Technical Data Sheet

MSA The Safety Company

Description

Description	93 A/St
Part Number	10115189
Marking according to EN	A2 - P3
Conditions of use	• organic gases and vapors with a boiling point > 65° C • particles
Colour code	brown white
Labels	

Characteristics

Weight [g]	260		
Diameter [mm]	107		
Height incl. thread [mm]	78		
Connection	EN 148 - 1		

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	1,20 mbar
	95 l / min	9,80 mbar	4,60 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 Vol.-%]
Class 2	5000 ppm [0,5 Vol.-%]

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
A2	cyclohexane [C_6H_{12}]	35 min	60 min
Filter type and class	Particles of reference	EN 143 requirements	Typical values
P3	sodium chloride [NaCl] paraffin oil	0,05% 0,05%	< 0,01% < 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,0 years

Technical Data Sheet

MSA The Safety Company

Description

Description	93 AB/St
Part Number	10097993
Marking according to EN	A2, B2 - P3
Conditions of use	• organic gases and vapors with a boiling point > 65° C • inorganic gases and vapors, e.g. chlorine, hydrogen sulfide, hydrogen cyanide • particles
Colour code	brown grey white
Labels	

Characteristics

Weight [g]	270
Diameter [mm]	107
Height incl. thread [mm]	78
Connection	EN 148 - 1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	1,40 mbar
	95 l / min	9,80 mbar	5,50 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 Vol.-%]
Class 2	5000 ppm [0,5 Vol.-%]

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
A2	cyclohexane [C_6H_{12}]	35 min	60 min
B2	chlorine [Cl_2]	20 min	40 min
	hydrogen sulfide [H_2S]	40 min	60 min
	hydrocyanic acid [HCN]	25 min	45 min
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	< 0,01%
	paraffin oil	0,05%	< 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,0 years

Technical Data Sheet

MSA The Safety Company

Description

Description	93 ABEK Hg / St
Part Number	10097231
Marking according to EN	A2, B2, E2, K1, Hg - P3
Conditions of use	• organic gases and vapors with a boiling point > 65° C • inorganic gases and vapors, e.g. chlorine, hydrogen sulfide, hydrogen cyanide • sulfur dioxide, hydrogen chloride and other acid gases • ammonia and organic ammonia derivatives • mercury • particles

Colour code

brown
grey
yellow
green
red
white

Labels

Characteristics

Weight [g]	295
Diameter [mm]	107
Height incl. thread [mm]	78
Connection	EN 148-1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,6 mbar	1,70 mbar
	95 l / min	9,8 mbar	6,50 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 Vol.-%]
Class 2	5000 ppm [0,5 Vol.-%]
Hg	13 mg/m³

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
A2	cyclohexane [C_6H_{12}]	35 min	45 min
B2	chlorine [Cl_2]	20 min	40 min
	hydrogen sulfide [H_2S]	40 min	55 min
	hydrocyanic acid [HCN]	25 min	45 min
E2	sulfur dioxide [SO_2]	20 min	22 min
K1	ammonia [NH_3]	50 min	60 min
Hg	mercury [vapor]	100 h	> 100 h
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	< 0,01%
	paraffin oil	0,05%	< 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,0 years

The maximum service time of the special filter against mercury is 50 h. This applies if no other hazardous agents has penetrated the filter earlier. The filter must always be replaced in case of penetration by a hazardous agent.

Technical Data Sheet

MSA The Safety Company

Description

Description	93 ABEK 2 Hg / St
Part Number	10097232
Marking according to EN	A2, B2, E2, K2, Hg - P3
Conditions of use	• organic gases and vapors with a boiling point > 65° C • inorganic gases and vapors, e.g. chlorine, hydrogen sulfide, hydrogen cyanide • sulfur dioxide, hydrogen chloride and other acid gases • ammonia and organic ammonia derivatives • mercury • particles

Colour code

brown
grey
yellow
green
red
white

Labels

Characteristics

Weight [g]	350
Diameter [mm]	107
Height incl. thread [mm]	88
Connection	EN 148 - 1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,6 mbar	2.00 mbar
	95 l / min	9,8 mbar	8,00 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 Vol.-%]
Class 2	5000 ppm [0,5 Vol.-%]
Hg	13 mg / m³

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
A2	cyclohexane [C_6H_{12}]	35 min	60 min
B2	chlorine [Cl_2]	20 min	55 min
	hydrogen sulfide [H_2S]	40 min	65 min
	hydrocyanic acid [HCN]	25 min	60 min
E2	sulfur dioxide [SO_2]	20 min	33 min
K2	ammonia [NH_3]	40 min	55 min
Hg	mercury [vapor]	100 h	> 100 h
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	< 0,01%
	paraffin oil	0,05%	< 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,0 years

The maximum service time of the special filter against mercury is 50 h. This applies if no other hazardous agents has penetrated the filter earlier. The filter must always be replaced in case of penetration by a hazardous agent.

Technical Data Sheet

MSA The Safety Company

Description

Description	F 93 ABEK 2 Hg / St
Part Number	10098022
Marking according to EN	A2, B2, E2, K2, Hg - P3
Conditions of use	• organic gases and vapors with a boiling point > 65° C • inorganic gases and vapors, e.g. chlorine, hydrogen sulfide, hydrogen cyanide • sulfur dioxide, hydrogen chloride and other acid gases • ammonia and organic ammonia derivatives • mercury • particles

Colour code

brown
grey
yellow
green
red
white

Labels

CE 0121

Characteristics

Weight [g]	370
Diameter [mm]	107
Height incl. thread [mm]	90
Connection	EN 148-3 [M 45 x 3]

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	2.00 mbar
	95 l / min	9,80 mbar	8,00 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 Vol.-%]
Class 2	5000 ppm [0,5 Vol.-%]
Hg	13 mg / m³

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
A2	cyclohexane [C_6H_{12}]	35 min	60 min
B2	chlorine [Cl_2]	20 min	55 min
	hydrogen sulfide [H_2S]	40 min	65 min
	hydrocyanic acid [HCN]	25 min	60 min
E2	sulfur dioxide [SO_2]	20 min	33 min
K2	ammonia [NH_3]	40 min	55 min
Hg	mercury [vapor]	100 h	> 100 h
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	< 0,01%
	paraffin oil	0,05%	< 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,0 years

The maximum service time of the special filter against mercury is 50 h. This applies if no other hazardous agents has penetrated the filter earlier. The filter must always be replaced in case of penetration by a hazardous agent.

Technical Data Sheet

MSA The Safety Company

Description

Description	93 AX / St
Part Number	10108409
Marking according to EN	AX, P3
Conditions of use	• low-boiling organic compounds [boiling point ≤ 65° C] of groups 1 and 2 • particles

Colour code	brown white

Labels

Characteristics

Weight [g]	260
Diameter [mm]	107
Height incl. thread [mm]	88
Connection	EN 148-1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	1,55 mbar
	95 l / min	9,80 mbar	5,80 mbar

Concentration of Testing Gases

dimethyl ether	0,05 Vol.-%
isobutane	0,25 Vol. %

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
AX	dimethyl ether [CH_3OCH_3]	50 min	75 min
	isobutane [C_4H_{10}]	50 min	75 min
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	< 0,01%
	paraffin oil	0,05%	< 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / unimpregnated activated carbon

Details/Special Regulations

• Against the low boiling compounds of groups 1 and 2 gas filters AX according to EN 14387 must be used. The following maximum concentrations and usetimes apply:

low boiling compounds group	max. concentration [ml/m³]	max. usetime [min]
1	100	40
	500	20
2	1000	60
	5000	20

• For low boiling compounds of group 3 protection is provided by filters other than AX [e.g. type B or K], for low boiling compounds of group 4 gas filters provide no sufficient protection.

• AX filters may also be used as A2 filters. In this case however, they shall not be used against low boiling compounds.

• Use of AX filters against mixtures of low boiling compounds or mixtures of low boiling compounds and other organic compounds is not permitted because desorption effects max occur.

• Only factory sealed AX filters must be used. Within one work shift [max. 8 hours] repeated use is permitted, provided the maximum usetime, listed in the above table is not exceeded. Further use is not permitted.

Storage conditions & time **5°C to 50 °C < 90 % r.h..** **6,5 years**

Technical Data Sheet

MSA The Safety Company

Description

Description	93 Hg / St
Part Number	10115201
Marking according to EN	Hg-P3
Conditions of use	• mercury and particles
Colour code	red white
Labels	

Characteristics

Weight [g]	270
Diameter [mm]	107
Height incl. thread [mm]	78
Connection	EN 148-1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	1,20 mbar
	95 l / min	9,80 mbar	4,60 mbar

Concentration of Testing Gases

Hg	13 mg/m³

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
Hg	mercury [vapor]	100 h	> 190 h
Filter type and class	Particles of reference	EN 143 requirements	Typical values
P3	sodium chloride [NaCl] paraffin oil	0,05% 0,05%	< 0,01% < 0,01%
R D	Reusable according EN 143:2000/A1:2006 Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,0 years

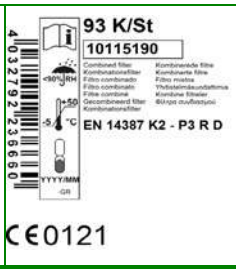
The maximum service time of the special filter against mercury is 50 h. This applies if no other hazardous agents has penetrated the filter earlier. The filter must always be replaced in case of penetration by a hazardous agent.

Technical Data Sheet

MSA The Safety Company

Description

Description	93 K/St
Part Number	10115190
Marking according to EN	K2 - P3
Conditions of use	• ammonia and organic ammonia derivatives • particles
Colour code	green white
Labels	



Characteristics

Weight [g]	295
Diameter [mm]	107
Height incl. thread [mm]	78
Connection	EN 148-1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	1,40 mbar
	95 l / min	9,80 mbar	5,50 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 Vol.-%]
Class 2	5000 ppm [0,5 Vol.-%]

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
K2	ammonia [NH_3]	40 min	**60 min**
Filter type and class	Particles of reference	EN 143 requirements	Typical values
P3	sodium chloride [NaCl] paraffin oil	0,05% 0,05%	< 0,01% < 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 6,5 years

Technical Data Sheet

MSA The Safety Company

Description

Description	93 NO CO / St
Part Number	10115314
Marking according to EN	NO-P3, CO
Conditions of use	• nitrous gases, e.g. NO, NO_2, NO_X • carbon monoxide • particles

Colour code

black
blue
white

Labels

Characteristics

Weight [g]	470
Diameter [mm]	108,2
Height incl. thread [mm]	78
Connection	EN 148-1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,60 mbar	1.50 mbar
	95 l / min	9,80 mbar	5,50 mbar

Concentration of Testing Gases

NO, CO	2500 ppm [0,25 Vol.-%]

Performances

Filter type and class	Gases of reference	EN 14387/58620 requirements	Typical values
NO	nitric oxide [NO] nitrogen dioxide [NO_2]	20 min 20 min	73 min 42 min
CO 20	carbon monoxide [CO]	< 200 ppm [temporal weighted average / 20 min]	35 min
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl] paraffin oil	0,05% 0,05%	< 0,01% < 0,01%
R D	Reusable according EN 143:2000/A1:2006 Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / hopcalite

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 4,0 years

Technical Data Sheet

MSA The Safety Company

Description

Description	93 ABEK CO NO Hg / St	93 ABEK CO NO Hg P3
Part Number	10115315	10160507
Marking according to EN	A1, B2, E2, K1, CO, NO, Hg-P3	

Conditions of use

- organic gases and vapors with a boiling point > 65° C
- inorganic gases and vapors, e.g. chlorine, hydrogen sulfide, hydrogen cyanide
- sulfur dioxide, hydrogen chloride and other acid gases
- ammonia and organic ammonia derivatives
- carbon monoxide
- nitrous gases, e.g. NO, NO2, NOX
- mercury
- particles

Colour code

brown
grey
yellow
green
black
blue
red
white

Label

Characteristics

Weight [g]	420
Diameter [mm]	108,2
Height incl. thread [mm]	88
Connection	EN 148-1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,6 mbar	2,30 mbar mbar
	95 l / min	9,8 mbar	8,50 mbar

Concentration of Testing Gases

Class 1	1000 ppm [0,1 vol.-%]
Class 2	5000 ppm [0,5 vol.-%]
NO, CO	2500 ppm [0,25 vol.-%]
Hg	13 mg/m³

Performances

Filter type and class	Gases of reference	EN 14387/58620 requirements	Typical values
A1	cyclohexane [C_6H_{12}]	70 min	130 min
B2	chlorine [Cl_2]	20 min	32 min
	hydrogen sulfide [H_2S]	40 min	> 120 min
	hydrocyanic acid [HCN]	25 min	95 min
E2	sulfur dioxide [SO_2]	20 min	40 min
K1	ammonia [NH_3]	50 min	100 min
CO 20	carbon monoxide [CO]	< 200 ppm [temporal weighted average / 20 min]	23 min
NO	nitric oxide [NO]	20 min	48 min
	nitrogen dioxide [NO_2]	20 min	40 min
Hg	mercury [vapor]	100 h	> 200 h
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	< 0,01%
	paraffin oil	0,05%	< 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387		

Material

Housing	aluminium
Cover (particle filter)	polypropylene
Filtering material	filtering paper / hopcalite / impregnated activated carbon

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h. 4,0 years

The maximum service time of the special filter against mercury is 50 h. This applies if no other hazardous agents has penetrated the filter earlier. The filter must always be replaced in case of penetration by a hazardous agent.

Technical Data Sheet

MSA The Safety Company

Description

Description	93 Reaktor B/St
Part Number	10115318
Marking according to EN	A2, B2, E1 - P3
Conditions of use	• organic gases and vapors with a boiling point > 65° C • inorganic gases and vapors, e.g. chlorine, hydrogen sulfide, hydrogen cyanide • sulfur dioxide, hydrogen chloride and other acid gases • radioactive methyl iodide and radioactive particles
Colour codes	orange brown grey yellow white

Labels

CE0121

Characteristics

Weight [g]	285
Diameter [mm]	107
Height incl. thread [mm]	78
Connection	EN 148 - 1

Breathing Resistance

	at	EN 14387 requirements	Typical values
	30 l / min	2,6 mbar	1,70 mbar
	95 l / min	9,8 mbar	6,50 mbar

Concentration of test gases

- EN 14387

Class 2	5000 ppm [0,5 Vol.-%]
Class1	1000 ppm [0,5 Vol.-%]

DIN 58621-Reaktor

		DIN 58621-Reactor requirements	Typical values
radioactive methyliodide		filtration efficiency: 99,9 %.	> 99,9999 %

Performances

Filter type and class	Gases of reference	EN 14387 requirements	Typical values
A2	cyclohexane [C_6H_{12}]	35 min	60 min
B2	chlorine [Cl_2]	20 min	50 min
	hydrogen sulfide [H_2S]	40 min	60 min
	hydrocyanic acid [HCN]	25 min	50 min
E1	sulfur dioxide [SO_2]	20 min	> 60 min
Filter type and class	**Particles of reference**	**EN 143 requirements**	**Typical values**
P3	sodium chloride [NaCl]	0,05%	> 0,01%
	paraffin oil	0,05%	> 0,01%
R	Reusable according EN 143:2000/A1:2006		
D	Dolomite clogging test & marking according to EN 143:2000/A1:2006 and EN 14387:2008		

Material

Housing	aluminium		
Cover (particle filter)	polypropylene		
Filtering material	filtering paper / impregnated activated carbon		

Details/Special Information

Storage conditions & time	- 5 °C to + 50°C, < 90 % r. h.	6,0 years