Sundström®

Breathing protection

Sundström Safety AB

Protecting people from polluted air

Sundström Safety AB was founded in 1926 by Ivan Sundström who was a mining engineer and realized at an early stage the need for protecting the eyes and lungs of miners.

The company and its products were developed further by his son Per, who also studied at the Technical Academy (now Faculty of Art). His art studies included analysis of subjects such as the anatomy of the human body. The understanding of human face forms laid the foundations for the design and properties of face masks. A good respiratory protection device must be simple and comfortable to use. In 1962, Per Sundström also presented the first modern protective mask, which was made of rubber and was of anatomic design. The first silicone mask was launched in 1989.

Our aim is to protect people against polluted air. It was this concern that prompted our grandfather to begin producing protective masks 80 years ago. We then carried this task through into the 21st century. This is why we are not content with merely conforming to the demands of the authorities. We do our utmost to make our products as good and efficient as present-day technology enables us to do. During the past 35 years, Sundström Safety has invested vast resources into product development. The objective has been to create an expandable and flexible product range. We can now present our complete system of masks, filters and accessories for all applications occurring in the market. Although we are very pleased with our present products, we continue to pursue our product development work. We always endeavour to offer the best possible protection.

When our grandfather founded his company, he would never have imagined how it would grow into today's export-oriented company. On the other hand, he undoubtedly hoped the company would live on and stay in the family. His wishes have been met and will continue to be met in the future. Per Sundström passed away in December 2004, and the third generation of the family continues to run the company in the same spirit.

The 1960s

The 1980s

Respiratory protective devices

Many harmful substances, such as gases and particles, occur in our modern world. At work and in leisure activities, we may be exposed to serious threats.

Respiratory protective devices are classified into two main groups

Filtering devices	Breathing apparatus
The breathing air is purified as it flows through a filter. (May be used only if the oxygen content of the ambient air is normal).	Compressed air-fed Self-contained breathing apparatus (air in a cylinder).

How effective is the protection?

The protection factor is a measure of the efficiency of the respiratory protective device. As an example, if the content of a substance on the inside of the mask is one twentieth of what it is in the ambient air, the respiratory protective device is said to have a protection factor of 20.

Example:

$$\frac{1000 \text{ particles/cm}^3 \text{ (outside the protective device)}}{50 \text{ particles/cm}^3 \text{ (inside the protective device)}} = \text{protection factor of 20}$$

What is Assigned Protection Factor "APF"?

The assigned protection factor (APF) is a workplace measurement where the protective device has been tested in real working situations on workers. This factor is normally lower than laboratory tests (nominal protection factor) as the test also covers the human factors (i.e. individual fit, wear time, etc.). All respiratory devices within each area (i.e. half masks, full-face masks, hoods) is therefore given the same APF in its group. The purpose of the APF is to be a guideline for selection of respiratory protective equipment in different hazardous environments (to select the right protection level for a specific working situation based on a risk assessment)

Example: A half mask with filter has an "APF" of 20, (the air inside the mask is 20 times cleaner than the surrounding air), and can be used in concentrations of up to 20 times OEL. Note that it shall not be used in environments where there is Immediate Danger to Life and Health (IDLH). Check national recommendations!

End-user training, in fit, use and maintenance is essential, in order to have the correct function of the equipment. Workload is an important factor, when it comes to selection of correct and suitable respiratory protection equipment. Sundström Safety AB, therefore recommend a selection process in three steps:
Step 1: Low workload – filtering devices
Step 2: Higher workload – powered assisted filtering devices
Step 3: Poor warning properties – compressed air supply devices

Half masks/Full face mask

There are half masks that enable the user to perform strenuous work during parts of the day, or for work during the whole of day. In their design, Sundström half masks are known for having an excellent fit, high protection level and very low breathing resistance. With high concentrations of air pollutants, a full face mask is often recommended. The Sundström full face mask gives very good protection in all situations in which filter protection is used. All masks in Sundström's programme use the same range of filters, and can be combined efficiently and economically for each working situation. Filter protection shall never be used in conditions that are Immediately Dangerous to Life and Health (IDLH).

The SR 100 half mask is made of silicone and is available in two sizes, S/M and M/L. The mask is equipped with two exhalation valves, which ensures very low exhalation resistance. Valve covers with baffles effectively protect the exhalation membrane against dust and paint mist. The easily adjustable elastic head harness is designed as a V-shaped loop and has a large, dished crown plate, which contributes towards a comfortable and secure fit. The SR 307 compressed air attachment can be connected. A pre-filter holder and test disc for simple checking of the performance are supplied. Tested in accordance with EN 140:1998

The SR 90-3 half mask is made of thermoplastic elastomer (TPE) in two sizes, S/M and M/L. The mask is equipped with two exhalation valves, which ensures very low exhalation resistance. The valve covers with partitions effectively protect the exhalation membrane against dust and paint mist. The easily adjustable elastic head harness straps of the mask are designed as a V-shaped loop and have a large dished crown plate, which contributes towards a comfortable and safe fit. The SR 307 compressed air attachment can be connected. A pre-filter holder and test disc for simple checking of the per formance are supplied.
Tested in accordance with EN 140:1998

Full face mask SR 200 is intended for use when maximum safety and good breathing comfort are required. The full face mask is used with the same simple filter system and compressed air attachment as our half masks. The material and pigment in the faceblank are FDA and BGA approved for foods, which minimises the risk of contact allergies. All exposed plastic parts are made of polyamide. The mask has two exhalation valves for minimum exhalation resistance, and an easily adjustable textile strap. Some of the inhalation air is guided via the screen disc to prevent it misting from condensation. The mask has a very low weight, only 450 grams. Tested in accordance with EN 136:1998

Masks/Accessories

The SR 64 short-duration protective hood fits Sundström half masks. Protects the head and hair against dust during grinding and work that gives rise to splashing, such as in high-pressure washing or spray painting. Made of Tyvek® and equipped with a PVC visor.

The SR 345 protective hood is intended for use together with Sundström half masks with filters or with the SR 307 compressed air attachment, or together with the SR 90 Airline. Made of chemicals-resistant, PVC coated fabric, it protects against splashing and dripping of most substances. The hood is fitted so that the exhalation valves are outside the hood, which reduces the risk of misting by condensation on the visor.
The SR 346 protective hood offers the same benefits and is of similar design to the SR 345, but is extended so that it covers the top part of the user's body.

Storage box SR 230 is used for storing Sundström half masks and filters. The box protects the equipment against dirt and physical damage.

Storage bag SR 339 is made of durable and pliable synthetic material. Designed to accommodate a Sundström half mask and filters.

Storage box SR 344 is intended for storage of respiratory protection products. The lid is made of blue transparent polypropylene, which makes it possible to check the contents. The box is also suitable for wall mounting.

The service kit for the SR 100 contains harness, set of membranes, pre-filter holder and protective caps.
Also available for the SR 90-3.

Adapter SR 280-3 Intended for fitting to the SR 200 full-face mask and to masks with EN 148-1 thread to enable Sundström filters to be used. Tested in accordance with EN 136:1989.

Cleaning wipes SR 5226 for daily cleaning of the mask. The labelling system for Sundström masks simplifies their use. The durable label is applied to the mask, which enables the bar code to be read and the serial number.

The labelling system for Sundström masks simplifies their use. The durable label is applied to the mask, which enables the bar code to be read and the serial number to be recorded. Space is also provided for the user's name.

Accessories/Masks

Microphone SR 342 makes it possible to communicate using Sundström's SR 100/SR 90-3 half masks and SR 200 full face mask. The microphone is mounted on an exhalation valve cover that is in turn mounted on any exhalation valve on the mask.

Voice amplifier SR 324 provides improved opportunities for communication when using the SR 100/SR 90-3 and SR 200. The microphone is located in the exhalation valve of the mask, and the loudspeaker can be secured to a vest pocket or waist belt, for instance.

The SR 328 test adapter is used for the SR 100/SR 90-3 half masks. The adapter is connected to one of the exhalation valves of the mask. **The SR 370 test adapter** is used for the SR 200 full face mask. The adapter is connected between the filter and the filter connection of the mask. The test adapters are only used for connecting the face mask to measuring instrument for carrying out a facial fit testing.

Accessories suitable for full face masks:

Welding shield SR 84 For welders there is a welding shield available which can easily be mounted on the frame of the full face mask. Welding glasses insize 110x60 mm or auto-darkening filters can be used. In the flip-up position the shield can also be used for grinding etc. The construction of the shield and the welding-glass holder ensures a light weight which is specially notable in the flip-up position.

Spectacle frames SR 341 For users of prescription lenses a spectacle frame in steel which will last through many glass changes is available. Easy to mount in a stable manor and easily adjustable for perfect fit.

Laminated glass visor SR 365 Where the specially treated PC visor is not considered sufficiently resistant against e.g. chemicals, the SR 200 can be equipped with a laminated glass visor. Available either factory fitted or for exchange at a later stage.

Protective film SR 343/SR 353 For polycarbonate and glass visors respectively, easily changed. The film provides excellent protection in work that would otherwise quickly need to clean the original visor.

Adapter SR 280-3 Intended for fitting to the SR 200 full-face mask and to masks with EN 148-1 thread to enable Sundström filters to be used. Tested in accordance with EN 136:198**9.**

The SR 200 full face mask has a broad range of accessories and can be used in many different working situations.

Particle filters for half masks and fullface-masks are graded into three classes

Class	Protects against	Collecting efficiency (NaCl, paraffin oil) dry particles wet particles
P1 R/P1 NR	Solid and wet particles[1]	80%
P2 R/P2 NR	Solid and wet particles[2]	94%
P3 R/P3 NR	Solid and wet particles[3]	99,95%

R "Reusable"the filter can be used more than one shift.
NR "the filter can only be used fore one shift

1. Not against liquid aerosols, carcinogens and radioactive substances, microorganisms (bacteria, viruses, spores) or biochemical substances (enzymes, hormones).
2. Not against microorganisms (viruses, spores) or against biochemical substances (enzymes, hormones).
3. Protects against all types of particles.

A filter of one class also covers the classes below it, i.e. P3 also covers P1 and P2.
Change the filter if it has been damaged or if you feel increased breathing resistance.
Particle filters protect only against particles.

Particle filter SR 510 P3 R This mechanical filter protects against all types of particles (dust, fume, fog, spray, asbestos), even bacteria, viruses and radioactive dust. The filter separates 99,997% of the pollution in the air. That means that the air is 33.000 times cleaner on the backside of the filtermedia than in the front (the standard requires 2000 times cleaner air). A new feature is the increased filterarea to 1300 cm^2. It gives the filter an extremely low breathing resistans, in this case 70% lower than the standard requires. This filter also fits on all Sundström filter respirator products.

Particle filter SR 610 P3 R protects against the same particles as SR 510 P3 R and are intended for fitting to the SR 200 full-face mask and to masks with EN 148-1 thread to enable Sundström filters to be used.

Pre-filter SR 221 should always be used for particle, gas and combined filters.
The prefilter protects the main filter against premature clogging by larger particles.
Pre-filter holder **SR 5153** secures and protects the pre-filter against handling damage.
Also used for face-fit tests together with test disc **SR 322.**

Gas filters are graded into classes and types

Filter class	Tested in concentrations of up to:
1	0,1 percent by volume = 1 000 ppm
2	0,5 percent by volume = 5 000 ppm
3	1,0 percent by volume = 10 000 ppm

ppm= part per milion.

Filter type	Protects against	Colour
A	Organic gases/vapours, e.g. solvents such as white spirit and toluene	Brown
AX	Low boiling organic gases/vapours, i.e. acetone and methanol	Brown
B	Inorganic gases/vapours, e.g. chlorine, hydrocyanic acid, hydrogen sulphide	Grey
E	Acid gases, e.g. sulphur dioxide	Yellow
K	Ammonia and certain amines	Green
Hg	Mercury	Red

After saturation, leakage will occur at an accelerating rate. The filter should be changed in good time before saturation. Use only filters from unopened packages. Gas filters protect only against gas/vapour.

Do you need more technical information regarding our products? Please, visit our homepage, **www.srsafety.com** or, give us a call.

Gas filters/ Combined filters

Filter	Protect against
Gas filters SR 217 A1/SR 218 A2	Protect against organic compounds with a boiling point above 65ºC.
Gas filters SR 315 ABE1/SR 294 ABE2	Protect against organic compounds with a boiling point above 65ºC, inorganic compounds and acid gases/vapours.
Gas filters SR 316 K1/SR 295 K2	Protect against ammonia and certain amines.
Gas filter SR 297 ABEK1	Protects against the same pollutant types as gas filter 315, and also against ammonia.
Gas filter SR 298 AX	Protects against organic compounds with a boiling point equal to or lower than 65ºC.

Combined filters

Combinations of filters can be used if gases/vapours and particles occur at the same time, such as in high-pressure washing, spray painting, heating of various substances or condensation of gases. Select a suitable gas filter and combine it with particle filter SR 510 P3 R simply by pressing them together. **Note that the particle filter must always be fitted in front of the gas filter.**

Combination filter SR 299-2 ABEK1 Hg P3 R protects against organic compounds with a boiling point above 65º, inorganic compounds and acid gases/vapours, ammonia, mercury vapour and all types of particles.

All gas-/and combined filters are tested and approved in accordance with EN 14387:2004

Work situations

Work situation	Type of pollutant	Type of protective device	Type of filter
Painting/roller application of solventbased paint. Degreasing/washing.Work with adhesives and jointing compounds.	Solvent vapours.	Half mask or full face mask (if the eyes are irritated). Fan unit with chosen head top.	Gas filter SR 217 A1/ SR 218 A2 Gas filter SR 518 A2+ Particle filter SR 510 P3 R*
Spray painting with water-based paint/ solvent-based paint in open, ventilated areas. Spraying with weed killers, insecticides, etc. High-pressure washing with additives.	Liquid aerosols (spray) and vapours/ solvent vapours. Liquid aerosols (spray), vapours from organic weed killers, insecticides, etc. and solvent vapours (degreasing).	Half mask or full face mask (if the eyes are irritated). Fan unit with chosen head top.	Gas filter SR 217 A1/ SR 218 A2 + Particle filter SR 510 P3 R Gas filter SR 518 A2 + Particle filter SR 510 P3 R
Grinding work (if no gas is emitted). Rock drilling. Chimney-sweeping. Drilling of metals. Turning. Mould spores and other micro organisms.	Particles.	Half mask or full face mask (if the eyes are irritated). Fan unit with chosen head top.	Particle filter SR 510 P3 R
Welding.	Smoke and gas.	Half mask. Full face mask with welding shield SR 84.	Gas filter SR 315 ABE1 + Particle filter SR 510 P3 R + Steel net disc SR 336
Work in sewage treatment plants, public baths, etc. Work on acids, such as in etching, pickling, ensilage.	Inorganic gases/vapours and acid gases (chlorine, sulphur dioxide, sulphuric acid, nitric acid, formic acid).	Half mask or full face mask (if the eyes are irritated). Fan unit with chosen head top.	Gas filter SR 315 ABE1 + Particle filter SR 510 P3 R Gas filter SR 515 ABE1 + Particle filter SR 510 P3 R
Work with products containing isocyanates i.e. manufacturing of polyurethane (PU) or when heating/burning of PU products.	Gas/vapour or a combination of gas/ vapour and particles (dust, smoke, aerosols).	Compressed air-fed respiratory protective devices or full face mask. Fan unit SR 500 + visir SR 540.	Gas filter SR 315 ABE1 + Particle filter SR 510 P3 R, max 40 hours. Gas filter SR 515 ABE1 + Particle filter SR 510 P3 R, max 16 hours.
Asbestos clearance.	Particles in the form of fibres.	SR 200 Airline + compressed air for high levels. SR 500 + SR 200 for lower levels.	Particle filter SR 510 P3 R
PCB clearance.	Particles and gases.	SR 500 together with SR 200.	Gas filter SR 518 A2 + Particle filter SR 510 P3 R

*Each gas filter shall be combined with a particle filter SR 510 P3 R.
For further information, visit **www.srsafety.com** or get in touch with us at **support@srsafety.se**

SR 500 series

The SR 500 is a battery-powered fan unit that, together with filters and an approved human interface, is included in the Sundström fan-assisted respiratory protective device systems. The SR 500 can be used as an alternative to filter respirators in all situations for which these are recommended. This applies particularly to work that is hard, warm or of long-duration. The filtered air is supplied through a breathing hose to the human interface. The above-atmospheric pressure then generated prevents pollutants from the surroundings from penetrating into the human interface. The same control is used for starting, stopping and selection of operating status (air flow 175 or 225 l/min).

Information on all important data is given via symbols, on the panel:
- Small fan symbol that lights up with a green light during normal operation.
- Bigger fan symbol that lights up with a green light during boosted operation
- Triangle that lights up with a red light if the air flow should cease or if the particle filters are clogged.
- Battery symbol that lights up with a yellow light when the battery capacity is low.
- Initiates an alarm by vibrating and light signals in the event of an obstruction in the air flow. Equipped with automatic air flow control.

Hood SR 561 A lightweight hood which protects head and shoulders. Replaceable hood of Tyvek® with an easily adjustable head harness. Easily adjustable and comfortable neck seal of cotton. Visor of PETG. SR 561 is TH3 approved.

Hood SR 562 A lightweight hood which covers the face and head. Replaceable hood of Tyvek® with an easily adjustable head harness. Easily adjustable and comfortable face seal in polyamide/lycra. Visor of PETG. Available in one size. SR 562 is TH3 approved

The SR 580 provides complete protection when respiration, face and head protection is required and can be easily combined with the majority of ear defenders. Polycarbonate visor, easy to rise with a large field of view. The visor is simple to change. The unit can also be connected to Compressed Air Attachment SR 507 in situations where filter protection is not appropriate. SR 580 is TH3 approved

Shield SR 540 An unique shield with excellent field of vision, classified at the highest level of protection NPF 500. The visor can be easily flipped up to a good balanced ”over the head” position. Simply replaceable visor of PC or alternatively PETG. SR 540 is TH3 approved.
Accessories: SR 545 Visor set, PETG.
SR 543 Head cover for protection of head and neck.
SR 542 Peel-off set.
SR 544 Sweatband/Comfort band for protecting the top of the user’s head.

Hood SR 530 Similar to SR 520 but also protects the neck and shoulders. Easily adjustable neck seal, providing high protection even for people with beard. One size fits all face shapes. Visor of chemical-resistant CA. SR 530 is TH3 approved.
Accessories: SR 522 Peel-off set.
SR 544 Towelling band for protecting the top of the user’s head.

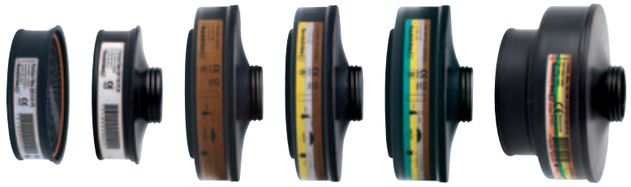
Hood SR 520 A lightweight hood which covers the face and head. Available in two sizes, S/M and M/L. Visor of chemical-resistant CA. SR 520 is TH3 approved.
Accessories: SR 522 Peel-off set.
SR 544 Towelling band for protecting the top of the user’s head.

The visor and the hoods are delivered with hose for direct assembly in SR 500.

Hose SR 550 PU/SR 551 Rubber For connection to Sundström full face mask SR 200. This combination gives the highest level of protection attainable using filter protection. SR 550 + SR 200 full face mask is TM3 approved. **Accessories:** as for SR 200.

SR 500 Filters

The filters are dimensioned to cope with the high air-flow rates provided by the fan unit



Filter	Protect against
SR 510 **SR 710**	SR 510 and SR 710 class P3 R, mechanical particle filter with a very high efficiency > 99,997% and an active area of 13 dm^2. The filter protects against all types of particles, solid and liquid. SR 510 can be used separately or combined with a gas filter. SR 710 can not be combined with a gas filter. **SR 510** fits all Sundström filter respirator products.
SR 518	A2 filter for use against organic gas, including most solvents. A2 classification gives better capacity and longer lifetime compared to class 1.
SR 515	ABE1 filter, designed to protect against organic, inorganic and acid gases.
SR 597	Gas filter A1BE2K1 gives same protection as SR 515, but also including ammonia and certain amines.
SR 599	Combined filter SR 599 A1BE2K1 Hg P3 R protects against organic compounds with a boiling point above +65°C, inorganic and acid gases/vapours, ammonia, mercury vapour and all types of particles. (Warning! Maximum use time for protection against mercury fumes is 50 hours).

Note that each gas filter shall be combined with a particle filter to prolong the lifetime of the fan unit.
Always use pre filter SR 221, which will protect the main filters from too early clogging.

Operating times

The operating times may vary with different temperatures, premature of filters and the condition of the battery. The table below gives the expected operating times under ideal conditions.

STD Battery	HD Battery	Filter	Air flow rate	Expected operating life
X		SR 510	175 l/min	8 hours
X		SR 510	225 l/min	5 hours
	X	SR 510	175 l/min	13 hours
	X	SR 510	225 l/min	8 hours
X		SR 599	175 l/min	5 hours
X		SR 599	225 l/min	3 hours
	X	SR 599	175 l/min	8,5 hours
	X	SR 599	225 l/min	5 hours

SR 500 Accessories

SR 505	Practical grip bag with two separate major compartments. Space for the SR 500 Powered unit, accessories and chosen face-piece.
SR 503	Leather belt for casting, flame cutting and other similair operations.
SR 504	Rubber belt for decontamination, casting, flame cutting and other hot working situations.
SR 336	Steel net disc protects the filters against sparks and spatter that occurs during welding, flame cutting and grinding.
SR 509	Pre filter holder for decontamination enables vacuum cleaning of the pre-filter when rapidly clogged.
SR 514	Splash cover (PVC) to protect the fan unit from liquid splashes and dust.
SR 502	Heavy Duty battery.

Battery

STD 14,8 V 2,2 Ah, Lithium-ion. Charging time 80% - 30 min, 100% - 1,5 h.
Heavy Duty 14,8 V 3,6 Ah Lithium-ion. Charging time 80% - 45 min, 100% - 2 h.
Battery charger, with three stages charging:
Boosted charging charges the battery to about 80% of its capacity and an orange LED is alight. Balanced charging charges the battery to 100% of its capacity and a yellow LED is alight. Trickle charging, fully charged battery and a green LED is alight.

Charging station for charging 1-5 batteries of the Sundström SR 500 fan.
The **SR 506** is delivered in unassembled condition, without charger and batteries.
The **SR 516** is delivered with 5 chargers type 2541 and without batteries.

This charger senses the battery condition and provides optimum charging conditions, with the shortest possible charging time. The earlier type 9940 charger model does not have this function and should not be used as the charge base. The model number is marked on the rear of the charger.

Compressed air-fed respiratory protective devices

Compressed air-fed respiratory devices can be used in all environments in which filtering devices can be used. Under certain circumstances, safety precautions may have to be taken, such as provision of communication facilities, rescue facilities and personnel back-up. See the relevant regulations. According to EN 132, breathing air must not contain oil in excess of the smell are (0.3 mg/m^3). No other pollutants in excess of the hygienic limit are permissible in the cleaned breathing air from compressors or cylinders.

Air consumption

The quantity of air consumed by a user is dependent on the work intensity. There are also individual differences between people. If a particular user has a certain average air consumption, the air flow supplied must be at least 3 - 5 times higher during the inhalation phase to ensure that no partial vacuum will occur in the respirator. Typical values of air consumption and flows in various situations are given below:

Work situation	Average air consumption	Min. air flow rate during inhalation
Seated work	approx. 10 litres/min	approx. 30 litres/min
Walking/talking at the same	approx. 50-60 litres/min	approx. 150-180 litres/min
Moderately heavy work	approx. 50-70 litres/min	approx. 150-210 litres/min
Fireman in work	approx. 150 litres/min	approx. 450 litres/min

N.B. If a loosely fitting protective device is used, such as a welding visor or shield, make certain that the actual air flow available for that particular work situation is sufficient. A closely-fitting respirator, such as a full face mask or half mask, is not equally sensitive to partial vacuum.

The SR 99 compressed air filter is used for producing clean breathing air from ordinary compressed air. The unit consists of a regulator, pre-collector and main filter (SR 292), all of which are mounted in an enclosing steel sheet stand. The unit can be placed on the floor or mounted on a wall. The pre-collector, which has a pressure-controlled/manual drain, collects coarse particles, water and oil. The SR 292 main filter consists of a carbon filter part, surrounded by two P3 particulate filters. The air is cleaned to remove any remaining particles/gases/vapours/odours. A Y coupling that increases the number of outlets is available as accessory.

Air heater SR 99H is an electrical heater unit that warms up the breathable air and is placed after a compressed air filter (SR 49, SR 79 or SR 99). The air temperature can be regulated up to +80 °C during optimal conditions. In the event of overheating, the power supply will be automatically tripped. Use the supplied hose for connection between the compressed air filter and air heater.
The air heater consists of a control unit and a heater unit.

Filter cartridge SR 292 for SR 79 and SR 49 Consists of two off SR 510 P3 filters and about 450g active carbon. If the air quality is normal, the useful life of the filter is 6 - 12 months.

The **SR 90 Airline** consists of an SR 90 half mask, which is supplied with compressed air through a hose from a regulating valve on the user's belt. A standard filter of suitable type in the mask provides protection against the loss of compressed air supply and protects the user while he is walking to and from the workplace. Can also be used without filter backup, such as under a visor. As a result, the SR 90 Airline has a very wide field of application. The air flow rate can be controlled by means of a regulating valve on the user's belt to a value between approx. 150 and 320 l/min. The supply pressure to the regulating valve should be between 4 and 6 bar. A flow meter and a warning whistle for temporary and continuous monitoring of the air flow are included. Tested in accordance with EN 14594:2005, class 3A together with SR 358, SR 359 and SR 360 compressed air hoses.

The **SR 200 Airline** with filter back-up. A breathing apparatus that provides a continuous airflow when connected to compressed air. A standard filter of suitable type mounted in the mask protects against loss of pressure or moving. In enclosed workspaces, the equipment can be used without filter with the front hole plugged. SR 200 Airline has been specially produced for heavy, prolonged work, or where pollutants are especially unhealthy and a high degree of protection is required. The breathing hose can be detached from both mask and regulator valve. The air quantity can be regulated to between about 150 and 320 l/min at a working pressure of 5-7 bar.
Tested in accordance with EN 14594:2005, class 4B together with SR 358 or SR 359 hoses. Tested in accordance with EN 14594:2005, class 4A together with SR 360 hose.

Compressed air-fed respiratory protective devices

The **SR 307 compressed air attachment** is simple to fit to Sundström half masks and full face masks. The air flow rate can be controlled by means of the regulating valve on the user's belt to a value between about 150 and 320 l/min. The supply pressure to the regulating valve should be between 4 and 6 bar. A flow meter and a warning whistle for temporary and continuous monitoring of the air flow are included.
The SR 307 with half mask together with SR 358, SR 359 or SR 360 is type approved in accordance with EN 14594:2005, klass 3A. SR 307 with full face mask together with SR 358 or SR 359 is type approved in accordance with EN 14594:2005, klass 4B. SR 307 with full face mask together with SR 360 is type approved in accordance with EN 14594:2005, klass 4A .

The SR 507 compressed air attachment is designed for connection to Sundström hoods SR 520/SR 530/ SR 561/SR 562, visor SR 540, welding shield SR 590 and helmet with visor SR 580. This combination forms a breathing apparatus designed for continuous air flow, for connection to a compressed air supply. The SR 507 is an accessory that enables a given face piece to be used as either a protective device supplied with compressed air or a powered air purifying respirator (PAPR).
The compressed air attachment is especially intended for applications involving heavy and sustained work in environments in which the pollutants have poor warning properties or are particularly toxic.
The SR 507 is made of materials which are not liable to give rise to friction sparking, which enables the attachment to be used in an explosive or flammable environment.
The flow meter and warning whistle for temporary and continuous monitoring of the air flow rate are included. Control valve mounted on the user's belt is included.
The control valve can be used for adjusting the airflow rate to the head top, between 175 up to 260 l/min.
Working pressure 5-7 bar (500-700 kPa)
Working temperature: -10°C to +50°C
SR 507 together with head tops SR 520, SR 530, SR 540, SR 561, SR 562, SR 580 or SR 590 and air hose SR 358 or SR 359: EN 14594:2005, class 3B.
SR 507 together with head tops SR 520, SR 530, SR 540 , SR 561, SR 562, SR 580 or SR 590 and air hose SR 360: EN 14594:2005, class 3A.

The **SR 63-10 compressed air-fed hood** has an easily adjustable head harness. It is made of wear-resistant, fabric-reinforcedplastic material, and has a large, replaceable polycarbonate visor. The visor can be provided with three protective films, which can easily be peeled off as vision begins to deteriorate. The air flow can be controlled by the regulating valve on the user's belt to a value between about 150 and 280 l/min. The supply pressure to the regulating valve should be between 4 and 6 bar. Flow meter and warning whistle for temporary and continuous monitoring of the air flow are included.
Tested in accordance with EN 14594:2005, class 3B together with SR 358 or SR 359 compressed air hoses. Tested in accordance with EN 14594:2005, class 3B together with SR 360. compressed air hose.

Compressed air hose SR 358 Is equipped with CEJN safety couplings for direct connection to the Sundström compressed air filters and to the compressed air-fed respiratory devices. Working lengths of 5, 10, 15, 20, 25, 30 m.

Compressed air hose SR 359 Is equipped with CEJN safety couplings for direct connection to the Sundström compressed air filters and to the compressed air-fed respiratory devices. SR 359 is recommended for SR 79/1 H. The hose is heat tolerant and anti-static. Working lengths of 5, 10, 15, 20, 25, 30 m.

Compressed air hose SR 360 Is equipped with CEJN safety couplings for direct connection to the Sundström compressed air filters and compressed air-fed respiratory devices. The surface of the hose has a coating that provides good protection against sparks, e.g. when welding. Working lengths of 2, 4, 6, 8 m.

Filter recommendations

Substance	CAS-no	Filter	Note
1, 2-Dichloroethane	107-06-2	A	
2-Nitropropane	79-46-9	A	4
2-Propanol	67-63-0	A	
Acetaldehyde	75-07-0	AX	4
Acetamide	60-35-5	A+P3	1, 4
Acetic acid	64-19-7	B	
Acetic anhydride	108-24-7	B	
Acetone	67-64-1	AX	
Acetylchloride	75-36-5	B	
Acetylene	74-86-2	Compr.air eq	
Acrolein	107-02-8	AX	3
Acrylamide	79-06-1	A+P3	1, 4, 5
Acrylic acid	79-10-7	B	
Acrylonitrile	107-13-1	A	4
Adipic acid	124-04-9	P3	
Aliphatic naphta	8052-41-3	A	
Allyl alcohol	107-18-6	A	3
Allyl chloride	107-05-1	AX	5
Allylamine	107-11-9	K	5
Aluminium chloride	7446-70-0	B+P3	1
Aluminium oxide	1344-28-1	P3	
Ammonia	7664-41-7	K	
Amyl acetate	628-63-7	A	
Aniline	62-53-3	K	4, 5
Antifouling paints		A+P3	1
Antimony	7440-36-0	P3	
Antimony hydride	7803-52-3	B	
Aromatic naphta		A	
Arsenic (not arsine)	7440-38-2	P3	
Arsine	7784-42-1	B	
Barium	7440-39-3	P3	
Benzaldehyde	100-52-7	A	
Benzene	71-43-2	A	4
Benzotriazole	95-14-7	A+P3	1
Benzoyl chloride	98-88-4	B	
Benzyl alcohol	100-51-6	A	
Benzyl chloride	100-44-7	B	3, 4
Beryllium	7440-41-7	P3	4, 6
Biphenyl	92-52-4	A+P3	1
Bromine	7726-95-6	B	
Butyl acetate	123-86-4	A	
Butyl alcohol	71-36-3	A	
Butyr aldehyde	123-72-8	A	
Cadmium	7440-43-9	P3	4
Calcium oxide	1305-78-8	P3	
Carbon dioxide	124-38-9	Compr.air eq	
Carbon disulphide	75-15-0	AX	5
Carbon monoxide	630-08-0	Compr.air eq	
Carbontetrachloride	56-23-5	A	4

Substance	CAS-no	Filter	Note
Chlorate		P3	
Chlorine	7782-50-5	B	
Chlorine dioxide	10049-04-4	B	
Chloroform	67-66-3	AX	4
Chloroprene	126-99-8	AX	4
Chromic acid	1333-82-0	P3	4, 6
Cobalt (dust and smoke)	7440-48-4	P3	6
Cresol	1319-77-3	A+P3	1
Cumene	98-82-8	A	5
Cupper	7440-50-8	P3	
Cotton dust		P3	
Cyanide (as CN)	57-12-5	B+P3	1, 3
Cyclohexanol	108-93-0	A+P3	1
Cyclohexanone	108-94-1	A	
Diacetone alcohol	123-42-2	A	3
Diglycidyl ether	2238-07-5	A	3, 6
Dimethyl sulphate	77-78-1	A	3, 4, 5
Dimethylformamide	68-12-2	A	4, 5
Dioxane	123-91-1	A	4, 5
Dust, inert		P3	
EDTA	60-00-4	P3	
Epichlorohydrin	106-89-8	A	4, 5, 6
Ethanol	64-17-5	A	
Ethyl acetate	141-78-6	A	
Ethyl acrylate	140-88-5	A	4, 5, 6
Ethyl bromide	74-96-4	AX	3
Ethyl chloride	75-00-3	AX	4
Ethyl ether	60-29-7	AX	
Ethylene glycol	107-21-1	A	
Ethylene oxide	75-21-8	AX	4, 5
Ethylenediamine	107-15-3	K	3, 6
Ferrous chloride		BE+P3	1
Ferrous oxide (smoke)	1309-37-1	P3	
Fluor	7782-41-4	B	
Fluoride (as F)		P3	
Fluorosilisic acid	16961-83-4	B+P3	1
Formaldehyde	50-00-0	B	4, 5, 6
Formic acid	64-18-6	E	
Freon 113	76-13-1	Compr.air eq	
Furfural	98-01-1	A	
Glutaraldehyde	111-30-8	A	6
Glycolmonobutyl ether	111-76-2	A	5
Glycolmonomethyl ether	109-86-4	A	5
Hydrazine	302-01-2	K	3, 4, 5, 6
Hydrochloric acid	7647-01-0	B	
Hydrofluoric acid	7664-39-3	B+P3	1
Hydrogen cyanide	74-90-8	B	3, 5
Hydrogen peroxide	7722-84-1	Compr.air eq	
Hydrogen selenide	7783-07-5	B	3

Substance	CAS-no	Filter	Note
Hydrogen sulphide	7783-06-4	B	
Hydrogene	1333-74-0	Compr.air eq	
Hydroquinone	123-31-9	P3	4, 6
Iodine	7553-56-2	P3	3
Isophorone	78-59-1	A	
Isoprophyl alcohol	67-63-0	A	
Lead (smoke and dust)	7439-92-1	P3	
Maleic anhydride	108-31-6	B+P3	1, 6
Mangan	7439-96-5	P3	
MDI	101-68-8	B+P3	1, 6
MEK	78-93-3	A	5
Melamine	108-78-1	Compr.air eq	
Mercury (vapour)	7439-97-6	Hg-P3	2, 5, 6
Methyl acrylate	96-33-3	A	5, 6
Methyl alcohol	67-56-1	AX	5
Methyl bromide	74-83-9	AX	3, 5
Methyl chloride	74-87-3	AX	4
Methyl ethyl ketone (MEK)	78-93-3	A	5
Methyl iodide	74-88-4	AX	4, 5
Methyl isobutylketone (MIBK)	108-10-1	A	3, 5
Methyl methacrylate	80-62-6	A	5, 6
Methylamine	74-89-5	K	
Methylchloroform	71-55-6	A	
Methylene chloride	75-09-2	AX	4
MIBK	108-10-1	A	3, 5
Monomethylamine	74-89-5	K	
Morpholine	110-91-8	A	5
Nickel carbonyl	13463-39-3	Compr.air eq	4, 5
Nickel, metal	7440-02-0	P3	4, 6
Nitric acid	7697-37-2	B	
Nitrobenzene	98-95-3	A	5
Nitrogen	7727-37-9	Compr.air eq	
Nitrogen dioxide	10102-44-0	Compr.air eq	
Nitrogen oxide	10102-43-9	Compr.air eq	
Nitroglycerine	55-63-0	A	5
Nitroglycol	628-96-6	A	5
Nitrous gas		Compr.air eq	
Nitrous oxide	10024-97-2	Compr.air eq	
Octane	111-65-9	A	
Organic peroxides		A+P3	1
Oxalic acid	144-62-7	P3	
Ozone	10028-15-6	B	
p-Phenylenediamine	106-50-3	P3	3, 6
PCB		A+P3	1, 4, 5
Pentachlorophenol	87-86-5	P3	4, 5
Perchloric acid	7601-90-3	BE	
Perchloroethylene	127-18-4	A	4, 5
Petrol	86290-81-5	AX	
Phenol	108-95-2	B+P3	1, 5

Substance	CAS-no	Filter	Note
Phosgene	75-44-5	B	
Phosphine	7803-51-2	B	
Phosphoric acid (mist)	7664-38-2	BE+P3	1
Phthalic anhydride	85-44-9	P3	6
Piperazine	110-85-0	K+P3	1, 6
Piperidine	110-89-4	K	
Potassium hydroxide	1310-58-3	P3	
Potassium permanganate	7722-64-7	P3	
Propinoic acid	79-09-4	B	
Pyridine	110-86-1	A	
Selenium	7782-49-2	P3	
Selenium sulphide	7782-49-2	P3	4
Silicon dioxide	14464-46-1	P3	4
Silver nitrate	7761-88-8	P3	
Sodium carbonate	497-19-8	P3	
Sodium fluoride	7681-49-4	P3	
Sodium hydroxide	1310-73-2	P3	
Sodium hypochlorite	7681-52-9	B+P3	1
Sodium perborate	10486-00-7	P3	
Sodium silicate	6834-92-0	P3	3
Styrene	100-42-5	A	5
Sulfamic acid	5329-14-6	B+P3	1
Sulfur dioxide	7446-09-5	E	
Sulphuric acid (mist)	7664-93-9	E+P3	1
TDI	91-08-7	Compr.air eq	4, 6
Terpentine (oil)	8006-64-2	A	5, 6
Tetrachloroethylene	127-18-4	A	5, 6
Tetraethyl lead	78-00-2	A+P3	1, 5
Tetrahydrofuran	109-99-9	A	
Tetramethyl lead	75-74-1	A+P3	1, 5
Toluene	108-88-3	A	5
Tributyl phosphate	126-73-8	A	
Trichloroethane	71-55-6	A	
Trichloroethylene	79-01-6	A	4
Tridymite (silicon dioxide)	15468-32-3	P3	
Trimethylbenzene	526-73-8	A	
Trisodium phosphate	7601-54-9	P3	
Vanadium oxide (dust)	1314-62-1	P3	
Vinyl acetate	108-05-4	A	
Vinyl chloride	75-01-4	AX	4, 5
Vinyl toulene	25013-15-4	A	
Vinylidene chloride	75-35-4	AX	
White spirit	8052-41-3	A	
Xylene	1330-20-7	A	5
Zinc chloride (smoke)	7646-85-7	P3	
Zinc oxide (smoke)	1314-13-2	P3	

Compressed air equipment can always be used instead of a filter respirator. It should always be used if the gas concentrations are in excess of 0.5% by volume. Should be used for physically strenuous or long-duration work.

N.B. Compressed-air supplied equipment should not be used where there is danger of loss of consciousness or asphyxiation.

Advice concerning the selection of filters and the method of use can always be obtained directly from **Sundström Safety AB**.

Pre-filter SR 221 should always be used. N.B. This pre-filter can never replace particle filter SR 510 P3 R.

These recommendations are derived from a number of different sources and they follow the current Swedish regulation. Note that there can be national differences in the regulations for use of respiratory protective equipment.

Notes:

1. Combinations of filters shall be used.
2. Combination filter SR 299-2 ABEK1 Hg P3 R and SR 599 A1BE2K1 Hg P3 R. Type Hg- maximum use time 50 hours.
3. Full face mask should be used.
4. Carcinogenic
5. Skin adsorbing
6. Regarded as a sensitizer

Sundström

The S.E.A. Group

Buy a respirator and get a system!

The Sundström filter range is well planned and clearly arranged, and are used both to half masks and full-face masks.
In addition, the masks can also be combined with a number of air fed products, protective hoods and other accessories.

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