nitropyrene (Mono,Di,Tri,Tetra)	–	–	A NO-P3	
Nitrogen gases	–	–	NO-P3	
N-Nitrosodi-ethanolamin	–	–	A NO-P3	
N-Nitrosodi-ethylamine	–	–	A NO-P3	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
N-Nitrosodi-i-propylamine	–	–	A NO-P3	
N-Nitrosodi-methylamine	–	–	A NO-P3	
N-Nitrosodi-n-butylamine	–	–	A NO-P3	
N-Nitrosodi-n-propylamine	–	–	A NO-P3	
N-Nitrosoethyl-phenylamine	–	–	A NO-P3	
N-Nitrosomethyl-ethylamine	–	–	A NO-P3	
N-Nitrosomethyl-phenylamine	–	–	A NO-P3	
N-Nitrosomorpholine	–	–	A NO-P3	
N-Nitrosopiperidine	–	–	A NO-P3	
N-Nitrosopyrrolidine	–	–	A NO-P3	
2-Nitrotoluene	carcinogen	(cat. 2)	A NO-P3	
3-Nitrotoluene	carcinogen	(cat. 3B)	A NO-P3	
4-Nitrotoluene	carcinogen	(cat. 3B)	A NO-P3	
n-Nonane	–	–	A (P2)	
O				
Oakwood dust	–	5	P3	
n-Octane	500	2400	A (P2)	
n-Octanol	20	106	A (P2)	
1-Octen	–	–	A (P2)	
Oil	–	–	P2	
Osmium tetraoxide	–	–	A-P3	
Oxalic acid dinitrile	5	11	B (P3)	
4,4'-Oxydianilene	–	–	A (P3)	
Ozone	carcinogen	(cat. 3B)	NO-P3	
P				
Palmitic acid	–	–	P2	
Paraldehyd	–	–	A (P2)	
Paraquat dichloride	–	0.1 E	A (P3)	
Parathion (-ethyl)	–	0.1 E	A (P3)	
Pentaborene	0.005	0.013	B-P3	
Pentachloroethane	5	42	A (P3)	
Pentachloronaphthaline	–	–	A-P2	
Pentachlorophenol	–	–	A-P3	
n-Pentane	1000	3000	AX (P3)	
n-Pentanol	20	73	A (P2)	
n-Pentylacetate	50	270	A (P2)	
Perchloroethylene	carcinogen	(cat. 3B)	A (P3)	
Perchloroethylene in water	–	–	A (P3)	
Peracetic acid	–	–	B (P2)	
Permethrin	–	–	A (P2)	
Petrol	–	–	A (P2)	
Phenol	2	7.8	A-P3	
Phenolphthalein dissolved in ethyl alcohol	–	–	A (P2)	
Phenyl acetate	–	–	A (P2)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
p-Phenylendiamine	–	0.1 E	A (P3)	
Phenylhydrazine	carcinogen	(cat. 3B)	A (P3)	
Phenyl isocyanate	0.01	0.05	B (P2)	
N-Phenyl-2-naphthylamine	–	–	A-P3	
Phosgene	0.02	0.082	B (P3)	
Phosphorous oxychloride	0.2	1.3	B (P2)	
Phosphorous pentachloride	–	1 E	B-P2	
Phosphorous pentoxide	–	2 E	P2	
Phosphorous acid	–	2	P2	
Phosphorous trichloride	0.5	2.8	B (P2)	
Hydrogen phosphide	0.1	0.14	B (P3)	
Phthalic anhydride	–	–	A-P2	
Polyviny lchloride	–	3	P2	
Potassium chloride	–	–	P2	
Potassium chromate	carcinogen	(cat. 2)	P2	
Potassium cyanide	–	–	B-P3	
Potassium hydroxide (anhydrous)	–	–	P2	
Potassium sulfate	–	–	P2	
Propanal	–	–	AX (P2)	
2-Propanol	200	500	A (P2)	
n-Propanol	–	–	A (P2)	
1,3-Propane sultone	–	–	A-P3	
2-Propanthiol	–	–	AX B (P2)	
Propargyl alcohol	2	4.7	A (P3)	
2-Propen-1-ol	2	4.8	A (P3)	
iso-Propenyl-benzene	50	250	A (P2)	
ϵ-Propiolactone	–	–	A (P3)	
Propionic acid	10	31	B (P2)	
Propoxur	–	2 E	B (P3)	
n-Propyl acetate	100	420	A (P2)	
1,2-Propylene-glycoldinitrate	0.05	0.34	A NO-P3	
Propylene imine	–	–	AX (P3)	
n-Propyl formiate	–	–	A (P2)	
Propyl mercaptan	–	–	B (P2)	
Pyrethrum	–	1 E	A (P2)	
Pyridine	carcinogen	(cat. 3B)	A (P2)	
Q				
Quarz	carcinogen	(cat. 1)	P2	
Fused quartz	–	0.3 A	A P2	
R				
Rotenone (standard)	–	–	A (P3)	
S				
Salicylic acid	–	–	A (P2)	
Sodium azide	–	0.2	P3	
Sodium benzoate	–	–	P2	
Sodium chlorate	–	–	P2	
Sodium chloride	–	–	P2	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Sodium chromate	carcinogen	(cat. 2)	P3	
Sodium cyanide	–	3.8	B-P3	
Sodium fluoroacetate	–	0.05 E	B (P3)	
Sodium hydrogen carbonate	–	–	P2	
Sodium hydroxide (anhydrous)	–	–	P2	
Sodium silicate solution	–	–	P2	
Sodium sulfate	–	–	P2	
Sodium thiosulfate	–	–	P2	
Sulphur dichloride	–	–	B-P2	
Sulphur dioxide	0.5	1.3	E (P3)	
Sulphur pentafluoride	–	–	B (P2)	
Sulphuric acid	–	0.1	P2	
Sulphuric acid fuming 65% SO_2	–	–	B-P2	
Sulphur trioxide	–	–	B-P2	
Soap solution	–	–	P2	
Selenium, amorphous	–	0.05 E	P3	
Silver	–	0.1 E	P3	
Silver nitrate solution	–	0.01 E	P2	
Fused silica	–	0.3 A	P2	
Silica fume	–	0.3	P2	
Silica acids, colloidal amorphous	–	4 E	P2	
Silicone carbide (fibre-free)	–	3	P2	
Stearic acid	–	–	A (P2)	
Strontiumchromate	–	–	P3	
Strychnine	–	–	A (P3)	
Styrene	20	86	A (P2)	
Sulfotep	0.0075	0.1	A (P3)	
Sulfuryl chloride	–	10	B-P2	
T				
Talc (free of asbestos fibers)	carcinogen	(cat. 3B)	P2	
Tannic Acid	–	–	P2	
Tantalum	–	3	P2	
Tar fumes	–	–	A-P3	
Tartaric acid	–	–	P2	
Tellurium and compounds	–	–	P3	
TEPP	0.005	0.06	A (P3)	
Tetra ethyl lead	–	0.05	A (P3)	
Turpentine oil	carcinogen	(cat. 3A)	A (P2)	
1,1,2,2-Tetra-bromoethane	–	–	A (P3)	
2,3,7,8-Tetrachloro-dibenzo-p-dioxine	–	–	A (P3)	
1,1,1,2-Tetrachloro-2, 2-difluoroethane	200	1700	A-P2	
1,1,2,2-Tetrachloro-1, 2-difluorethan	200	1700	A-P2	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
1,1,2,2-Tetra-chloroethane	1	7	A (P3)	
Tetraethyl silicate	10	86	A (P2)	
Tetrahydrofuran	50	150	A (P2)	
Tetrahydrothiophene	50	180	B (P2)	
1,2,4,5-Tetra-methylbenzene	–	–	A (P2)	
Tetramethyl succinnitrile	–	1	A-P2	
Tetranitromethane	carcinogen	(cat. 2)	NO-P3	
Tetraphosphorus	–	0.01	P3	
4,4'-Thiodianiline	–	–	B (P3)	
Thiourea	–	–	B (P3)	
Thionyl chloride	–	–	B (P2)	
Thiram	–	1 E	B (P2)	
Tin(IV) chloride	–	2 E	B-P2	
Titanium dioxide	–	3	P2	
o-Toluidine	–	–	A (P3)	
p-Toluidine	–	–	A-P3	
Toluene	50	190	A (P2)	
Toluoene in water	–	–	A (P2)	
2,4-Toluylen-diisocyanate	0.005	0.035	A B (P3)	
2,6-Toluylen diisocyanate	0.005	0.035	A B (P3)	
Tributylphosphate	1	11	A (P2)	
Tributyltin benzoate	0.002	0.05	B-P3	
Tributyltin chloride	0.002	0.05	B-P3	
Tributyltin fluoride	0.002	0.05	B-P3	
Tributyltin linoleate	0.002	0.05	B-P2	
Tributyltin methacrylate	0.002	0.05	B-P3	
Tributyltin naphthenate	0.002	0.05	B-P2	
1,2,4-Trichlorobenzene	0.5	3.8	A (P2)	
2,3,4-Trichloro-1-butene	–	–	A (P3)	
1,1,1-Trichloroethane	200	1100	A (P2)	
1,1,2-Trichloroethane	10	55	A (P3)	
1,1,1-Trichloroethane in water	–	–	A (P2)	
Trichloroethylene	carcinogen	(cat. 1)	A (P3)	
Trichloroethylene in water	–	–	A (P3)	
Trichloronaphthalene	–	–	A-P2	
Trichloronitromethane	0.1	0.68	A NO-P3	
2,4,5-Trichloro phenoxyacetic acid	–	10	B (P2)	
1,2,3-Trichloropropane	carcinogen	(cat. 2)	A (P2)	
, , -Trichlorotoluene	carcinogen	(cat. 2)	B (P3)	
Tridymite	carcinogen	(cat. 1)	P2	
Triethanolamine	–	–	A (P2)	
Triethylamine	1	4.2	A (P2)	
Triethylentetramine	–	–	A (P2)	

Contaminants	OEL		Filter	Colour
	ppm	mg/m³	type	code
Trimanganese tetroxide	–	0.5	P2	
Trimellitic anhydride (fume)	–	0.04	A (P3)	
Trimethylamine	2	4.9	B (P2)	
2,4,5-Trimethylaniline	–	–	A-P3	
1,2,3-Trimethylbenzene	20	100	A (P2)	
1,2,4-Trimethylbenzene	20	100	A (P2)	
1,3,5-Trimethylbenzene	20	100	A (P2)	
3,5,5-Trimethyl-2-cyclohexen-1-one	2	11	A (P2)	
2,4,4-Trimethyl-1-pentene	–	–	A (P2)	
Trimethyl phosphate	–	–	A (P3)	
2,4,7-Trinitrofluorenone	–	–	A NO-P3	
2,4,6-Trinitrophenol	–	0.1 E	A NO-P3	
2,4,6-Trinitrotoluene	0.011	0.1	A NO-P3	
Tri-p-cresyl phosphate	–	–	A (P2)	
U				
n-Undecane	–	–	A (P2)	
V				
Vanadium pentoxide	–	0.05	A P3	
Vinyl acetate	5	18	A (P2)	
Vinyl bromide	–	–	AX (P3)	
Vinyl chloride	3	7.77	AX (P3)	
4-Vinyl-1,2-cyclohexendiepoxid	–	–	A (P3)	
W				
Warfarin	–	0.5	A-P3	
White spirit	500	960	A (P2)	
Wood oil	–	–	P2	
Wood dust (except for beech and oak dust)	–	–	P3	
X				
Xylenol	–	–	A-P3	
Xylidine	carcinogen	(Kat. 3A)	A-P3	
Xyloene	100	440	A (P2)	
Xylene in water	–	–	A (P2)	
Y				
Yttrium	–	–	P2	
Z				
Zinc chromate	–	–	P3	
Zinc sulfate	–	–	P2	
Zinc oxide fume	–	1	P2	

Indication E: with reference to the inhalable fraction

Indication A: with reference to the alveolar fraction

[11] A gas filter is required; if the contaminant is particulate or if particles are present, a combination filter is required, e.g. formaldehyde: B2 (P3).

[12] A combination filter is required, e.g. lindane: A-P.

No responsibility is taken for the correctness of this information.

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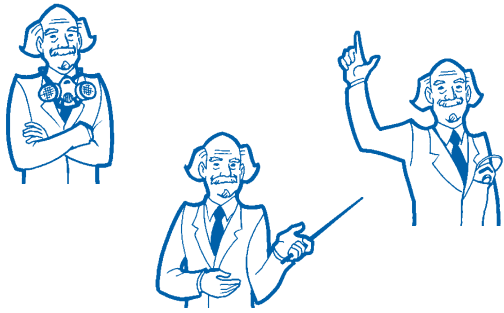

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