

# UC Ag Experts Talk about Respirators

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<http://ucanr.edu/TrainMe>



**University of California**  
Agriculture and Natural Resources



# Respirators

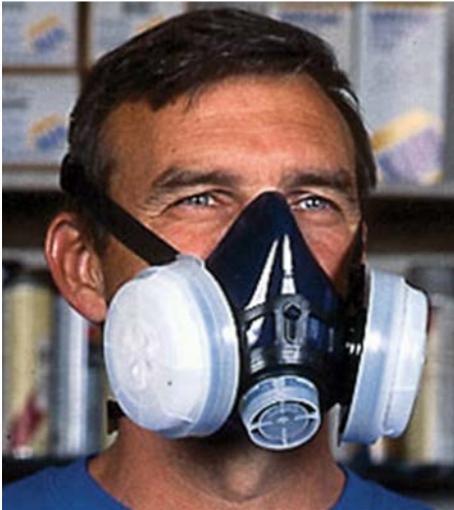
- What is a respirator
- How to get a proper seal
- When to wear a respirator
- Respirator requirements
- How to choose a respirator
- When to dispose of filters and cartridges



# Respirators

- Not a comprehensive respiratory protection training
- Does NOT satisfy your annual training requirement
- Does NOT teach you how to perform a fit test

# What is a respirator



**YES!**



**YES!**



**YES!**



# National Institute for Occupational Safety and Health (NIOSH)

CDC - Respirators - NIOSH Work

https://www.cdc.gov/niosh/topics/respirators/

CDC Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People™

Search NIOSH SEARCH

CDC A-Z INDEX

The National Institute for Occupational Safety and Health (NIOSH)

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NIOSH > Workplace Safety & Health Topics

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Promoting productive workplaces through safety and health research

**NIOSH**

Language: English (US)

## RESPIRATORS

**Overview**

Respirators protect the user in two basic ways. The first is by the removal of contaminants from the air. Respirators of this type include particulate respirators, which filter out airborne particles; and "gas masks" which filter out chemicals and gases. Other respirators protect by supplying clean respirable air from another source. Respirators that fall into this category include airline respirators, which use compressed air from a remote source; and self-contained breathing apparatus (SCBA), which include their own air supply.

Respirators should only be used when engineering control systems are not feasible. Engineering control systems, such as adequate ventilation or scrubbing of contaminants, are the preferred control methods for reducing worker exposures.

NIOSH issues recommendations for respirator use. Industrial type approvals are in accordance to the NIOSH federal respiratory regulations 42 CFR Part 84. Development of respirator standards are in concert with various partners from government and industry.

**Spotlight**

[Respirator Trusted-Source Information Page](#)

This respirator information may be regarded as a trusted source to verify which filtering facepiece respirators are approved by NIOSH, how to get them and how to use them.

**Respirator Concern?**

Contact NPPTL [PPECconcerns@cdc.gov](mailto:PPECconcerns@cdc.gov)

- > **NIOSH Publications**
- > **Respirator Resources**
- > **NIOSH Videos**
- > **OSHA Videos**

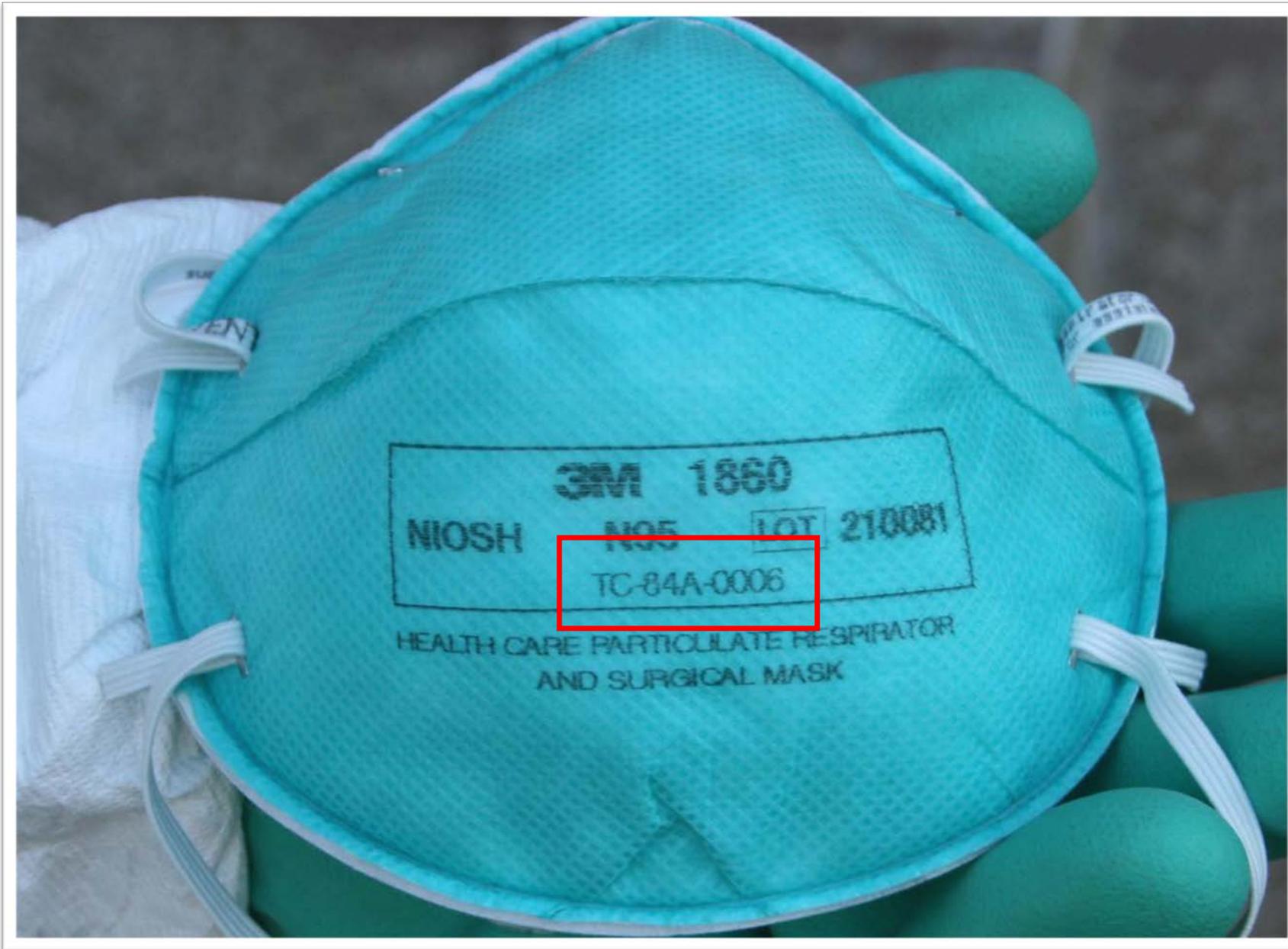
# This IS a Respirator!



- **NIOSH** → certifying agency
- **N, R, P** → resistance to oil degradation
- **95, 99, 100** → filter efficiency

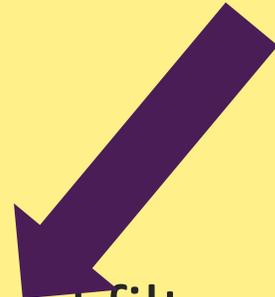


# National Institute for Occupational Safety and Health (NIOSH)



Two types of

## Air-purifying respirators



- Use physical and chemical filters
- Powered and non-powered



- Simplest type of air-purifying respirator
- Listed on pesticide labels as TC-84A





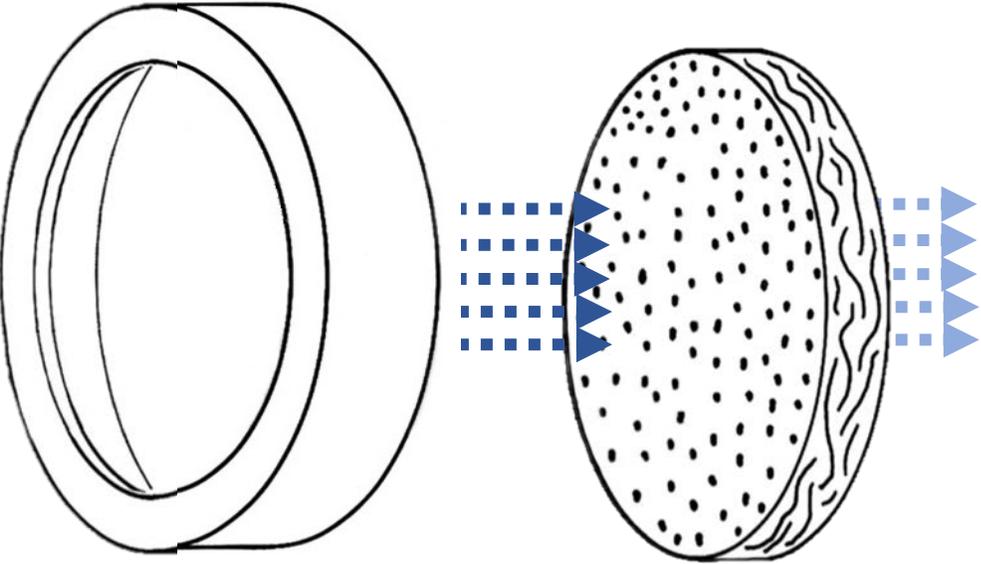
# Cartridge respirators

- Remove low levels of vapors, dusts, mists
- Listed as TC-23C or TC-84A
- Cartridges are color coded
- Particulate filter classification
  - N = not oil resistant
  - R = oil resistant
  - P= oil proof

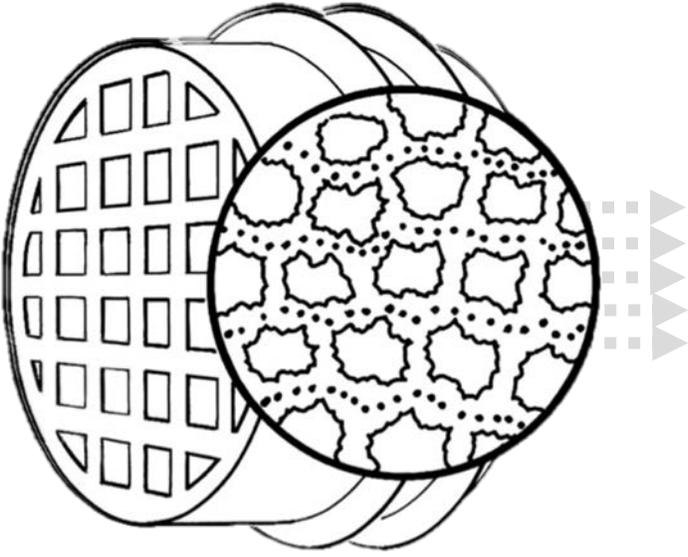


# Cartridge respirators

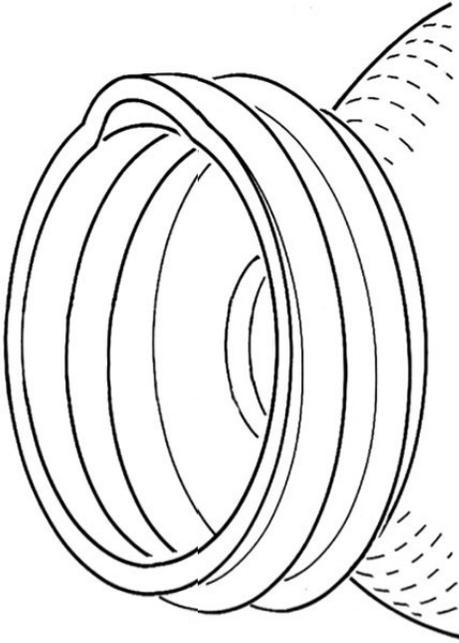
Particulate prefilter:  
Traps airborne  
particles



Chemical cartridge:  
Absorbs gasses



Facepiece





# Cartridge Color Code

## Organic Vapors – **Black**



# Half-face and full-face respirators

Half-face mask



Full-face mask





# NIOSH Designations



**TC – 21C:** Powered particulate respirators (PAPR with HE filters)



**TC – 23C:** Chemical cartridge respirators (including PAPR)



**TC – 84A:** Non-powered particulate respirators, or chemical cartridge respirators with a particulate filter



# Can you get a proper seal?



**NO**

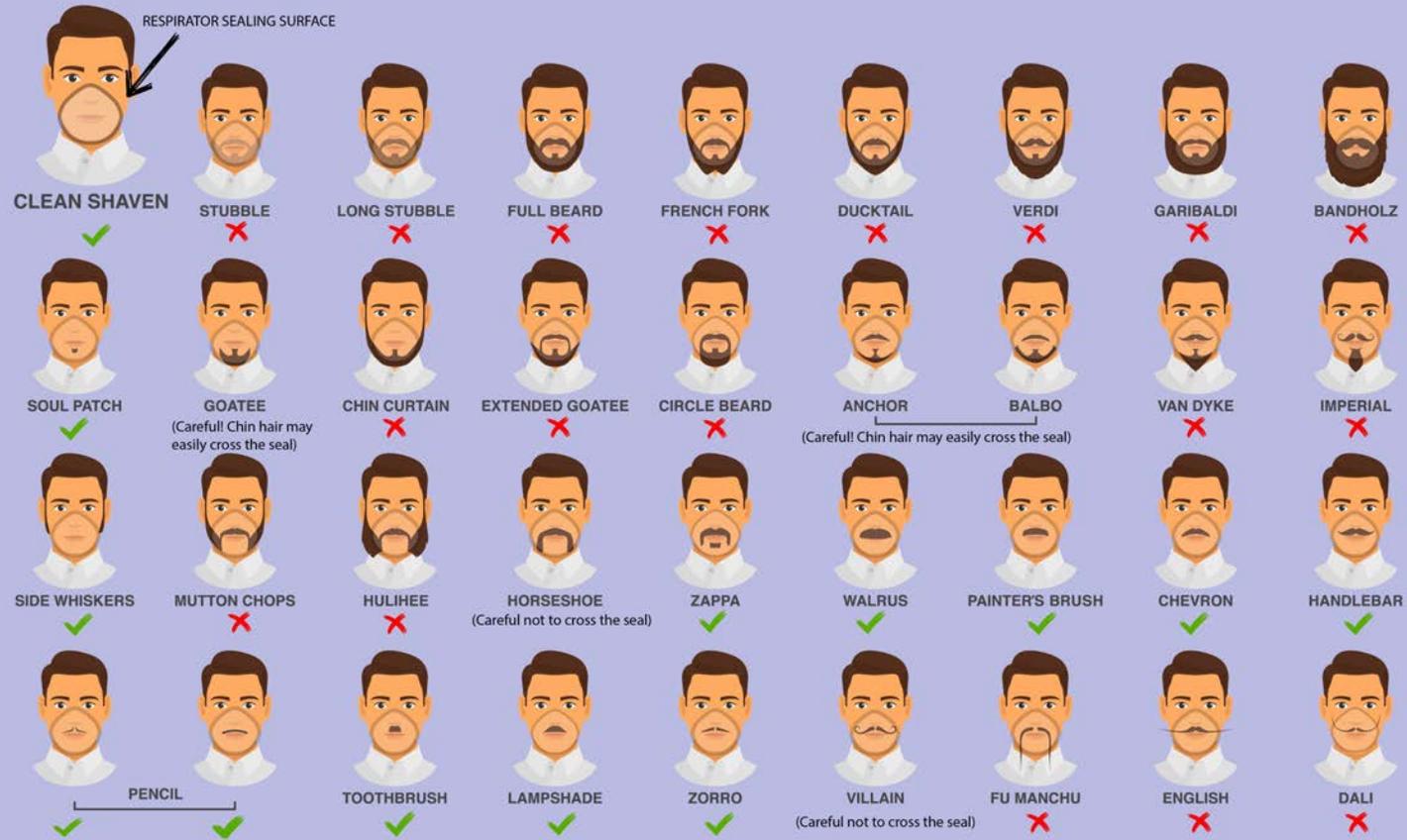


**NO**



**YES**

# Facial Hairstyles and Filtering Facepiece Respirators



\*If your respirator has an exhalation valve, some of these styles may interfere with the valve working properly if the facial hair comes in contact with it.  
 †This graphic may not include all types of facial hairstyles. For any style, hair should not cross under the respirator sealing surface.

Source: OSHA Respiratory Protection Standard  
[https://www.osha.gov/wps/portal/nslaweb/bulletin/show\\_document?p\\_table=standards&p\\_id=12716](https://www.osha.gov/wps/portal/nslaweb/bulletin/show_document?p_table=standards&p_id=12716)  
 Further Reading: NIOSH Respirator Trusted-Source Webpage  
[https://www.cdc.gov/niosh/nppd/topics/respirators/disp\\_part/resource3fittest.html](https://www.cdc.gov/niosh/nppd/topics/respirators/disp_part/resource3fittest.html)



Centers for Disease Control and Prevention  
 National Institute for Occupational Safety and Health

- Force filtered air through a hose
- Good for long application jobs





# Cartridge Color Code

Particulate Filter Cartridge (HEPA) – **Magenta** (also called P100)





# When do you have to wear a respirator?

- When required by label
- When required by permit conditions
- When required by regulations
- When it is the employer's policy



# When do you have to wear a respirator?

- **When required by label**
- When required by permit conditions
- When required by regulations
- **When it is the employer's policy**



# Respirator requirements

- The label is the law
- But that's just the half of it



- Annual fit test
- Medical evaluation before a fit test
- Must fit properly and seal tightly





## User seal check

- “Fit check”
- Every time you don your respirator
- Positive and negative pressure





## Respirator Training Must Include:

- Why the respirator is necessary
- Limitations and capabilities of the respirator
- How to use it effectively in an emergency
- How to inspect and check the seals
- Maintenance and storage procedures
- Medical signs and symptoms that may limit or prevent the effective use of respirators
- General requirements of 6739

# Gramoxone<sup>®</sup> SL 2.0



dust/mist NIOSH-  
approved respirator  
with any N, R, P, or  
HE filter

**KEEP OUT OF REACH  
OF CHILDREN.**



**DANGER / POISON  
PELIGRO / VENENO**

*Active Ingredient:*

Paraquat dichloride (1,1'-dimethyl-4,4'-  
bipyridinium dichloride) . . . . . 30.1%

*Other Ingredients:* . . . . . 69.9%

*Total:* . . . . . 100.0%

Gramoxone SL 2.0 contains 2.0 pounds paraquat  
cation per gallon as 2.762 pounds salt per gallon.

Gramoxone SL 2.0 contains alerting agent (odor),  
emetic, and dye.

# CHATEAU®

C I D E S W



**filtering facepiece  
respirator (N95, R95  
or P95)**

Active Ingredient	By Wt
Flumioxazin*	51%
Other Ingredients .....	49%
Total	100%

\*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Chateau® Herbicide SW is a water dispersible granule containing 51% active ingredient.

# WEEDTRINE® D

HERBICIDE



**Dust/mist filtering  
respirator with NIOSH  
approval number prefix  
TC-21 C**

**ACTIVE INGREDIENT:**

Diquat dibromide  
[6,7-dihydrodipyrido (1,2-a:2',1'-C)  
pyrazinediium dibromide].....8.53%  
OTHER INGREDIENTS.....91.47%  
TOTAL.....100.00%

Contains 0.4 lb. diquat cation per gallon as  
0.746 lb. salt per gallon

### Personal Protective Equipment (PPE)

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear: long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

Follow manufacturer's instructions for cleaning/maintaining PPE (Personal Protective Equipment). If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.



*Specially formulated  
for Roundup Ready® crops*

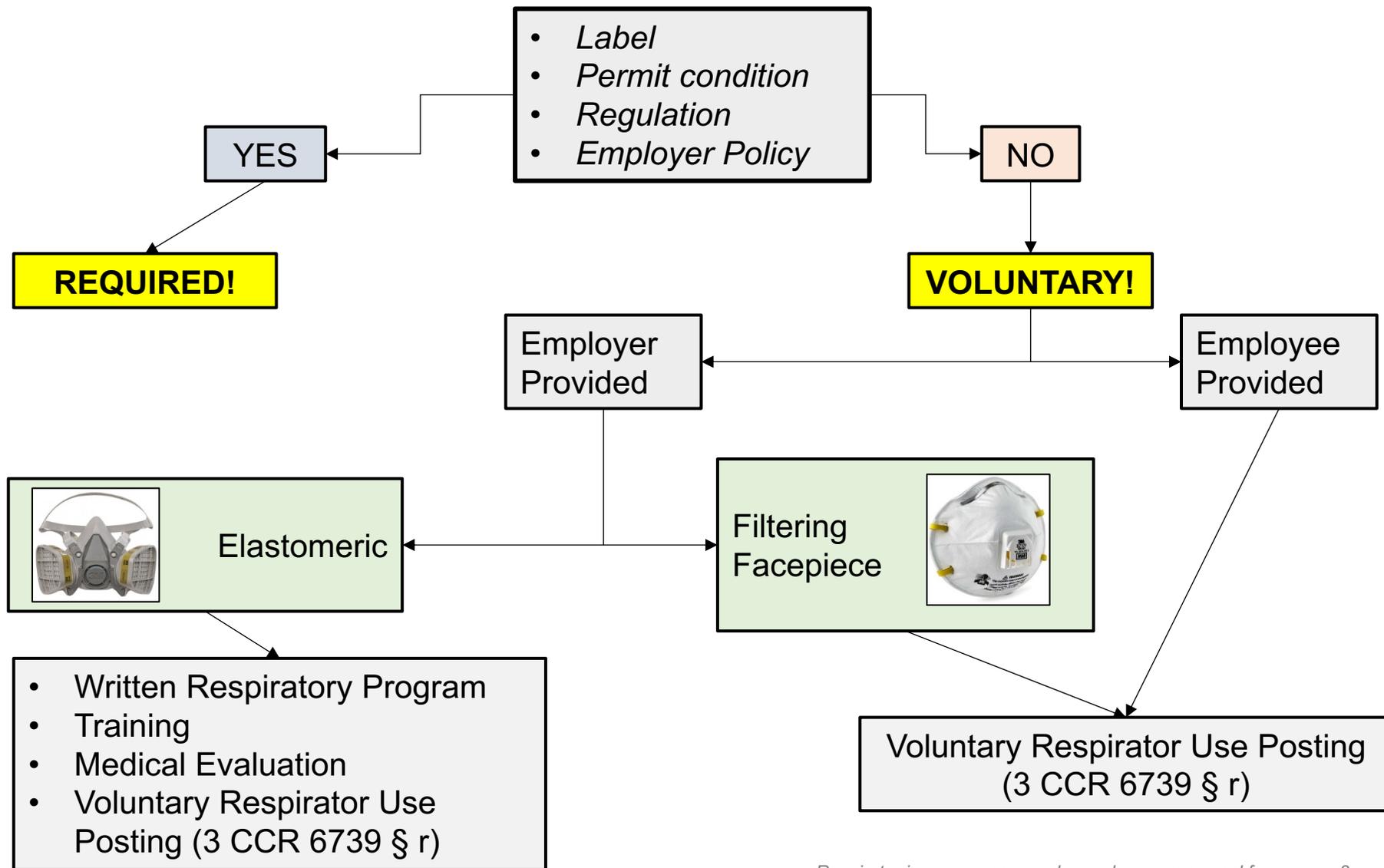
GROUP	9	HERBICIDE
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### ACTIVE INGREDIENT:

*Glyphosate, N-(phosphonomethyl)glycine, in the form of its potassium salt.....	48.7%
OTHER INGREDIENTS:.....	51.3%
	100.0%

\*Contains 660 grams of the active ingredient glyphosate, in the form of its potassium salt, per liter or 5.5 pounds per U.S. gallon, which is equivalent to 540 grams of the acid, glyphosate, per liter or 4.5 pounds per U.S. gallon (39.8% by weight).

This product is protected by U.S. Patent No's. 5,668,085, RE 37,866 and 6,365,551. Other Patents Pending. No license granted under any non-U.S. patent(s).





## Respirators – cartridge change out schedule

1. Odor or irritation, or
2. End of Service Life Indicator (ESLI), or
3. Label instructions, or
4. Manufacturer instructions, or
- 5. The end of the day's work period!**



## Respirators – cartridge change out schedule

1. Odor or irritation, or
- ~~2. End of Service Life Indicator (ESLI), or~~
- ~~3. Label instructions, or~~
- ~~4. Manufacturer instructions, or~~
- 5. The end of the day's work period!**



# Respirators – filter change out schedule

<b>Respirator Restrictions</b>	
N Type	NO OIL IN MIX: Dispose End of Day
R Type	OIL IN MIX: Dispose After 8 Hours Per Day
P Type	OIL IN MIX: Dispose End of Day
Organic Vapor	Dispose End of Day

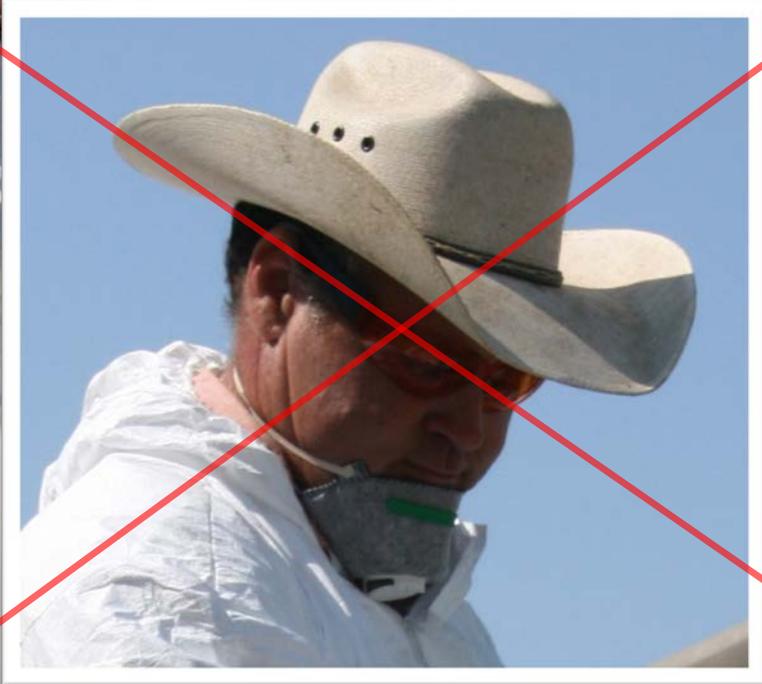
Always follow label directions and permit conditions.

For more information contact  
your local Agricultural Commissioner or  
 **California Department of Pesticide Regulation**  
Worker Health and Safety (916) 445-4222  
<http://www.cdpr.ca.gov>

May 2014

# Respirator violations

Wear respirators correctly to be effective





# Resources for You

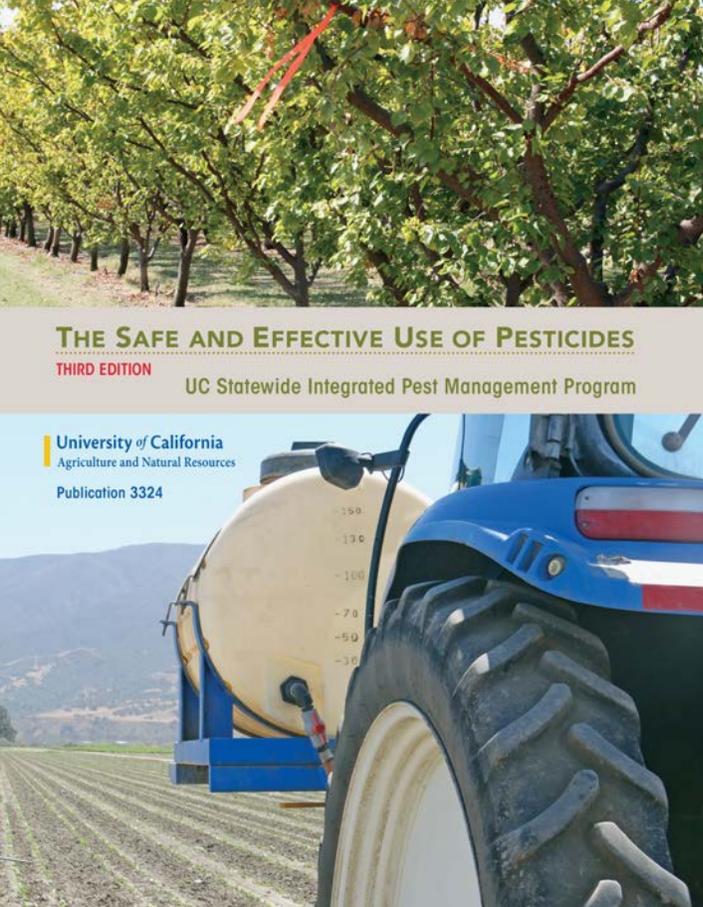


 Proper Selection, Use, and Removal of Personal Protective Equipment  
Module 4: Selecting and Wearing Personal Protective Equipment

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Pesticide Safety Education Program, UC IPM

**University of California**  
Agriculture and Natural Resources

[http:// ipm.ucanr.edu/EVENTS](http://ipm.ucanr.edu/EVENTS)



**THE SAFE AND EFFECTIVE USE OF PESTICIDES**  
THIRD EDITION  
UC Statewide Integrated Pest Management Program

University of California  
Agriculture and Natural Resources  
Publication 3324

<http://anrcatalog.ucanr.edu/>



# Questions?

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