



3M™ Safety Products for Welding and Grinding

PERSONAL PROTECTIVE EQUIPMENT



3M Welding

3M



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There are many potential health hazards related to welding and other metalworking jobs

Welders have to be comfortable and properly protected. Of course, it's important to protect against heat, sparks and arc burn. However, metal oxides, metal particles and gases produced in some of these operations may result in serious respiratory hazards to workers.

3M offers a full line of products that can help protect workers against head injuries, eye injuries, hearing loss and certain airborne contaminants.

1 Fumes

Metal creates fumes, which are tiny metal oxide particles formed when metal vapors cool.

Metal Fume Fever

Breathing unsafe levels of fumes can result in metal fume fever from welding on:

- Galvanized metal with zinc coating
- Cadmium, copper or magnesium

Workers may experience sweating, shivering, nausea, fever, aching muscles, weakness, fatigue and a loss of energy and appetite.^{1,2}

2 Gases

Gases are given off during many different welding operations. Above certain concentrations, these gases, including carbon monoxide, oxides of nitrogen and ozone can irritate the nose, throat and eyes and damage lungs. Ultraviolet light from the arc can react with oxygen in the air to form ozone. Other sources of hazards are electrode fluxes, shielding gases and metal treated with paint, oil or other protective coatings.

3 Hearing Protection

Many welding and welding-related applications create noise that can result in hearing loss if workers are unprotected over a period of time. Proper use of hearing protection helps reduce the risk of hearing loss due to noise.

4 Eye Protection

Welding operations present distinct eye protection needs. Those who work in these jobs have to be protected against the welding arc as well as particles and debris that are produced. Because of these hazards the use of ANSI Z87.1-2003 compliant safety glasses must always be worn under welding shields.

5 Head Protection

Certain 3M™ Speedglas™ Welding Shields meet ANSI Z89.1-2003 for head impact protection. They are lightweight and well balanced.

Comfort

Workers must feel safe and comfortable on the job or their productivity may suffer. That's why all 3M products are innovatively designed with worker comfort in mind.

1. Documentation of TLVS and BEIS, American Conference of Governmental Industrial Hygienists, 7th. edition, 2004.

2. Clayton, G.D., Clayton, F.E. Patty's Industrial Hygiene and Toxicology. Vol II New York. John Wiley and Sons Inc., 1994.





3M™ Filtering Facepiece Respirators for Welding

Welding can create a variety of fumes and gases that present unique respiratory protection challenges. 3M provides a comprehensive line of respirators and other products that can enhance safety in most welding/metalworking jobs.



3M™ Particulate Welding Respirators 8212, 8512

- 3M cake-resistant filter media for longer filter life
- Wide, adjustable straps
- Welding Web is designed to be flame resistant as demonstrated per ASTM D2859-96 (not a substitute for a faceshield)
- 3M™ Cool Flow™ Valve for added comfort in hot and humid work settings
- N95 approved
- 8212 has soft and secure face seal



3M™ Particulate Welding Respirators 8214, 8514

- Carbon filter media for nuisance level organic vapor relief; 3M recommended ozone protection up to 10 times the OSHA PEL**
- Wide, adjustable straps
- Welding Web is designed to be flame resistant as demonstrated per ASTM D2859-96 (not a substitute for a faceshield)
- 3M cake-resistant filter media for longer filter life
- 3M™ Cool Flow™ Valve for added comfort in hot and humid work settings
- N95 approved
- 8214 has soft and secure face seal

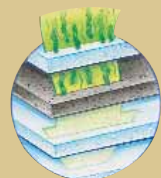


3M Technologies



Welding Web

Unique filter media and protective layers are designed to be flame resistant as demonstrated per ASTM D2859-96. (Not a substitute for a faceshield.)



Carbon Filter Material

Provides 3M recommended ozone protection (up to 10 x PEL) and relief from odors caused by nuisance level organic vapors.**

** Nuisance level organic vapor refers to concentrations not exceeding OSHA PEL or applicable government occupational exposure limits, whichever is lower. 3M recommended for ozone protection up to 10 times the OSHA PEL. Not NIOSH approved for use against ozone.

3M™ Particulate Welding Respirator 8515

- 3M™ Cool Flow™ Valve for added comfort in hot and humid work settings
- Comfortable, reliable and economical protection
- Braided strap
- Welding Web is designed to be flame resistant as demonstrated per ASTM D2859-96 (not a substitute for a faceshield)
- Adjustable M-noseclip for greater comfort
- Lightweight
- N95 approved



3M™ Filtering Facepieces for Grinding/Weld Clean-Up

Workers who perform grinding, sanding and related operations may require proper respiratory protection. In addition, they should use protection against head, face and eye injury as well as protection against hearing loss. 3M offers a complete line of safety products that can help protect and keep workers comfortable in these applications.



3M™ Particulate Respirator 8210

- Lightweight construction
- Nose foam
- Adjustable noseclip
- Helps provide excellent worker protection
- N95 approved



3M™ Particulate Respirator 8511

- 3M™ Cool Flow™ Valve for added comfort in hot and humid work settings
- Braided straps for enhanced comfort
- M-noseclip
- N95 approved
- Lightweight construction
- Helps provide excellent worker protection



3M™ Particulate Respirators 9210, 9211

- Collapse-resistant design
- Wide soft absorbent nose foam
- Individually packaged for convenient storage and handling
- Conforms to a wide range of face sizes
- Lightweight and comfortable
- 9211 (shown) has 3M™ Cool Flow™ Valve for added comfort in hot and humid work settings
- N95 approved



3M™ Half and Full Facepiece Respirators for Welding, Grinding and Sanding Applications

Sparks, particles, ozone and other nuisance gases and vapors as well as breathing resistance and heat build up are primary considerations when selecting respiratory protection for welding and grinding applications. 3M's selection of half facepiece respirators offer lightweight, low profile, easy-breathing respirator protection.



3M™ Half Facepiece Respirators 6000 Series Reusable Provides Lightweight, Easy-to-use, Economical Protection

- An economical choice.
- Facepiece is made from soft, lightweight thermoplastic elastomer.
- Available with a standard or drop-down head harness option.
- Drop-down model allows wearers to lower the respirator without removing welding shield, hardhat or faceshield.
- Head harness assembly and spare parts available.



3M™ Half Facepiece Respirators 7500 Series Reusable Provides Comfortable Soft Silicone Faceseal

- Made of silicone for greater comfort and fit; and provides a softer feel on the face.
- 3M™ Cool Flow™ Exhalation Valve for easy exhalation for cool, dry comfort; and designed to be long lasting.
- Can be used with a variety of cartridges* and filters that help protect against both dust and/or odor.

* May not fit under all welding shields



3M™ Full Facepiece Respirator 7800S Ultimate Reusable Provides Durable Full Face Protection

- Available in many configurations ranging from negative pressure air purifying to SCBA. Excellent choice for eye protection combined with respirator durability.
- Extra-large inhalation and exhalation valves help make breathing easier.
- Double-flange faceseal and six adjustable straps help provide a secure fit.
- Available in 11 different modes – from negative-pressure to purifying to SCBA. Excellent choice for standardizing your entire facility's respiratory requirements.



The 3M™ Clip-On Welding Shield Kit 7990/7990-AM is designed to attach to the 3M 7800S Series Full Facepiece Respirators. It accommodates standard 4.5 in. x 5.25 in. (114.3mm x 133.4mm) passive shade welding lens or 3M Electronic Lens Assembly 7991/7991-AM.



Filters For Use With 3M™ Welding and Grinding Facepieces

Flexible, lightweight, and conforming to welding shields.

2071 Particulate Filter, P95



- Lightweight and easy to breathe through.
- Recommended for grinding, welding, sanding, sawing, sweeping, or other dusty operations.
- At least 95% filtration efficiency against solid and liquid particles including oils*.

2091 Particulate Filter, P100



- Lightweight and easy to breathe through.
- Features 3M Welding Web which is ideal for welding, metal pouring, torch cutting, abatement or OSHA substance specific particle exposure.
- At least 99.97% filtration efficiency against solid and liquid particles including oils*.
- Welding Web is designed to be flame resistant as demonstrated per ASTM D2859-96 (not a substitute for a faceshield).

7093 Particulate Filter, P100



- Designed for higher-heat applications.
- Innovative air inlet design creates a channeled airflow that reduces premature clogging and plastic cover helps protect filter from sparks and flying particles.
- At least 99.97% filtration efficiency against solid and liquid particles including oils*.

2097 Particulate Filter, P100 with Nuisance Level Organic Vapor Relief**



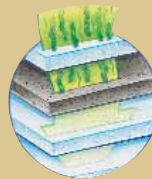
- Specially designed carbon filter material helps remove nuisance level organic vapors** which may be present while welding on metals such as galvanized, stainless, or aluminum.
- 3M recommended for ozone protection up to 10 times the OSHA PEL. Not NIOSH approved for use against ozone.
- Features 3M Welding Web which is ideal for welding, metal pouring, torch cutting, abatement or OSHA substance specific particle exposure.
- At least 99.97% filtration efficiency against solid and liquid particles including oils*.
- Welding Web is designed to be flame resistant as demonstrated per ASTM D2859-96 (not a substitute for a faceshield).

3M Technologies



Welding Web

Unique filter media and protective layers are designed to be flame resistant as demonstrated per ASTM D2859-96. (Not a substitute for a faceshield.)



Carbon Filter Material

Provides 3M recommended ozone protection (up to 10 x PEL) and relief from odors caused by nuisance level organic vapors.**

For assistance in helping you select products or build a respiratory system that is most appropriate for your needs, please call 3M Technical Service at 1-800-243-4630.

* Tested against particles approximately 0.3 micron in size (mass median aerodynamic diameter) per 42 CFR 84.

** Nuisance level organic vapor refers to concentrations not exceeding OSHA PEL or applicable government occupational exposure limits, whichever is lower. 3M recommended for ozone protection up to 10 times the OSHA PEL. Not NIOSH approved for use against ozone.



3M™ Speedglas™ with Adflo™ Eye, Face and Respiratory Protection

Are your employees working in exhausting, hard-to-breathe-in environments? Let them try one of our many positive pressure systems for just a couple of hours. That's all it takes to realize how comfortable work can be.

- Comfort can lead to more work time
- Cool or heat incoming air
- Benefit from air flowing into the welding shield

3M™ Speedglas™ Helmet 9000 HWR with Adflo™ System Auto-Darkening Filters (ADF's) with Respiratory Protection



For Welding

We've reinvented the powered air-purifying respirator (PAPR) for welders. The result is 3M™ Speedglas™ with Adflo™ System: a lightweight, compact, all-in-one system. Its exclusive "stackable" configuration means that the Adflo high

efficiency (HE) particulate filter can be combined with a chemical cartridge for additional protection.

3M™ Speedglas™ FlexView with Adflo™ System

The new FlexView system combines full eye and face protection (ANSI Z87.1-2003) (for both welding and non-welding activities)



For Welding and Weld Prep/Grinding

with a slim, lightweight, powered air purifying respirator. For chipping, grinding, or preparation, the user simply lifts up the spring-mounted Speedglas filter

assembly. The spring holds the auto-darkening filter securely on top of the helmet, giving the welder a clear view through the clear polycarbonate faceshield that meets the high impact test requirements of ANSI Z87.1-2003.

3M™ ClearVisor with Adflo™ System

The new ClearVisor with Adflo system combines eye and face protection (ANSI Z87.1-2003) with a slim, lightweight, powered air-purifying respirator (PAPR).



The polycarbonate ClearVisor faceshield provides an exceptionally wide viewing area. The ClearVisor meets the high impact test requirements of ANSI Z87.1-2003.

For Non-Welding Applications

Note: Not for paint spraying of flammable substances, or where intrinsic safety is required.

Note: Because faceshields and welding shields can be raised from the normal position, ANSI Z87.1-2003 states that safety spectacles or goggles must be used in conjunction with these respirators.



3M™ Speedglas™ with Supplied Air Respiratory Protection

3M™ Fresh-air II Supplied Air System with 3M™ Speedglas™ Helmet 9000 HWR

The NIOSH-approved supplied air (SA) 9000 system provides respiratory protection from airborne particulates and gases. The lightweight, belt-mounted valves permit the welder to adjust the temperature of the air entering the headpiece $\pm 45^\circ$, making it ideal for very hot or strenuous jobs.



- Cool-air valve permits welder to lower the temperature of the supplied air by up to 45°F (25°C).
- Temp-air valve allows either cooling or warming of the supplied air $\pm 45^\circ\text{F}$ from the supplied air temperature.



Valve Model	CFM Required	CFM Delivered	Pressure Range (psig)	Max. # of Hoses/Length*
Cool-air	12-25	6-15	70-105	4 hoses/100'
Temp-air	12-25	6-15	85-110	4 hoses/100' **

*Indicates maximum number of hoses and maximum total length.

**Temp-air valve is approved for use with breather hose only.



Note: Final determination of respirator applicability and filter selection must be made by an on-site safety specialist or industrial hygienist.

Note: Because faceshields and welding shields can be raised from the normal position ANSI Z87.1-2003 states that safety spectacles or goggles must be used in conjunction with these respirators.



3M™ Bumpcap and Hardhat Positive Pressure Respirator Products

L-Series positive pressure headgear provides many comfortable advantages:

- Meets ANSI Z87.1-2003 for eye and face impact protection. Certain models meet ANSI Z89.1-2003, Type II for head top and side impact.
- Easier to breathe-in than traditional forms of respiratory protection or no respirator at all; with no tight faceseal.
- Wide-view lens allows for excellent peripheral and downward vision.
- Headgear is lightweight and well balanced.
- Can be worn with facial hair, prescription eyewear or safety glasses. Do not wear if facial hair comes between the face and respirator faceseal.

Product Options for Welding and Grinding

With several options for headgear, faceshields and other accessories, you can build a complete powered air or supplied air system designed specifically for your needs.

Bumpcap (L-500 Series)



- Assigned protection factor of 25 x PEL.
- Lightweight and fully adjustable for a comfortable fit.

Note: L-500 Bumpcap does not provide head protection.

Hardhat (L-700 Series)



- Meets ANSI Z89.1-2003 Class I plus Class II side-impact requirements for industrial protective headgear.
- Assigned protection factor of 25 x PEL.
- Lightweight and fully adjustable for a comfortable fit.

Helmet (L-900 Series)



- Meets ANSI Z89.1-2003 Class I plus Class II side-impact requirements for industrial protective headgear.
- Neck shroud helps provide respiratory protection up to 1,000 x PEL.
- Fully adjustable for a comfortable fit.

Welding shield



- Available in standard 4.5 in. x 5.25 in. (114.3 mm x 133.4 mm) welding filter or with optional electronic welding filter.
- Faceseal helps provide respiratory protection when the shield is lowered.
- Can be worn with eyeglasses and facial hair. Do not wear if facial hair comes between the face and respirator faceseal.

Welding shield and faceshield

- Inner shield provides ANSI eye/face impact protection during applications where the welding shield might be lifted (chipping, grinding, etc.).
- Inner shield allows workers to sight the workpiece before lowering the welding shield into place.

Connect Your Air Supply Using Your L-Series Headgear



The 3M™ Breathing Tube L-122



Select a 3M™ Powered Air Purifying Respirator (PAPR) Assembly or 3M™ Air Control Device

3M™ PAPR Systems

Allow for greater worker mobility and offers the flexibility to work in a variety of environments.



3M™ Belt-Mounted PAPR Assembly GVP-1

Includes motor blower, battery pack, charger, flow meter, flow meter adapter, power cord, blower plugs and web belt.



3M™ Cartridge/Filters for PAPR

GVP-440: HEPA

GVP-441: Organic vapor/HEPA

GVP-442: Acid gas/HEPA

GVP-443: Organic vapor/acid/gas/HEPA

3M™ Supplied Air Control Devices

3M™ Vortex Cooling Assembly V-100*



Allows worker to regulate the airflow and cool air by as much as 50°F (28°C).

3M™ Vortemp™ Heating Assembly V-200*



Allows worker to regulate the airflow and warm air by as much as 50°F (28°C).

3M™ Air Regulating Valve Assembly V-300*



Allows worker to regulate the airflow to the headgear.

3M™ Air Supply Hose



3M™ Supplied Air Hose W-9435 (High pressure)

Straight – 25, 50 or 100 ft. (7.6, 15.2 or 30.5m)



3M™ Supplied Air Hose W-2929 (High pressure)

Coiled – 25, 50 or 100 ft. (7.6, 15.2 or 30.5m)

3M™ Portable Air Purification Panels



256-02-00



W-2806/07006

For assistance in helping you select products or build a respiratory system that is most appropriate for your needs, please call 3M Technical Service at 1-800-243-4630.

Note: W-2808/37027 CO monitor retrofit kit also available.

* Also available in stainless steel.



3M™ Speedglas™ Auto-Darkening Filters



The highly-respected Speedglas line of auto-darkening welding filters and products is now part of 3M.

See the Complete Catalog of Speedglas products or www.Speedglas.com for details.

Safety Products That Help Increase Your Performance

Now welders can see their work, at comfortable light levels, with constant eye and face protection. 3M™ Speedglas™ Filters turn dark the moment an arc is struck and transparent again when welding stops—all the time with full UV/IR protection.

Auto-darkening eliminates the neck-strain of “helmet nodding” while helping increase the accuracy of electrode placement.

This, in turn, helps reduce the need for grinding and rework. In addition, welders can get into tight, cramped spaces with full protection and have a clear view, making extremely awkward welds a lot easier.

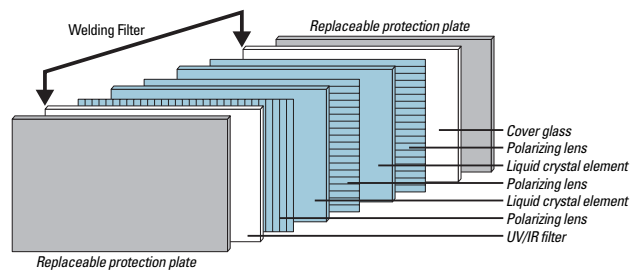


Constant UV/IR Protection:

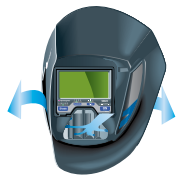
This filter provides the same UV/IR filtration protection as a traditional, non-auto-darkening welding filter (as regulated by USA and Canadian welding safety standards).

How Auto-Darkening Safety Works

Each 3M™ Speedglas™ Auto-Darkening Filter (ADF) is a laminate of seven different layers: a UV/IR filter, three polarizers, two liquid crystal elements and a cover glass. The UV/IR filter continually blocks harmful radiation, whether the filter is ON, OFF, light or dark. Aided by surface-mounted electronics, the proprietary liquid crystal elements act as shutters that detect and react to the welding arc by instantly shading the filter. Meets ANSI Z87.1-2003 American National Standard Institute for eye and face protection.



Note: Because faceshields and welding shields can be raised from the normal position, ANSI Z87.1-2003 states that safety spectacles or goggles must be used in conjunction with these respirators.



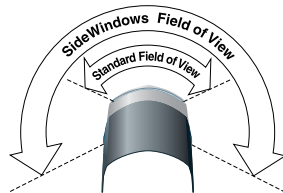
Welding Helmets That Breathe

The revolutionary 3M™ Speedglas™ Helmet 9000 features patented aerodynamic exhaust vents that help to enhance the flow of exhaled air.

Note: Exhaust vents are *not* available on the Speedglas Utility filter and helmet model.

Ideal for Weld Prep/Grinding

The 3M™ Speedglas™ FlexView System has a big 4.7 in. x 3.6 in. (120mm x 90mm) clear polycarbonate faceshield that's ideal for precision weld preparation work under a variety of lighting conditions. The user simply lifts up the spring-mounted Speedglas filter assembly for weld prep. The faceshield meets the ANSI Z87.1-2003 industrial eye and face protection standard.



3M™ SideWindows Helmets Improve Visibility, Safety and Comfort

3M™ Speedglas™ SideWindows Helmets allow for peripheral vision. The two shade 5 side filters increase the peripheral viewing area by over 100%.

SideWindows filters allow welders to see potentially-hazardous peripheral objects, such as protruding beams, vehicles, and other welders, with the helmet down.

SideWindows also permit welders to easily move around their work area with constant protection from UV/IR radiation.

The two side filters are designed solely for peripheral vision; the welder continues to view his own arc through the center (auto-darkening) filter.

A Balanced Hard Hat for Welders

The 3M™ Speedglas™ ProTop System has an exclusive pivot mechanism that “nests” the welding helmet down low over the hard hat, in a balanced, secure position. The lower center-of-gravity helps reduce neck strain.



3M™ Hearing Protection Products for all Types of Welding Noise

3M offers hearing protection products that can meet the needs of a wide range of welding-type applications. In addition, we offer hearing training programs and materials that can help you comply with OSHA requirements and meet the needs of your hearing conservation program.

- Comfortable
- Reliable protection
- Lightweight
- Easy to use
- Can be used with other personal protection equipment



3M™ Banded Hearing Protector 1310

- Noise Reduction Rating
 - 21dB when worn behind the head*
 - 20dB when worn under the chin*
- Unique comfortable band stays in place with low pressure and more comfort
- 3M™ Replacement Pads 1311 are available



3M™ Foam Ear Plugs 1120/1130

- Noise Reduction Rating of 28dB*
- Smooth, dirt-resistant surface
- Hypo-allergenic
- Soft foam seals ear canal comfortably
- Model 1130 has soft, braided cord for convenience



3M™ Reusable Ear Plugs 1260/1270/1271

- Noise Reduction Rating of 24dB*
- Triple-flanged plugs fit securely into the ear canal to help provide reliable protection
- Model 1270 has a braided cord for convenience
- Model 1271 has a braided cord and convenient carrying case

* The noise reduction rating may overstate actual protection provided. See product packaging and warnings for specific information.

⚠WARNING

Hearing Protection Products

These hearing protection products help reduce exposure to certain noises. To provide proper protection, the hearing protector should be (1) suitable for the job, (2) fitted properly in/on the ear, (3) worn during all times of exposure to noise and (4) replaced when damaged or otherwise necessary. **Misuse may result in hearing loss or injury.** For proper use, see supervisor, product instructions and warnings or call 3M OH&ESD Technical Service at 1-800-243-4630. In Canada, call 1-800-367-4414.



3M™ Protective Eyewear for Welding Operations

3M's lightweight, protective eyewear line can be comfortably worn with other welding gear and safety equipment. This eyewear is available in many configurations for use in a wide range of conditions. They all meet the requirements of ANSI Z87.1-2003. All 3M protective eyewear models feature polycarbonate lenses to help provide 99% UV** protection. The wrap-around design of these safety glasses helps provide side protection. They are lightweight, comfortable and designed for worker acceptance.

** Not for protection from UV radiation from arc welding



3M™ Protective Eyewear

- 1700, Black Frame/Clear Lens
- 1701, Smoke Frame/Smoke Lens
- 1702, Clear Frame/Clear Lens



3M™ Protective Eyewear 1750, 1751, 1752, 1760

- Stylish, contemporary design
- Lightweight, comfortable lens
- Wraparound design helps provide side protection
- Shatter-resistant polycarbonate lens with 3M logo
- Provides 99% UV protection
- 1750—Gray Frame, Clear Lens
- 1751—Gray Frame, Smoke Lens
- 1752—Blue Frame, Mirrored Lens
- 1760—Clear Frame, Clear Lens

⚠WARNING

Protective Eyewear

These safety products provide limited protection only. **Do not use** when performing torch burning, torch cutting, torch welding, electric (arc) welding, furnace corrections, molten metals operations, or any other operations which expose your eyes to harmful levels of infrared and ultra-violet radiation. **Misuse or failure to follow warnings and instructions may result in serious personal injury, including blindness or death.** For proper use, see supervisor, product instructions and warnings or call 3M OH&ESD Technical Service at 1-800-243-4630. In Canada, call 1-800-267-4414.



3M™ Head Protection Products

Head injuries are among the most common injuries that occur in all industries. For that reason, industry standards have been established to help protect against such injuries. 3M offers a line of hard hats that can be used in virtually all industrial applications. These hard hats meet the requirements of ANSI Z89.1-2003, Type 1, Class C, E, and G. They are available with a slide or ratchet suspension for size adjustment.



3M™ Omega II™ Hard Hats, Standard Suspension

- Lightweight and well balanced for worker comfort and acceptance
- Slide sizing adjustment with six-point suspension
- Fits sizes 6 1/2 - 8
- Packaged 30/case



3M™ Omega II™ Hard Hat with Ratchet Suspension, 1911, 1912, 1913, 1915, 1916

A durable, lightweight hard hat featuring a well-balanced, low-profile design. Ratchet suspension makes fitting easy and helps keep the hard hat secure in the most physically active jobs or extreme weather conditions. Fits head sizes 5-7/8 to 8. Comfortable, impact-absorbing 6-point woven nylon suspension.

Part Number	Description
1901	Omega II™ Hard Hat, Standard Suspension, White
1902	Omega II™ Hard Hat, Standard Suspension, Yellow
1903	Omega II™ Hard Hat, Standard Suspension, Orange
1905	Omega II™ Hard Hat, Standard Suspension, Red
1906	Omega II™ Hard Hat, Standard Suspension, Blue
1904	Replacement Standard Suspension for Omega II™ Hard Hat
1911	Omega II™ Hard Hat, Ratchet Suspension, White
1912	Omega II™ Hard Hat, Ratchet Suspension, Yellow
1913	Omega II™ Hard Hat, Ratchet Suspension, Orange
1915	Omega II™ Hard Hat, Ratchet Suspension, Red
1916	Omega II™ Hard Hat, Ratchet Suspension, Blue
1914	Replacement Ratchet Suspension for Omega II™ Hard Hat

⚠ WARNING

Head and Face Protection

These safety products provide limited protection only. **Misuse or failure to follow warnings and instructions may result in serious personal injury or death.** For proper use, see supervisor, product instructions and warnings or call 3M OH&ESD Technical Service in the U.S.A., 1-800-243-4630. In Canada, call 1-800-267-4414.



3M™ Health and Safety Services

Web-Based Tools To Help You Achieve A Safer, More Productive Workplace

Interactive Training Designed to Maximize Learning While Helping Meet OSHA 1910.134 (k) Requirements

3M recommends the 3M™ Respiratory Protection e-Training for annual and refresher training in combination with a fit testing program. This unique, customizable training program was developed utilizing learning psychology techniques to help employees stay engaged and interested in the material.

- Training is for either negative pressure or PAPR products and customized to your location, application and respirator, reducing the amount of time spent supplementing more generic training sessions.
- Training is consistent; workers are presented with the same information the same way every time, eliminating variability between instructors and simplifying respiratory protection training.
- On-line training is available 24 hour a day, 365 days a year, simplifying scheduling for employees who work outside normal business hours or are unable to attend scheduled class dates.

3M™ On-Line Respirator Medical Evaluations

The OSHA Respiratory Protection Standard 29 CFR 1910.134 mandates that employees required to use a respirator complete a medical evaluation successfully prior to wearing a respirator. On-Line Respirator Medical Evaluations provide you with a low cost, convenient and easy to use method to help comply with regulations. 3M offers you:

- Not respirator brand specific! 3M provides respirator medical evaluations for all brands and types of respirators.
- Evaluations can be completed using any computer with internet access.
- Employees and employers receive immediate notification of the results.
- All employees are evaluated using the same expanded OSHA Medical Questionnaire.

For additional information on either of these services, please visit www.respexam.com or call **1-800-383-3393**.

3M Professional Development and Training Courses

3M offers comprehensive professional development courses to provide the most current information on respiratory protection, managing a respiratory protection program and applicable regulations. We offer training for the respirator user as well as for the respirator program administrator.

Visit www.3M.com/Occsafety and click on “Training Courses” in the left hand navigation to find out more.

Respiratory Protection Based on Types of Contaminants Found in Welding Operations

Particulate Respirators



Contaminant/Application	Potential Health Effects from Overexposure ^{1,2}	8000	8210	8511
Particles				
General Dust	Depends on contaminants, includes respiratory irritation	■	■	■
Metal Fume				
Steel/Manganese Alloys	Pneumoconiosis, Siderosis, Central Nervous System effects	■	■	■
Stainless Steel	Pneumoconiosis, kidney effects, lung irritation, cancer	■	■	■
Aluminum	Respiratory irritation (due to ozone)	■	■	■
Galvanized Steel	Metal Fume Fever	■	■	■
Cadmium	Metal Fume Fever, respiratory irritation, lung cancer, kidney effects			
Lead	Central Nervous System effects, systemic poisoning			
Gases				
Ozone	Respiratory irritation, lung congestion, bronchitis, headache, dry throat			
Carbon Monoxide	Anoxia, Central Nervous System effects			
Carbon Dioxide	Asphyxiation			
Phosgene	Respiratory irritation, anoxia, pulmonary edema			
Oxides of Nitrogen	Respiratory irritation and edema			

1. Documentation of TLVS and BEIS, American Conference of Governmental Industrial Hygienists, 7th. edition, 2004. 2. Clayton, G.D., Clayton, F.E. Patty's Industrial Hygiene and Toxicology, 7th. edition, 1996. 3. 3M recommends the use of a respirator in traditional or drop-down mode. 4. Other facepieces are available. Please see our web site www.3M.com/Occsafety, www.Speedglas.com or call 1-800-896-4223. 5. 3M recommends the use of a respirator in traditional or drop-down mode. 6. 3M recommends the use of a respirator in traditional or drop-down mode. 7. 3M recommends the use of a respirator in traditional or drop-down mode. 8. 3M recommends the use of a respirator in traditional or drop-down mode. 9. 3M recommends the use of a respirator in traditional or drop-down mode. 10. 3M recommends the use of a respirator in traditional or drop-down mode. 11. 3M recommends the use of a respirator in traditional or drop-down mode. 12. 3M recommends the use of a respirator in traditional or drop-down mode. 13. 3M recommends the use of a respirator in traditional or drop-down mode. 14. 3M recommends the use of a respirator in traditional or drop-down mode. 15. 3M recommends the use of a respirator in traditional or drop-down mode. 16. 3M recommends the use of a respirator in traditional or drop-down mode. 17. 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⚠ WARNING

Filtering Facepiece/Elastomeric Facepiece Respirators

No respirator is capable of preventing all airborne contaminants from entering the wearer's breathing zone. Respirators help protect against certain airborne contaminants by reducing concentrations in the breathing zone to below the PEL or other recommended exposure level. **Misuse of respirators may result in overexposure to the contaminant and cause sickness or death.** For this reason, proper respirator selection, training, use, and maintenance are mandatory in order for the wearer to be properly protected. Use these respirators only for those specific chemical compounds for which they have been approved or recommended. For proper use, see supervisor, product instructions and warnings or call 3M OH&ESD Technical Service at 1-800-243-4630. In Canada, call 1-800-267-4414.


⚠ WARNING

These welding safety products must be used only by qualified persons trained in their use and maintenance and only in strict accordance with and adherence to the detailed instructions and precautionary statements provided in the instruction manual which accompanies each product. **Failure to comply with these instructions could result in sickness, serious bodily injury or loss of life.**

For proper use of these products read user instructions and warnings on the package. Any questions concerning proper use should be directed to your supervisor, on-site training specialist, industrial hygienist or 3M Occupational Health and Environmental Safety Division (OH&ESD) Technical Service in the U.S.A. at 1-800-243-4630. In Canada, call 1-800-267-4414.

	Welding Respirators			Air Purifying/PAPR/SAR Elastomeric Facepiece Respirators			PAPR Loose-Fitting Facepiece Respirators	Airline Systems
	8515	8512/8212	8514/8214	2091 P100	2097 P100	7093 P100	3M™ Speedglas™ with Adflo System ⁴	3M™ Fresh-air II Supplied Air System
	■	■	■	■	■	■	■	■
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Respirator recommended when contaminants are above regulatory limits								
			■ ⁵		■ ⁵			■
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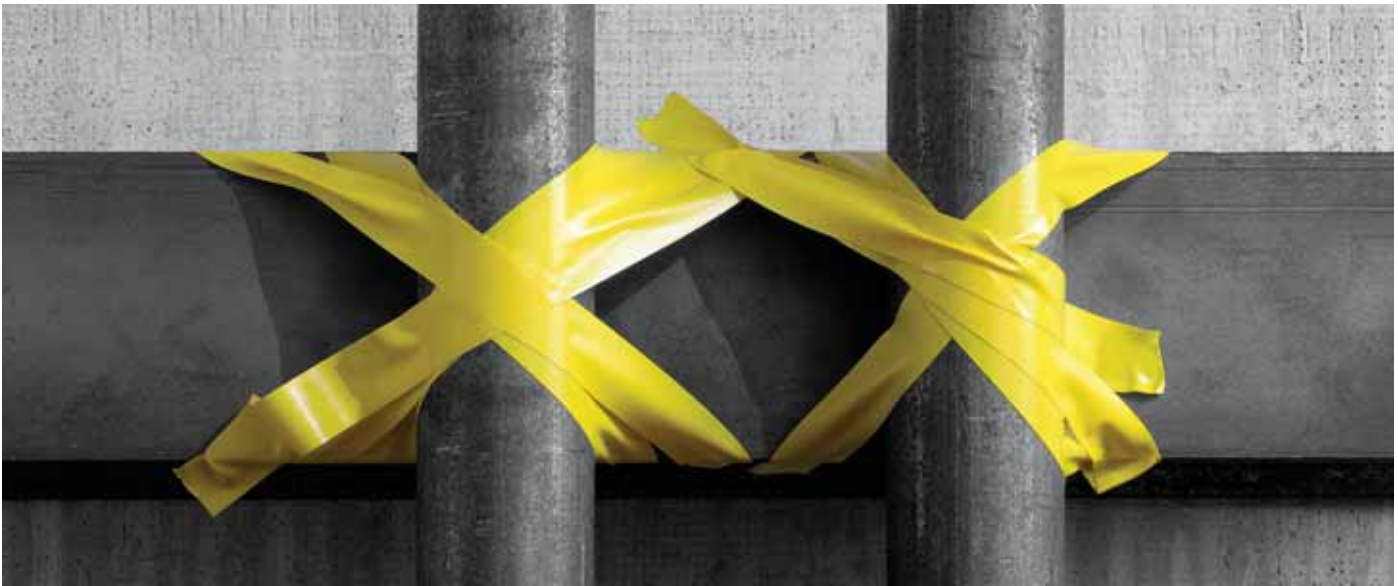
...ology. Vol II New York. John Wiley and Sons Inc., 1994. 3. Dual-mode head harness design adjusts easily so that the user has the option of wearing the respirator in either d for applications where ozone and nuisance level organic vapors may be present. 3M recommended for ozone protection up to 10 times the OSHA PEL or applicable government anic vapors refer to concentrations not exceeding the OSHA PEL, or applicable government occupational exposure limits whichever is lower. Do not use when concentrations of



⚠ WARNING

Positive Pressure Respirators

No respirator is capable of preventing all airborne contaminants from entering the wearer's breathing zone. Respirators help protect against certain airborne contaminants by reducing concentrations in the breathing zone to below the PEL or other recommended exposure level. **Misuse of respirators may result in overexposure to the contaminant and cause sickness or death.** For this reason, proper respirator selection, training, use, and maintenance are mandatory in order for the wearer to be properly protected. Use of these respirators by untrained or unqualified persons, or use not in accordance with the instructions, may adversely affect product performance and **result in sickness or death.** These respirators are to be used only by qualified persons who are properly trained in their use and maintenance, and only in accordance with their operating and maintenance manuals. Each person using these products must first read and understand the operator's manual. L-series faceshields help provide limited face and eye protection. Because faceshields and welding shields can be raised from the normal position, ANSI Z87.1-2003 states that safety spectacles or goggles must be used in conjunction with these respirators. Misuse may result in face and/or eye injury. For proper use, see supervisor, product instructions and warnings or call 3M OH&ESD Technical Service at 1-800-243-4630. In Canada, call 1-800-367-4414.



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Note: The items featured in this brochure do not represent 3M's complete line of products for welding and metalworking applications. For assistance in selecting the products or building respiratory systems that are most appropriate for your needs, please call 3M Technical Service at 1-800-243-4630. In Canada, call 1-800-267-4414.

For More Information

In U.S.

Technical Assistance 1-800-243-4630

Customer Care Center 1-800-328-1667

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www.3M.com/Occsafety

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3M develops, manufactures and markets over 50,000 different consumer, commercial, industrial and health care products. We have manufacturing operations in 60 countries and do business in more than 200 countries. 3M can help you achieve corporate goals, meet and exceed government standards, simplify and improve the lives of your employees, and contribute to a safe, healthy and sustainable work environment.

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