

# SAFETY & HEALTH AWARENESS SHEET

## PROTECTION FROM WILDFIRE SMOKE

### **INTRODUCTION**

Wildfires can occur without warning. When wildfire smoke is present, it can be unhealthy for people who work outside, or inside of buildings and vehicles where the air is not filtered. Wildfire smoke is a mixture of air pollutants of which particulate matter, known as PM2.5, is the principal health threat. PM2.5 is made up of solid particles and liquid droplets suspended in air with an aerodynamic diameter of 2.5 micrometers or smaller.

The harmful health effects from breathing the fine particles of PM2.5 can range from eye and respiratory tract irritation to more serious effects, including reduced lung function; pulmonary inflammation; bronchitis; exacerbation of asthma and other lung diseases; exacerbation of cardiovascular diseases, such as heart failure; and even premature death.

The Air Quality Index is used to determine the level of PM2.5 to which employees could be exposed at a workplace location. The current Air Quality Index for PM2.5 (hereinafter "AQI") is divided into six health-related categories that can be found below, and as stated in Table 2 of Title 40 Code of Federal Regulations, Part 58, Appendix G.

These are:

1. 0 to 50 – Good
2. 51 to 100 – Moderate
3. 101 to 150 – Unhealthy for Sensitive Groups
4. 151 to 200 – Unhealthy
5. 201 to 300 – Very Unhealthy
6. 301 to 500 – Hazardous

Although a large population can be exposed to smoke during a wildfire event, most healthy adults will recover quickly from temporary wildfire smoke exposure. Certain populations may, however, be at greater risk of experiencing health effects, including people with respiratory or cardiovascular diseases, children and older adults, and outdoor workers.

Employers are required to provide a workplace free of recognized hazards under OSHA's General Duty Clause. The U.S. Environmental Protection Agency has published a document titled "Wildfire Smoke, A Guide for Public Health Officials" located at:

<https://www.airnow.gov/sites/default/files/2019-10/wildfire-smoke-guide-revised-2019.pdf>. It can provide guidance for protecting employees from wildfire smoke wherever your productions are located.

In California, the California Code of Regulations (CCR), Title 8, Section 5141.1 requires that employers should reasonably anticipate when employees may be exposed to wildfire smoke and take steps to protect workers from harmful exposure if the air quality is unhealthy due to the wildfire smoke.

Based on this regulation, this Safety & Health Awareness Sheet will address the following:

# SAFETY & HEALTH AWARENESS SHEET

## PROTECTION FROM WILDFIRE SMOKE

- Identification of harmful exposures
- Communication and training
- Control of harmful exposures
- Personal protective equipment

### **CALIFORNIA'S REGULATION INFORMATION**

California's Protection from Wildfire Smoke Regulation ([https://www.dir.ca.gov/title8/5141\\_1.html](https://www.dir.ca.gov/title8/5141_1.html)) applies to workplaces where the AQI is 151 or greater and where workers may be exposed to wildfire smoke for more than one hour.

When wildfire smoke could affect a worksite, employers must monitor the AQI. An employer may use a direct-reading particulate monitor, following the guidelines in CCR 5141.1 Appendix A to determine PM2.5 levels, or employers can monitor the AQI using any of the following websites:

- U.S. EPA AirNow (<https://airnow.gov/>)
- U.S. Forest Service (<https://wildlandfiresmoke.net>)
- California Air Resources Board (<https://www.arb.ca.gov/aqmis2/ARBAqmap.php>)
- South Coast AQMD (<http://www.aqmd.gov/home/air-quality/current-air-quality-data>)
- PurpleAir (<https://www.purpleair.com/map?opt=1/mAQI/a10/cC0#1/15.1/-30>)

Both Cal/OSHA and the US EPA recommend using [www.AirNow.gov](http://www.AirNow.gov) or the AirNow app for mobile phones to determine the AQI for PM2.5 in your area. On the site or mobile app, enter the zip code for the location where you will be working, and the site or app will list the current and forecasted AQI for PM2.5.

### **ACTIONS**

Where the AQI is equal to or greater than 151 due to wildfire smoke, or if it is reasonably anticipated that employees will be exposed to wildfire smoke, the employer must take the following steps to protect employees:

- **Communication and Training** – Inform employees of the current or forecasted AQI and the protective measures available to them. Train all employees on the information contained in Section 5141.1 Appendix B (attached to this Awareness Sheet).
- **Engineering Controls** – Provide enclosed buildings, structures, or vehicles with filtered air whenever feasible; if insufficient, reduce employee exposures as much as feasible.
- **Administrative Controls** – Whenever engineering controls are insufficient, employers should implement administrative controls, if practicable, such as relocating work to a location with an acceptable AQI level; changing work schedules; reducing work intensity; or providing additional rest periods.

# SAFETY & HEALTH AWARENESS SHEET

## PROTECTION FROM WILDFIRE SMOKE

- **Respiratory Protective Equipment ("PPE")** – Where the AQI is between 151 and 500, employers shall provide N95 filtering facepiece respirators, or equivalent, to all employees for voluntary use and encourage employees to use respirators.
  - If the AQI is greater than 500, contact your employer for the required safety procedures, as respirator use is required in accordance with CCR Title 8 Section 5144. This regulation requires a written respiratory protection program, as well as fit testing and medical evaluations of each employee.

### **POTENTIAL HEALTH EFFECTS**

Breathing fine particles in the air (PM2.5), as stated before, can reduce lung function, worsen asthma and other existing heart and lung conditions, and cause coughing, wheezing and difficulty breathing. If you experience any of these symptoms, seek medical attention.

### **INFORMATION AND RESOURCES**

Guidance for employers and employees on working safely in conditions with smoke caused by wildfires is available on the following websites:

- Cal/OSHA's web page (<https://www.dir.ca.gov/dosh/dosh1.html>)
- Protecting outdoor workers (<https://www.dir.ca.gov/dosh/wildfire/Worker-Protection-from-Wildfire-Smoke.html>)
- Protecting indoor workers from outdoor air pollution (<https://www.dir.ca.gov/dosh/wildfire/Indoor-Protection-from-Wildfire-Smoke.html>)
- Information on the proper use of N95 filtering facepiece respirators ([https://www.dir.ca.gov/dosh/dosh\\_publications/N95-mask-questions.pdf#\\_blank](https://www.dir.ca.gov/dosh/dosh_publications/N95-mask-questions.pdf#_blank))

### **FURTHER ASSISTANCE**

If you have further questions, please contact your supervisor or the Safety Department.

**Appendix B to Section 5141.1. Protection from Wildfire Smoke Information to Be Provided to Employees (Mandatory). Employers are required to fill in (e) and (f)(5) below.**

---

(a) The health effects of wildfire smoke.

Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is “particulate matter,” the tiny particles suspended in the air.

Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as reduced lung function, bronchitis, worsening of asthma, heart failure, and early death.

People over 65 and people who already have heart and lung problems are the most likely to suffer from serious health effects.

The smallest -and usually the most harmful -particulate matter is called PM2.5 because it has a diameter of 2.5 micrometers or smaller.

(b) The right to obtain medical treatment without fear of reprisal.

Employers shall allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment, and may not punish affected employees for seeking such treatment. Employers shall also have effective provisions made in advance for prompt medical treatment of employees in the event of serious injury or illness caused by wildfire smoke exposure.

(c) How employees can obtain the current Air Quality Index (AQI) for PM2.5.

Various government agencies monitor the air at locations throughout California and report the current AQI for those places. The AQI is a measurement of how polluted the air is. An AQI over 100 is unhealthy for sensitive people and an AQI over 150 is unhealthy for everyone. Although there are AQIs for several pollutants, Title 8, section 5141.1 about wildfire smoke only uses the AQI for PM2.5.

The easiest way to find the current and forecasted AQI for PM2.5 is to go to [www.AirNow.gov](http://www.AirNow.gov) and enter the zip code of the location where you will be working. The current AQI is also available from the U.S. Forest Service at <https://tools.airfire.org/> or a local air district, which can be located at [www.arb.ca.gov/capcoa/dismap.htm](http://www.arb.ca.gov/capcoa/dismap.htm). Employees who do not have access to the internet can contact their employer for the current AQI. The EPA website [www.enviroflash.info](http://www.enviroflash.info) can transmit daily and forecasted AQIs by text or email for particular cities or zip codes.

(d) The requirements in Title 8, section 5141.1 about wildfire smoke.

If employees may be exposed to wildfire smoke, then the employer is required to find out the current AQI applicable to the worksite. If the current AQI for PM2.5 is 151 or more, the employer is required to:

- (1) Check the current AQI before and periodically during each shift.
- (2) Provide training to employees.
- (3) Lower employee exposures.
- (4) Provide respirators and encourage their use.

(e) The employer's two-way communication system.

Employers shall alert employees when the air quality is harmful and what protective measures are available to employees.

Employers shall encourage employees to inform their employers if they notice the air quality is getting worse, or if they are suffering from any symptoms due to the air quality, without fear of reprisal.

The employer's communication system is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(f) The employer's methods to protect employees from wildfire smoke.

Employers shall take action to protect employees from PM2.5 when the current AQI for PM2.5 is 151 or greater. Examples of protective methods include:

- (1) Locating work in enclosed structures or vehicles where the air is filtered.
- (2) Changing procedures such as moving workers to a place with a lower current AQI for PM2.5.
- (3) Reducing work time in areas with unfiltered air.
- (4) Increasing rest time and frequency, and providing a rest area with filtered air.
- (5) Reducing the physical intensity of the work to help lower the breathing and heart rates.

The employer's control system at this worksite is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(g) The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.

Respirators can be an effective way to protect employee health by reducing exposure to wildfire smoke, when they are properly selected and worn. Respirator use can be beneficial even when the AQI for PM2.5 is less than 151, to provide additional protection.

When the current AQI for PM2.5 is 151 or greater, employers shall provide their workers with proper respirators for voluntary use. If the current AQI is greater than 500, respirator use is required.

A respirator should be used properly and kept clean.

The following precautions shall be taken:

(1) Employers shall select respirators certified for protection against the specific air contaminants at the workplace. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will list what the respirator is designed for (particulates, for example).

Surgical masks or items worn over the nose and mouth such as scarves, T-shirts, and bandannas will not provide protection against wildfire smoke. An N95 filtering facepiece respirator, shown in the image below, is the minimum level of protection for wildfire smoke.

(2) Read and follow the manufacturer's instructions on the respirator's use, maintenance, cleaning and care, along with any warnings regarding the respirator's limitations. The manufacturer's instructions for medical evaluations, fit testing, and shaving should also be followed, although doing so is not required by Title 8, section 5141.1 for voluntary use of filtering facepiece respirators.

(3) Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particles will not protect employees against gases or vapors, and it will not supply oxygen.

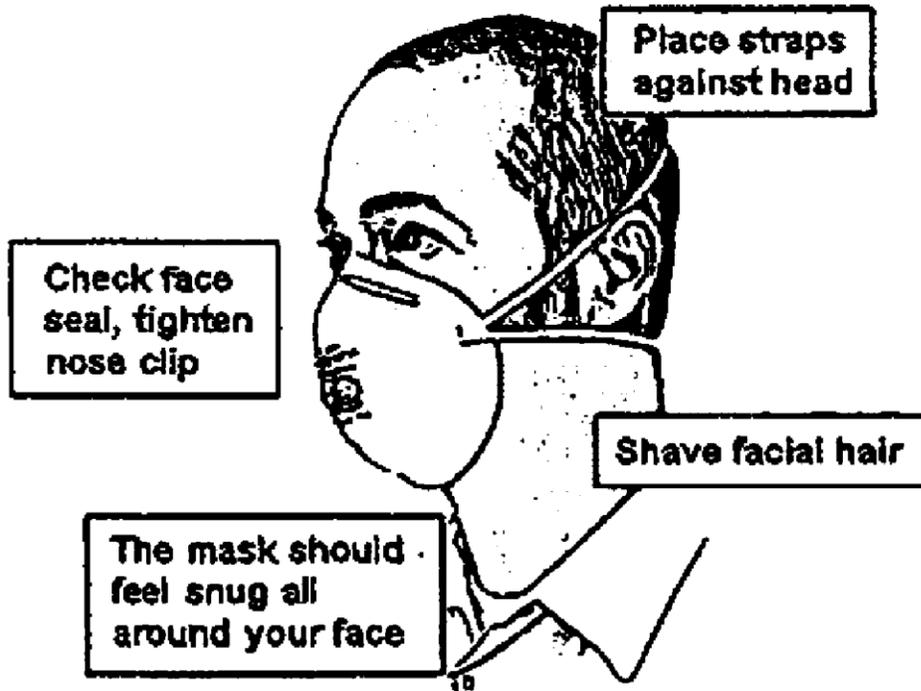
(4) Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.

(5) Employees who have a heart or lung problem should ask their doctor before using a respirator.

(h) How to properly put on, use, and maintain the respirators provided by the employer. To get the most protection from a respirator, there must be a tight seal around the face. A respirator will provide much less protection if facial hair interferes with the seal. Loose-fitting powered air purifying respirators may be worn by people with facial hair since they do not have seals that are affected by facial hair.

The proper way to put on a respirator depends on the type and model of the respirator. For those who use an N95 or other filtering facepiece respirator mask that is made of filter material:

- (1) Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
- (2) Pinch the metal part (if there is one) of the respirator over the top of the nose so it fits securely.



***Drawing Showing Proper Fitting of a Filtering Facepiece Respirator  
(shaving is not required for voluntary respirator use)***

For a respirator that relies on a tight seal to the face, check how well it seals to the face by following the manufacturer's instructions for user seal checks. Adjust the respirator if air leaks between the seal and the face. The more air leaks under the seal, the less protection the user receives.

Respirator filters should be replaced if they get damaged, deformed, dirty, or difficult to breathe through. Filtering facepiece respirators are disposable respirators that cannot be cleaned or disinfected. A best practice is to replace filtering facepiece respirators at the beginning of each shift.

If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and get medical help.

Note: Authority cited: Section 142.3, Labor Code. Reference: Sections 142.3 and 144.6, Labor Code.