



 **Speedglas™**
Welding Safety

3M™ Speedglas™ Welding Helmets Respiratory



Speedglas™

Welding Safety

Why 3M™ Speedglas™?

The #1 brand in welders' PPE

Trust in a brand can't be built overnight. It takes years to become known and even longer to be trusted. In 1981, over 40 years ago, Speedglas™ released the first ever auto-darkening welding helmet and has consistently set the benchmark ever since.

While other products and brands have come and gone, the 3M™ Speedglas™ brand, guided by welders, has continued to drive innovation and lead from the front.

Made in Sweden, Speedglas is the brand of choice for professional welders and remains the world's leading brand of personal protective equipment for welders.

View the range of 3M™ Speedglas™ respiratory welding helmets below.



3M™ Speedglas™ Welding Helmet G5-01VC

- Speedglas Variable Colour and True-View Technology
- Heavy duty flip-up welding helmet with 170 x 104mm grinding visor
- NEW helmet air duct system for climate control
- NEW Bluetooth® connectivity and optional task light
- Adflo PAPR supplies at least 50 times cleaner air (RMPF = 50)
- 12 hour Adflo PAPR battery run time with rapid charge.



Shade range

3/5, 8-14

Viewing area

73x109mm

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3M™ Speedglas™ Welding Helmet G5-01TW

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Shade range

3/5, 8-13

Viewing area

73x109mm

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3M™ Speedglas™ Welding Helmet 9100 Air

- Speedglas True-View Technology
- External button for grind and memory modes
- Industry leading arc detection (> 1 Amp)
- Adflo PAPR supplies at least 50 times cleaner air (RMPF = 50)
- 8 or 12 hour Adflo PAPR battery run time with rapid charge.



Shade range

3

3/5, 8-13

Viewing area

73x107mm + SideWindows

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3M™ Speedglas™ Welding & Safety Helmet 9100 MP Air

- Speedglas True-View Technology
- Integrated safety helmet offers fully compliant head protection
- Flip-up welding helmet with clear grinding visor
- Peripheral SideWindows
- Adflo PAPR supplies at least 50 times cleaner air (RMPF = 50)
- 8 or 12 hour Adflo PAPR battery run time with rapid charge.



Shade range

3/5, 8-13

Viewing area

73x107mm + SideWindows

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3M™ Adflo™ Powered Air Purifying Respirator

The award-winning Adflo is the welder's PAPR of choice.

see page 9



Supplied Air Respiratory Protection

Speedglas respiratory welding helmets can also be used with the 3M Versaflo Supplied Air Regulator V-500E.

see page 10-11



Technical Data Information

Compare the 3M™ Speedglas™ Respiratory Welding Helmet Range by technical feature.

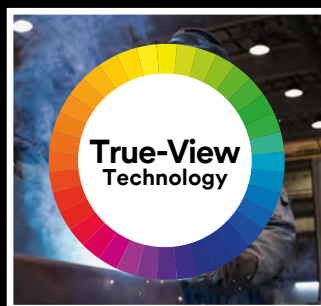
see page 12-15

NEW 3M™ Speedglas™ G5-01 Welding Helmet Series

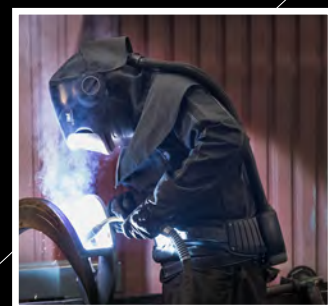
Take Control

Based on extensive input from welders working at high amperages who need to grind frequently, the 3M™ Speedglas™ Heavy-Duty Welding Helmet G5-01 is created to be adaptable to an individual's needs and situation.

True-View Technology



Heavy-Duty Protection



Climate Control



Configurable Coverage



Optional Task Light



Bluetooth Connectivity





3M™ Speedglas™ G5-01VC with Heavy-Duty Adflo™ PAPR

Choose how you see your weld

Speedglas™ Welding Lens G5-01VC with Auto-On, True-View and **NEW** Variable Colour Technology.

Extra-large viewing area (73x109 mm).

Adjust the amount and direction of the airflow inside your helmet with **NEW** Climate Control.

Smooth flip-up function reveals largest ever Speedglas clear grinding visor (170x104 mm).

Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.



NEW Configurable extra protection options to suit your specific needs.

Lens reacts down to an industry-leading 1 amp.

NEW Bluetooth® connectivity enables control of your welding lens settings directly from your smart phone.

NEW Removable flip-up component reduces overall helmet weight by 35% for extended non-welding applications.



NEW Optional helmet-mounted task light provides hours of powerful lighting for work in poorly lit spaces.



Variable Dark State Colours

To provide better vision and more control of your weld puddle, the Speedglas G5-01 includes Variable Colour Technology!

Choose between natural (A), cool (B) or warm (C) tones for your dark state, depending on which offers the best viewing contrast for your welds and the most comfort for your eyes.

3M™ Speedglas™ G5-01VC with Heavy Duty Adflo™ PAPR
Part Number: 617830

Adjust your welding helmet, not yourself



Speedglas™ Welding Lens G5-01TW with Auto-On technology and True-View optics for improved colour and contrast

Extra-large viewing area (73x109 mm).

Adjust the amount and direction of the airflow inside your helmet with **NEW** Climate Control.

Smooth flip-up function reveals largest ever Speedglas clear grinding visor (170x104 mm).

Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.

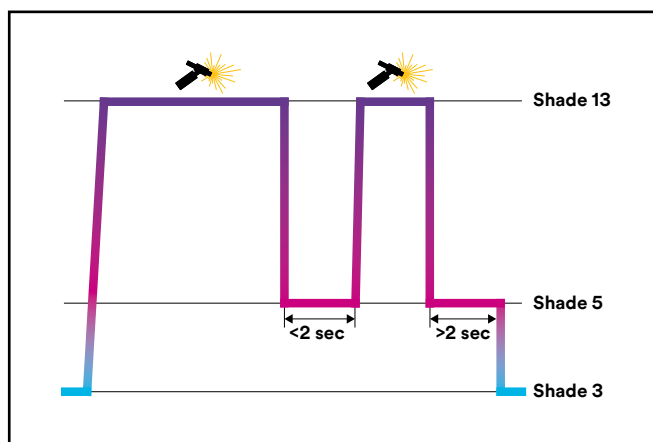
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NEW Optional helmet-mounted task light provides hours of powerful lighting for work in poorly lit spaces.



See the **NEW** Speedglas G5-01 Tack Welding mode in action via this QR code!

NEW Tack Welding Mode

Human eyes aren't designed for handling rapid transitions from dark to light to dark again - which describes tack welding perfectly!

The G5-01TW welding lens uses an intermediate shade 5 light state to help minimise eye strain during extended tack welding applications.

If an arc is not struck within 2 seconds the welding lens will switch back to its True-View light state (shade 3).

3M™ Speedglas™ G5-01TW with Heavy Duty Adflo™ PAPR
Part Number: 617820



Clean, comfortable, and lightweight protection

Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.

Speedglas™ Welding Lens 9100XXi with Auto-On and True-View for crisp colour and contrast.

Heat reflecting silver front with an external button for grind and welding memory settings.

The all-new face seal follows the contours of both the helmet and your face.

The air duct is an integral part of the helmet, providing a refreshing flow of air across the entire breathing zone of the helmet.



High comfort head harness with two crown straps for optimum balance.

SideWindows: Shade 5 windows enhance your peripheral vision to widen your overall field of view.

An innovative quick-release attachment enables one-handed breathing tube connection and release.



Seamless switching

Switch between grind mode and two preset welding memory modes with the push of an external button. This allows you to easily move between applications while maintaining your positive pressure respiratory seal.

3M Speedglas Welding Helmet 9100XXi Air with Adflo™ PAPR
Part Number: 507726

3M Speedglas Welding Helmet 9100XXi Air with Heavy Duty Adflo™ PAPR
Part Number: 507726HD



Middle airflow channel to keep your welding lens fog free.

Two side channels deliver a smooth flow of fresh air directly to the breathing zone.

Five levels of welding protection



Compliant with Australian and New Zealand Standard AS/NZS1337.1 for high impact eye and face protection.

Lens reacts down to an industry-leading 1 amp.

Speedglas™ Welding Lens 9100XXi with Auto-On and True-View for crisp colour and contrast.

Smooth flip-up function with curved 170x100 mm clear protective visor, increasing your peripheral vision to 180°.



The safety helmet is made from heat-resistant polycarbonate and conforms to Australian and New Zealand Standard AS/NZS1801 for head protection.



Designed from inception to accept 3M™ Peltor™ H31 Earmuffs (Class 4).

SideWindows: Shade 5 windows enhance your peripheral vision to widen your overall field of view.

An innovative quick-release attachment enables one-handed breathing tube connection and release.



Weld with confidence

Combining eye, head, face, hearing and respiratory protection, this highly integrated welding and safety helmet will enable you to carry out your welding with absolute comfort and confidence!

3M Speedglas Welding Helmet 9100XXi MP Air with Adflo™ PAPR
Part Number: 577726

3M Speedglas Welding Helmet 9100XXi MP Air with Heavy Duty Adflo™ PAPR
Part Number: 577726HD

Mobile and adaptable respiratory protection

3M™ Adflo™ Powered Air Purifying Respirator (PAPR)

As one of the most popular respirators of its kind in the world, the Adflo™ Powered Air Purifying Respirator is designed to provide a constant nominal airflow rate of 170/200 litres per minute, regardless of the battery's charge or the particle loading of the filter.

With its slim profile, the Adflo respirator offers excellent lightweight, adaptable and easy-to-use respiratory protection.

NEW Heavy Duty Adflo Available



Technical Data	3M™ Adflo™ Powered Air Respirator
Approvals Respiratory Protection	Conforms to AS/NZS1716
Required Minimum Protection Factor (RMPF) ¹⁾	50
Airflow Standard Airflow Plus	170 litres/minute 200 litres/minute
Battery: Charging time	Li-ion with rapid charge (0-80% in an hour) ²⁾ 4.5 hours (standard), 5.5 hours (heavy duty)
Operating hours	8 hours (standard) or 12 hours (heavy duty)
Weight Respirator	960 grams
Noise level dB	Max 75 dB
Belt	Leather 75-115cm

Gas and odour filters are available as an optional extra.

1) For mechanically and thermally generated particles.
2) Standard battery will be 80% charged (6.4 hours run time) in approximately one hour.
Heavy duty battery will be 80% charged (9.6 hours run time) in approximately one hour.

Award-winning protection

Since its launch, the 3M™ Adflo™ powered air respirator has become synonymous with effective respiratory protection. The system is designed to meet the specific needs of welders.

Upgraded features

The new Li-ion Adflo respirator is over 15% lighter and has one-hour rapid charge. A self-adjusting quick-release breathing tube allows for simple one handed connection and release.

Clean air to breathe

Constant, clean air flows directly into your breathing zone. Choose between 170 litres per minute or 200 litres per minute (for hot, humid jobs) with the push of a button.

Adaptable filtration

With the right type of filter, the Adflo powered air respirator effectively protects against a range of gases, vapours and particles.

You only have one set of lungs

The Adflo respirator complies with Australian and New Zealand Standard AS/NZS1716 for powered air respirators and offers a Required Minimum Protection Factor (RMPF) of 50 for mechanically and thermally generated particles.

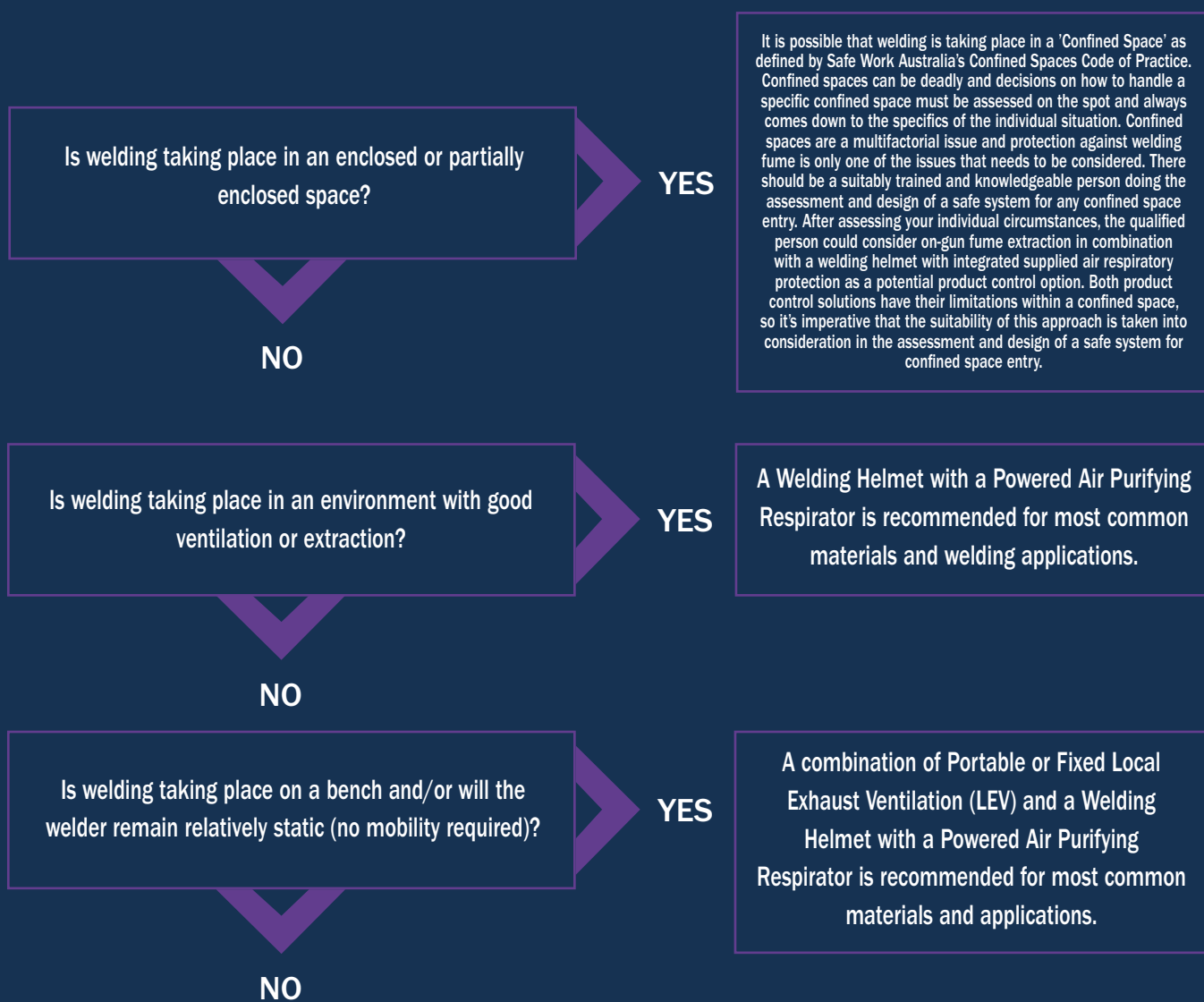
Built to last

An Adflo PAPR keeps you protected during long shifts. Choose either the standard 8 hour battery or a heavy-duty Adflo battery, which can offer up to 12 hours continuous protection.

Supplied air may be required in restricted spaces

The below chart has been provided to give a practical example of how to control welding fume and is provided as a basic guideline only. It should not be used as the only means of selecting a respirator or control method.

Powered and supplied air respirators must never be used in atmospheres Immediately Dangerous to Life or Health (IDLH). Always consult your Safety Engineer or Occupational Hygienist. If you require more information please contact AWS.



If Local Exhaust Ventilation (LEV) is not possible due to a restriction of space and dilution can not effectively reach the welder then supplied air respiratory protection is recommended.

Light on your belt and heavy on protection

A constant flow of clean, filtered air makes the 3M™ Versaflo™ Supplied Air Regulator V-500E ideal for working in hot and humid conditions when used in combination with the 3M™ Speedglas™ Respiratory Welding Helmet range:



3M Speedglas Heavy Duty Welding Helmet G5-01VC with V-500E supplied air regulator.
Part Number: 61 88 30



3M Speedglas Heavy Duty Welding Helmet G5-01TW with V-500E supplied air regulator.
Part Number: 61 88 20



3M Speedglas Welding Helmet 9100XXi Air with V-500E supplied air regulator
Part Number: 50 88 26



3M Speedglas Welding & Safety Helmet 9100XXi MP Air with V-500E supplied air regulator
Part Number: 57 88 26

3M™ Speedglas™ Welding Helmets



Specification	3M™ Speedglas™ Heavy-Duty Welding Helmet G5-01VC Powered Air: 61 78 30 Supplied Air: 61 88 30
MMAW (electrode)	●
MIG/MAG	●
TIG (>10A)	●
TIG (1A-10A)	●
Plasma (welding and cutting)	●
Hidden Arc	●
Tack welding	●
Grinding (welding lens)	Clear Visor
Grinding (clear visor)	170 x 104mm
Viewing area (welding lens)	73 x 109 mm
Battery lifetime	1 500 hours
Variable colour technology	Yes
Dark state	Shades 5, 8-14
Light state	Shade 3 (True-View)
UV Protection	Shade 14 (permanent)
Switching time, light-dark	0.1 ms (+23° C)
Delay (switching time, dark-light)	50-1300 ms
Two step recovery	Yes (shade 7)
SideWindows	No
Memory modes	Yes - 4 (via mobile app)
Climate flow control	Yes
Bluetooth connectivity	Yes
Optional task light	Yes
Standards Compliance	
Respiratory protection	AS/NZS1716
Eye protection	AS/NZS1338.1
Face protection	AS/NZS1337.1
Head protection	
Optional hearing protection	
Required Minimum Protection Factor (RMPF) ¹	
Powered Air Respiratory Protection - Adflo	50
Supplied Air Respiratory Protection - V-500E	100+



Welding Helmet Selector

If you're still unsure about which helmet best suits your needs, try our Welding Helmet Selector Tool: visit www.apexweldingsafety.com.au/welding-helmet-selector



3M™ Speedglas™ Heavy-Duty Welding Helmet G5-01TW Powered Air: 61 78 20 Supplied Air: 61 88 20	3M™ Speedglas™ Welding Helmet 9100XXi Air Powered Air: 50 77 26 Supplied Air: 50 88 26	3M™ Speedglas™ Welding & Safety Helmet 9100XXi MP Air Powered Air: 57 77 26 Supplied Air: 57 88 26
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
●	●	●
Clear Visor	●	Clear Visor
170 x 104mm	No	170 x 100mm
73 x 109 mm	73 x 107 mm	73 x 107 mm
1 500 hours	1 800 hours	1 800 hours
No	No	No
Shades 5, 8-13	Shades 5, 8-13	Shades 5, 8-13
Shade 3 (True-View)	Shade 3 (True-View)	Shade 3 (True-View)
Shade 13 (permanent)	Shade 13 (permanent)	Shade 13 (permanent)
0.1 ms (+23° C)	0.1 ms (+23° C)	0.1 ms (+23° C)
50-1300 ms	40-800 ms	40-800 ms
Yes (shade 5)	No	No
No	Yes	Yes
Yes - 4 (via mobile app)	Yes - 2	No
Yes	No	No
Yes	No	No
Yes	No	No
AS/NZS1716 AS/NZS1338.1 AS/NZS1337.1	AS/NZS1716 AS/NZS1338.1 AS/NZS1337.1	AS/NZS1716 AS/NZS1338.1 AS/NZS1337.1 AS/NZS1801 AS/NZS1270
50 100+	50 100+	50 100+














● Ideally suited for given application

1) For mechanically and thermally generated particles



A practical guide to respiratory protection based on material, process, and environment.

- P** = Powered air purifying respirator.
- P+A** = Powered air purifying respirator with a A1 gas filter installed.
- P+ODOUR** = Powered air purifying respirator with an odour filter installed.
- S** = Supplied air via regulator and filtration unit.

Material to be welded	Welding method	Ventilation conditions of your working environment		
		Environment with good ventilation /extraction.	Environment with limited ventilation /extraction -----> increasing exposure.	Restricted space* <small>Note: this respiratory protection solution may not be suitable for Confined Spaces as defined in AS2865.</small>
Aluminium	GMAW 	P	P or P+A	S
	TIG 	P	P or P+A	S
	PLASMA (cutting and gouging)	P	P or P+A	S
Stainless steel	GMAW/FCAW/SAW 	P	P or P+A	S
	TIG 	P	P or P+A	S
	MMA (stick) 	P	P or P+A	S
	PLASMA (cutting and gouging)	P	P+A or S	S
Steel not coated or painted	GMAW/FCAW/SAW 	P	P	S
	MMA (stick) 	P	P	S
	PLASMA (cutting and gouging)	P	P or S	S
Steel (lead based paints / oil and grease present)	GMAW/FCAW/SAW 	P	P or P+ODOUR	S
	MMA (stick) 	P	P or P+ODOUR	S
	PLASMA (cutting and gouging)	P	P or S	S
Steel galvanised	GMAW/FCAW/SAW 	P	P or P+ODOUR	S
	MMA (stick) 	P	P or P+ODOUR	S
	PLASMA (cutting and gouging)	P	P or S	S
Steel coated with 2-component paints or insulated with 2-part polyurethanes (risk of isocyanates)	GMAW/FCAW/SAW 	P	P+A or S	S
	MMA (stick) 	P	P+A or S	S
	PLASMA (cutting and gouging)	P	P+A or S	S

This chart has only been provided as an example and is provided as a basic guideline. It should not be used as the only means of selecting a respirator. Powered and supplied air respirators must never be used in atmospheres Immediately Dangerous to Life or Health (IDLH) without emergency breathing device capability (AS/NZS1715). Always consult your Safety Engineer or Occupational Hygienist.

*A 'restricted space' for the purposes of this document refers to a situation where 1) local exhaust ventilation (LEV) fume extraction is not possible due to a limitation of space, 2) general plant air (dilution) can not effectively reach the welder and 3) the space is not a confined space as defined by AS2865.

Respiratory filter guide

Code	Type of filter
E	Acid gases.
A	Organic gases, boiling point >65 °C.
AX	Organic gases, boiling point <65 °C.
P	Particle filter.
B	Inorganic gases.

Remarks

H = The chemical can be absorbed through the skin.

K = The chemical can be cancer-inducing.

S = The chemical can be a sensitiser.

- Argon and helium are inert gases which are not generally absorbed by canister type filters. These gases are not in themselves hazardous but can displace oxygen from the air when present in confined spaces.
- Ozone is not readily filtered by absorption type filters. However, ozone reverts back to normal oxygen upon contact with solid surfaces. The use of a Speedglas Welding Helmet or Protective Visor with the Adflo Respirator (particle filtration) will reduce ozone exposure. (For further information please contact AWS).
- Chemical constituents of a welding fume with very low Occupational Exposure Limits can pose special hazards and are sometimes best protected against by using a Supplied Air Regulator System. Always ask an appropriately qualified safety professional, such as an Occupational Hygienist for respiratory protection advice if you are unsure.

Suggested Filter Type				
Chemical			Supplied Air	
Aluminium	P			
Argon			Supplied Air	1
Beryllium	P		Supplied Air	K, S 3
Bromine		B		
Cadmium	P			K
Carbon Dioxide			Supplied Air	
Carbon Monoxide			Supplied Air	
Chlorine		B		H
Chlorine Dioxide		B		
Chromium Hexavalent	P			K
Chromium Trivalent	P			
Copper	P			
Fluorides	P			
Fluorine			Supplied Air	
Helium			Supplied Air	1
Isocyanates			Supplied Air	S
Hydrogen Chloride		B	Supplied Air	3
Hydrogen Cyanide		B	Supplied Air	H3
Hydrogen Fluoride		B	Supplied Air	3
Hydrogen Sulphide		B		
Iron Oxide	P			
Lead	P			
Magnesium	P			
Manganese	P			
Nickel	P			K, S
Nitrogen Dioxide			Supplied Air	
Nitric Oxide			Supplied Air	
Ozone	P	A		2
Phosgene			Supplied Air	3
Phosphine			Supplied Air	
Silicon Dioxide	P			
Sulphur Dioxide		E		
Trichloroethylene		A		K
Vanadium Oxide	P			
White Spirit		A		
Zinc	P			
Zinc Chloride	P			
Zinc Oxide	P			

About AWS

AWS was established in 1994 and has played a key role in the welding industry ever since.

As an advocate for welders' safety in Australia and New Zealand, AWS has published numerous Welding Safety White Papers, Welding Industry Reports, and Welding Fume Control Frameworks. AWS is a company that specialises in welding safety equipment, and it is our goal to raise awareness on the important issues that welders face.

As the sole agent for the 3M™ Speedglas™ range of welding helmets with integrated respiratory protection, the Nederman and Bomaksan range of portable local exhaust ventilation fume protection systems, the Translas on-gun welding fume extraction range, the range of Guide welding gloves, and a 3M personal protective equipment wholesaler, AWS are extremely well placed to help businesses understand the different types of product controls that can be introduced into the workplace to better protect welders and those who work in close proximity to welders.

For more information on welding fume monitoring, welding PPE, or welding fume LEV extraction options, please contact AWS.

www.apexweldingsafety.com.au/welding-safety-white-papers



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