

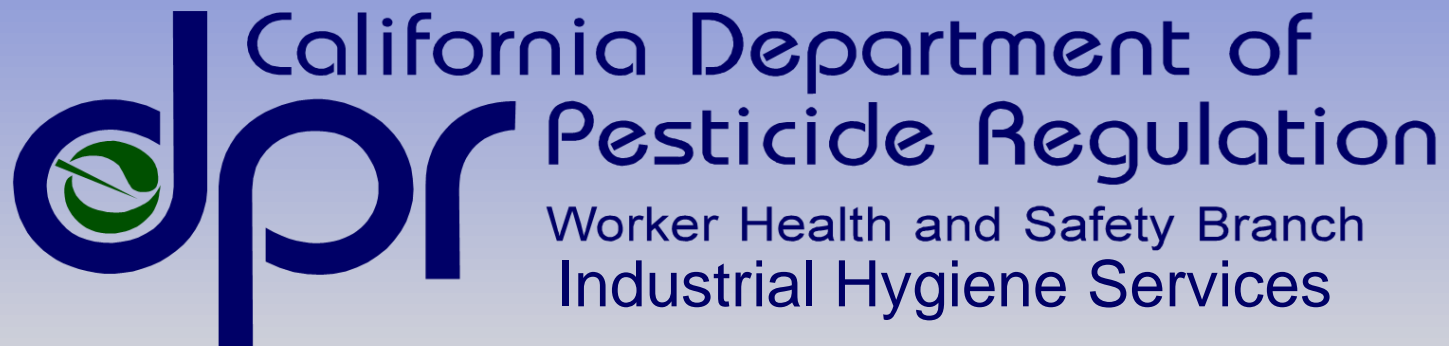
dpur

Closed System and PPE Regulations

Emilie M. Schneider, Environmental Scientist

Original Presentations by:

Emma R. Colson, Certified Industrial Hygienist



Closed Systems

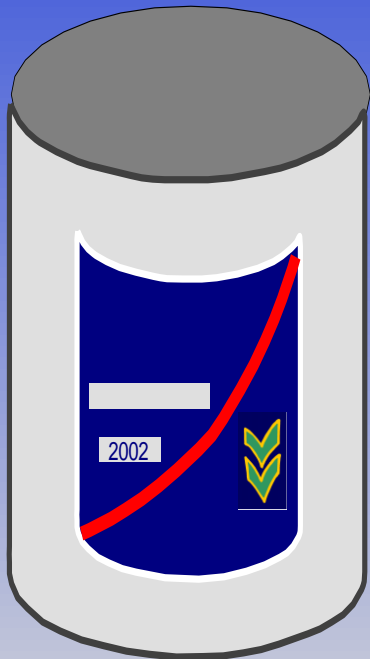
Background



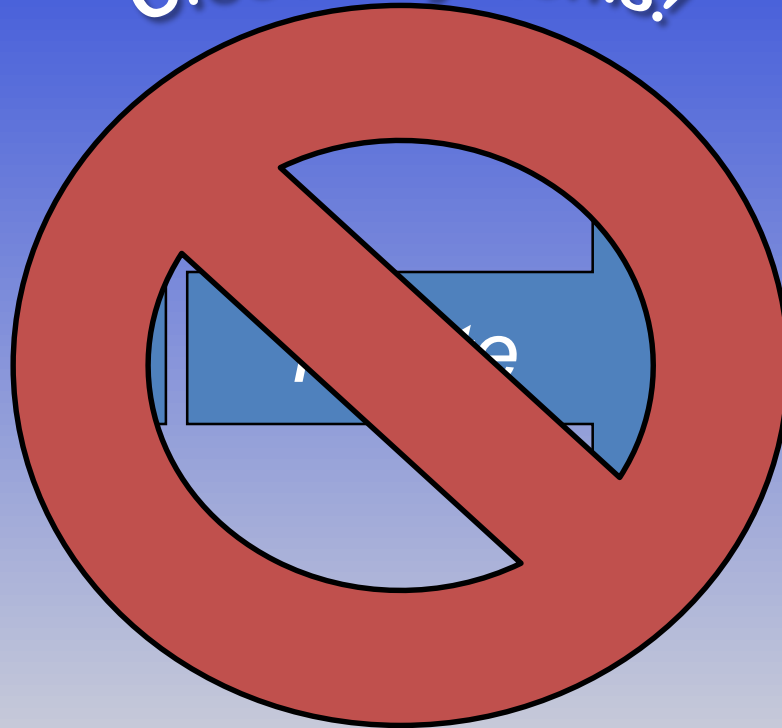
- Technological changes on closed systems
- Many OPs and CHCs no longer registered or manufactured in United States
- Less systemic, but corrosive to eyes and skin

Chemical Hazards: *Components of Exposure*

Source



Closed Systems!



Receiver



Components of Exposure Routes (Pathways)

Direct Exposure

- Splash ◦ Spray ◦ Spill ◦

Indirect Exposure

- Residue ◦ Drift ◦ Off-gassing

Components of Exposure Routes (Pathways)

SPLASH



Components of Exposure Routes (Pathways)

SPRAY



Components of Exposure Routes (Pathways)



Components of Exposure Sources

- Undiluted Pesticide
- Application Dilution
- Foliar Residue
- Off Target Residue
- Drift
- Degradation Products



Engineering Control of Exposure



Receiver



Source

Engineering Control of Exposure

- Closed systems = *Engineering control*
- Isolate source and limit exposure route
- Reduce risk to personnel
- ***Less PPE!***

ALL the PPE

COMPLETE
PERSONAL
PROTECTIVE
EQUIPMENT



OVERALL



WATERPROOF
APRON



WATERPROOF HAT
or HOOD



NITRILE GLOVES



WATERPROOF
THICK-SOLED BOOTS
OR SHOES



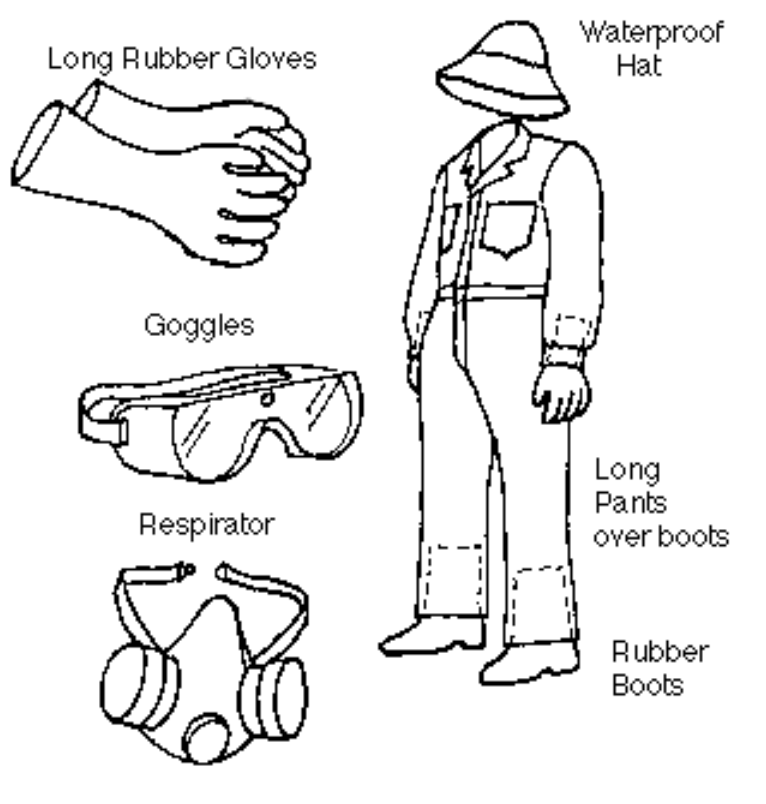
GOGGLES OR
HOOD WITH
PROTECTION



RESPIRATORY
MASKS



Some PPE



Hazard Recognition

Label Information: Signal Words

Restricted Use Designation **1**

RESTRICTED USE PESTICIDE

For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

Trade Name **2**

VAPORIZE WP

Formulation **3**

Mode of Action **4**

GROUP **10** INSECTICIDE

Active ingredients **5**

ACTIVE INGREDIENT: By Wt.

Vaporin .. 12.0%
2-Vaporizin-N-dihydrogen-monoxide .. 12.0%

Other ingredients **6**

OTHER INGREDIENTS: 88.0%

Net Contents **7**

NET CONTENTS 5 lb

EPA Reg. No. **8**

EPA Reg. No. 123-4567 EPA Est. No. 123

Manufacturer **9**

AGRICULTURAL CHEMICAL COMPANY
1234 Industrial Drive
Logan, UT 84321

Signal Word **10**

CAUTION

Keep out of Reach of Children **11**

KEEP OUT OF REACH OF CHILDREN

First Aid **12**

FIRST AID	
If swallowed:	Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by the poison control center or or doctor.
If in eyes:	Hold eye open and rinse with water for 15-20 minutes.
If inhaled:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Avoid contact with skin and eyes.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks
- Chemical resistant gloves

USER SAFETY RECOMMENDATIONS

Wash hands before eating, drinking, or chewing gum.
Wash PPE separately from other laundry.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Do not apply directly to water. Do not apply this product to blooming crops or weeds while bees are actively foraging.

PHYSICAL OR CHEMICAL HAZARDS

Combustible - Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

STORAGE AND DISPOSAL

Pesticide Storage

Do not store in or around home. Keep out of reach of children. Store in a cool, dry place.

Pesticide Disposal

Do not reuse or refill this container. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

13 Precautionary Statements

14 Directions for Use

15 Storage and Disposal

Hazard Recognition

Label Information: Signal Words

Category I: *DANGER*



- Corrosive to eyes or skin
- Usually restricted use

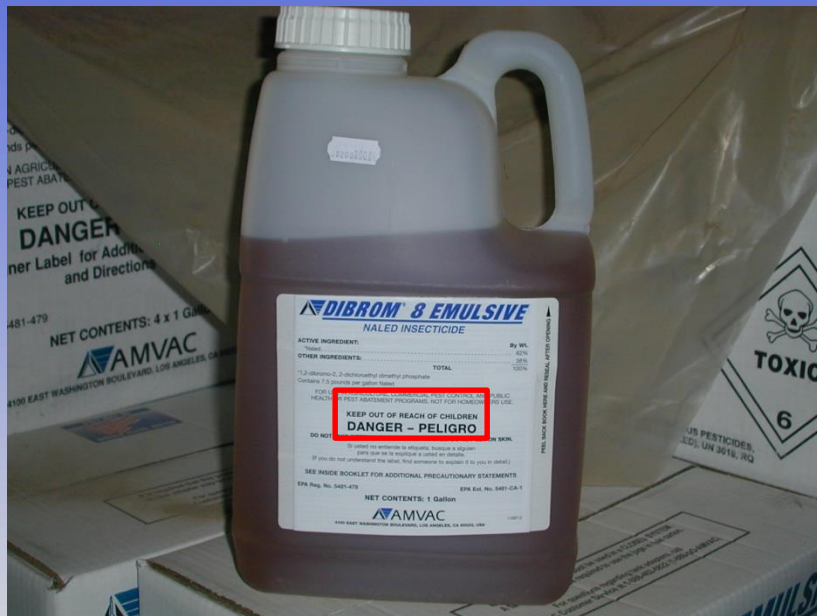
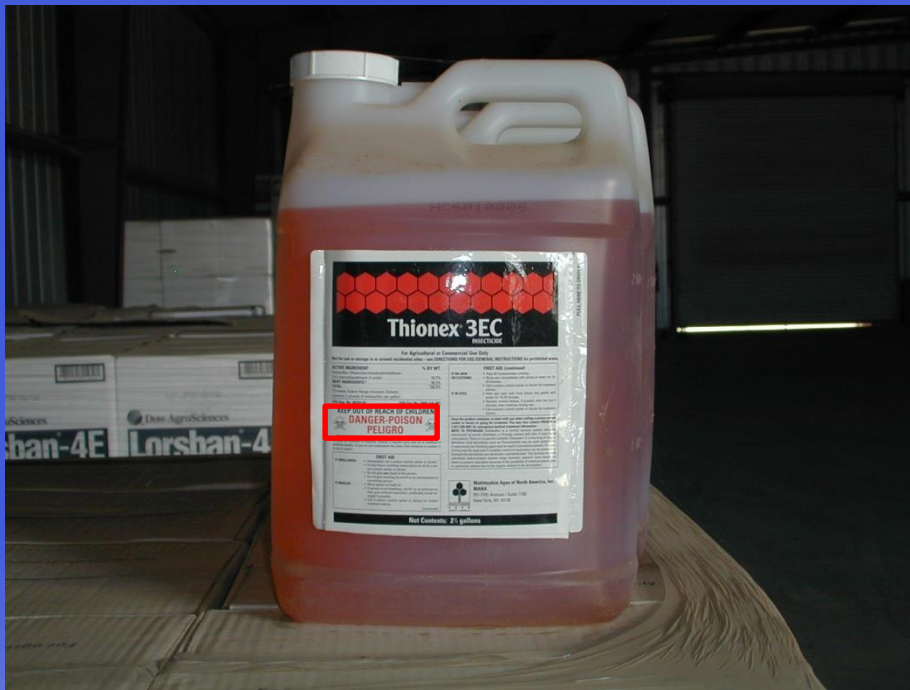
Hazard Recognition

Label Information: Signal Words

Category I: **DANGER/POISON**



- Very toxic material
- Possibly corrosive to eyes or skin
- Usually restricted use

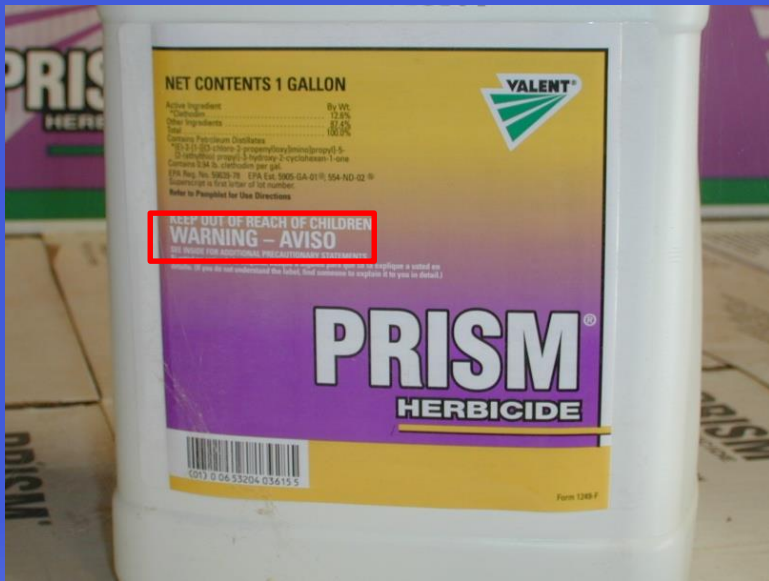


Hazard Recognition

Label Information: Signal Words

Category II: *Warning*

- Moderately toxic material
- Possibly severely irritating to eyes or skin



Hazard Recognition

Label Information: Signal Words

Category III: *Caution*

- "Slightly" toxic material
- Somewhat irritating to eyes
- Slight irritation to skin



Hazard Recognition

Label Information: Signal Words

Then:

- Signal words were used to determine if a closed system was required
- Any liquid or liquefiable Category I material had to be mix/loaded through a closed system

Hazard Recognition

Label Information: Precautionary Statement

January 2016						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Now (as of January 1, 2016):

- Under Section 6746, use the **Precautionary Statements** section of the label.

Restricted Use Designation **1**

RESTRICTED USE PESTICIDE

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First Aid **12**

FIRST AID	
If swallowed:	Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by the poison control center or doctor.
If in eyes:	Hold eye open and rinse with water for 15-20 minutes.
If inhaled:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Avoid contact with skin and eyes.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks
- Chemical resistant gloves

USER SAFETY RECOMMENDATIONS

Wash hands before eating, drinking, or chewing gum.
Wash PPE separately from other laundry.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Do not apply directly to water. Do not apply this product to blooming crops or weeds while bees are actively foraging.

PHYSICAL OR CHEMICAL HAZARDS

Combustible - Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

STORAGE AND DISPOSAL

Pesticide Storage

Do not store in or around home. Keep out of reach of children. Store in a cool, dry place.

Pesticide Disposal

Do not reuse or refill this container. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

13 Precautionary Statements

14 Directions for Use

15 Storage and Disposal

Closed Mixing System Requirements

Tier Identifiers

Precautionary Statement

```
graph TD; A["Precautionary Statement"] --> B["Tier I"]; A --> C["Tier II"];
```

Tier I

Tier II

Closed Mixing System Requirements

Section 6746 (b)(c)

How do you determine its ***“Tier”*** designation?!



It's all about words!

Precautionary Statement: Tier Designation

Tier I

“Fatal if absorbed through skin” or comparable language

Tier II

“May be fatal if absorbed through skin” or “*Corrosive, causes skin damage**” or comparable language

**NOTE: if corrosive to skin, very likely corrosive to eyes!*

Dermal Toxicity

- **Corrosive**: Substance that has power to cause *irreversible damage* or destroy another substance by *contact*



Tier Characteristics

Tier I

- Classically poisonous materials
 - Skin or eye damaging properties.
- Systemic poisoning can occur from skin contact/inhalation

Tier II

- Corrosive to skin and/or eyes
- *Possible* irreversible damage
- May also have systemic toxicity

Tier I or Tier II?

Labeling

Tier I

RESTRICTED USE PESTICIDE
DUE TO ACUTE ORAL, DERMAL, AND INHALATION TOXICITY
For retail sale to and use only by Certified Applicators or persons under the direct supervision of a Certified Applicator, and only for those uses covered by the Certified Applicator's certification.



PRECAUTIONARY STATEMENTS

Hazards To Humans And Domestic Animals

DANGER

Fatal if swallowed, inhaled or absorbed through skin. Rapidly absorbed through skin. Corrosive. Causes irreversible eye damage. Do not get into eyes, on skin, or on clothing. Do not breathe spray mist. Do not contaminate feed or food.

SYMPTOMS OF POISONING: Nausea, vomiting, abdominal cramps, diarrhea, excessive salivation, headache, dizziness, weakness, blurring or dimness of vision, excessive tearing, loss of muscular coordination, slurring of speech, twitching of muscles (especially of tongue and eyelids), mental confusion, disorientation, drowsiness, difficulty in breathing (chest tightness), runny nose.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY.

Transportation: CHEMTREC 1-800-424-9300
Other: AMVAC 1-323-264-3910

NOTE TO PHYSICIAN: This product is a cholinesterase inhibitor. Severe symptoms and signs include diarrhea, pinpoint and non-reactive pupils, respiratory difficulty, pulmonary edema, cyanosis, loss of sphincter control, convulsions, and coma. Support respiration as needed. Measures should include removal of secretions, maintenance of a patent airway, and if necessary, artificial ventilation. If cyanosis is absent, give ATROPINE 2-4 mg intravenously (0.05 mg/kg for children). Repeat atropine at 5-10 minute intervals until atropinization occurs (dry, flushed skin, tachycardia, pupillary dilatation), and maintain for 48 hours. If cyanotic, give initial atropine intramuscularly and start measures to improve ventilation.

EPA Reg. No. 5481-9041

EPA Est. No. 264-MO-003

AMVAC
4100 E. Washington Blvd.
Los Angeles, CA 90023, USA
1-323-264-3910

RECOMMENDED LEVEL

Mixers, loaders, applicators, and other handlers using engineering controls must wear:

- long-sleeve shirt and long pants, and
- shoes plus socks.

In addition, mixers and loaders must wear chemical-resistant gloves and a chemical-resistant apron.
See engineering controls for additional requirements.

Handlers engaged in those activities for which use of an engineering control is not possible, such as cleaning up a spill or leak and cleaning or repairing contaminated equipment, must wear:

- coveralls over long-sleeve shirt and long pants,
- chemical-resistant gloves,
- protective eyewear,
- chemical-resistant footwear plus socks,
- chemical-resistant apron if exposed to the concentrate,
- chemical-resistant headgear for overhead exposure, and
- a respirator with an organic-vapor removing cartridge with a prefilter (MSHA/NIOSH approved number prefix TC-25C), or a canister approved for pesticides (NIOSH/NIOSH approval number prefix TC-14C), or NIOSH-approved respirator with an organic vapor (OV) cartridge or canister with any N,R,P or HE-filter.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

12999-1

Tier I or Tier II?

Labeling

Tier II

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER!

Corrosive: Causes irreversible eye damage. May be fatal if swallowed or absorbed through the skin. **DO NOT** get in eyes, on skin, or on clothing.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- coveralls over short-sleeved shirt and short pants
- waterproof gloves
- shoes plus socks
- protective eyewear
- dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration preferably mouth-to-mouth. Get medical attention.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT apply this product through any type of irrigation system.

This label must be in the possession of the user at the time of pesticide application.

Closed Systems: Tier I & II

Capable “of enclosing the pesticide while removing the contents from its original container, preventing the pesticide from contacting handlers or bystanders.”

Engineering Control of Exposure



Closed Mixing System Requirements

Section 6746 (b)(c)

What is the big difference between
Tier I and **Tier II** systems?



Closed Systems: Differences

Tier I

- Remove pesticide from container
- Rinse container and extract rinsate while still connected to extraction system
- Classic closed system

Tier II

- Remove pesticide from container
- Container rinsing and subsequent rinsate removal may be done otherwise
- Can do hand pour of rinsate

Closed Systems

Suction Extraction

- Inserting element extracts material from original container
- Rinse container interior and itself
- Sealing is not necessarily tight



Chemeasure (no longer manufactured)

** Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems

Suction Extraction



- Spring actuated flow control
- Pump color coded
 - Chemical compatibility

Goatthroat

** Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems

Container Breach

Punctures or slices container, releasing contents into secondary container that is plumbed to mix-tank. Internal spray cleans container.



Goodwin Box*

*not built by Goodwin anymore

* *Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems

Container Breach



Homemade



PBM Sprayers

Uses entire contents of container

** Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems



Primarily works on F-style containers.

Direct Drop/Gravity Feed

- Coupler locks onto both container and mix tank
- Integrated internal sprayer cleans container
- Can do partials
- Banjo/PBM and other companies have developed replacements

* *Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems

Direct Drop/Gravity Feed



Micro Matic



Banjo/PBM hybrid



EasyFlow

** Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems

Isolated Hand Pour



Combines ability to hand-pour with isolation of the hazardous pesticide.

* *Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Systems

Isolated Hand Pour



Hypro Closed System Cleanload

** Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Mixing System Requirements

Section 6746 (a)(b)

- Use of “appropriate closed system”
- **Proper maintenance**



Closed Mixing System Requirements

Section 6746 (d)(e)

- Users must be trained in the specific use of the closed system and in the requirements of ***Title 3 CCR Section 6724: Handler Training***
- All PPE required by label, restricted material permit, or regulation ***must be at the worksite***
- PPE required to be worn will be dependent on closed system exemptions provided in ***Title 3 CCR Section 6738: Personal Protective Equipment***

Closed Mixing System Requirements

Section 6746 (e)

Protective eyewear must always be worn when using a closed system.



WEAR YOUR



**FORESIGHT
IS BETTER THAN
NO SIGHT**

MEMBER YOURS SAFETY/COM YOURS 

Closed Mixing System Requirements

Section 6746 (f) - Review

- Removes pesticide from its original container
- Same applies to rinsate and finished mix, all the way into the application device/vehicle (Tier I)
- System to withstand chemical exposures and pressure
- ***Equipment must be cleaned and maintained as specified by manufacturer***

Closed Mixing System Requirements

Section 6746 (f)

Tier I

- Rinsing the original container and transferring the rinsate while still attached to the closed system
- Provide effective rinsing: adequate pressure and volume (***Title 3 CCR Section 6684: Rinse and Drain Procedures***)

Closed Mixing System Requirements

Section 6746 (f)

Don't over pressurize!



Closed Mixing System Requirements

Section 6746 (f)

Tier I: Must incorporate pre-disconnection rinsing of the container.



** Closed system examples are not to be construed as either an actual or implied endorsement.*

Closed Mixing System Requirements

Section 6746 (f)

Tier II: can have a separate rinsing system or may also incorporate pre-disconnection rinsing of the container.

Hand pouring



Bottle Washer



* Closed system examples are not to be construed as either an actual or implied endorsement.

Closed Mixing System Requirements

Section 6746 (g)

Written, LEGIBLE, operating instruction must accompany the system.



Closed Mixing System Requirements

Section 6746 (g)

- Instructions must include:
 - Operating procedures
 - Maintenance cleaning and repair instructions
 - Restrictions/limitations of the equipment
 - Procedures for handling partials (if applicable)
- System must be maintained as specified in the written operating instructions
- DPR website for reference

Closed Mixing System Requirements

Section 6746 (h)

Exemptions:

- Label mandated method or device
- Foil seal removal/reseal without removing contents
- Regulatory sampling
- Refillable/Returnable containers not required to rinse
- 1 gallon or less of Tier II material
 - Use all PPE required by label

Closed Systems

Health and Safety *Report*
Worker Health and Safety Branch HS-1899

Guidelines for Developing and Manufacturing a Closed System Compliant with the
Requirements of Title 3 California Code of Regulations
Section 6746

By

Harvard R. Fong, CIH, Senior Industrial Hygienist

November 16, 2015

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF PESTICIDE REGULATION
1001 I STREET, SACRAMENTO, CA 95814

For guidance on developing a closed system, WH&S has created HS Report 1899.

This is available at
www.cdpr.ca.gov

Personal Protective Equipment (PPE)



What is it??

Clothing or devices worn by individuals to protect against hazardous environments



PPE!

When to Wear PPE

- When **handling** *potentially* hazardous materials or in *potentially* hazardous environments
 - Required by label
 - Using closed systems
 - ***Preventative*** measure
- Fashion statement

Routes of Exposure



Contact



Ingestion



Inhalation

Routes of Exposure



Glowing Evidence: Farmworker II



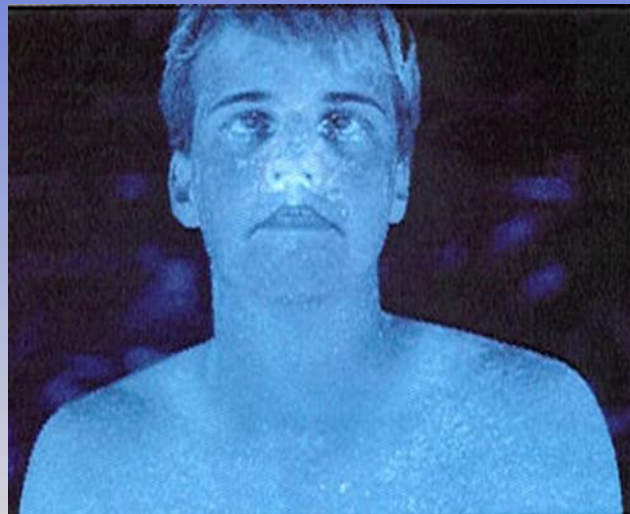
©Laurie Tumer

Routes of Exposure: Dermal Absorption

- Most common route of exposure



Routes of Exposure: Inhalation



Routes of Exposure: Ingestion

Paraquat in sports
drink bottle



ECs look like milk

PPE Functions

- Body Coverage
- Eye Protection
- Extremities Protection



PPE Functions



Limitations:

- Does not provide perfect safety, simply reduces risk/exposure when properly used
- PPE that is worn out, used up, or damaged provides inadequate or nonexistent protection

PPE Functions



Proper body protection to complete task safely

Background

- 2008, updated protocols and technology of respiratory protective equipment
- 2016 DPR amended PPE regulations
- Clarified employer responsibility



PPE: Care

DPR Regulation, 3 CCR 6738

PPE: Care

DPR Regulation, 3 CCR 6738

- **EMPLOYERS** must provide all necessary PPE, as required by label, permit condition and regulation, keeping it clean and in good repair
- Equipment must be inspected daily
 - Clean according to pesticide label instructions
 - No instructions...Detergent and hot water



PPE: Care

DPR Regulation, 3 CCR 6738

- Heavily contaminated PPE shall be replaced



PPE: Care

DPR Regulation, 3 CCR 6738

- Store clean PPE in a specifically designated, pesticide-free area
- Leather gloves used with phosphides shall be aerated for a *minimum of 12 hours* for cleaning



PPE: Care

DPR Regulation, 3 CCR 6738

- Make sure PPE is used *properly*



PPE: Care

DPR Regulation, 3 CCR 6738

- Store and wash used PPE separate from other laundry; dry PPE properly
- Make sure the personnel maintaining/cleaning PPE know what they're doing
 - Person or firm hired to clean is protected and informed of hazards of pesticides they might encounter

PPE: Care

DPR Regulation, 3 CCR 6738

- Never allow contaminated PPE to be taken into worker homes
 - Risk exposure to people and pets
- If worker does not return to headquarters, provide sealable container for worker to store contaminated equipment **outside** of home

Sealable containers



PPE: Use

DPR Regulation, 3 CCR 6738.1

PPE: Use

EMPLOYERS shall assure that all necessary/required PPE is present and available at the worksite and stored to prevent contamination.

PPE: Use

DPR Regulation, 3 CCR 6738.1

- **EMPLOYERS** shall assure that employees wear:
- [a] **Eye protection** (Section 6738.2) when mixing/loading or applying pesticides by hand or ground rig, or otherwise exposed to contaminated equipment



PPE: Use

DPR Regulation, 3 CCR 6738.1

- [b] **Chemical-resistant gloves** (Section 6738.3) when mixing/loading or applying pesticides by hand or ground rig, or otherwise exposed to contaminated equipment



PPE: Use

DPR Regulation, 3 CCR 6738.1

[c] **Chemical-resistant footwear** (boots, shoes or coverings) when required







PPE: Use

DPR Regulation, 3 CCR 6738.1

- [d] **Chemical-resistant hood or wide-brim hat** when chemical-resistant head protection is required



Sou'wester



RASH MAKER



BumpCap

Model SG2



PPE: Use

DPR Regulation, 3 CCR 6738.1

- [e] **Coveralls** when handling Category I (**Danger**) or Category II (**Warning**) pesticides. This does **NOT** apply to fumigants unless otherwise required by label



PPE: Use

DPR Regulation, 3 CCR 6738.1

- [f] **Chemical resistant apron** when required
- [g] **Chemical resistant coveralls** when required
 - [1] Note that 80°/85° heat stress regulation (separate from Cal/OSHA Heat Illness Standard*) applies when wearing chemical-resistant coveralls. Exemption for closed systems, enclosed cabs or other engineering thermal controls or cooled PPE.

*Title 8 CCR 3395 also applies.

Aprons



Chemical resistant coveralls/suits



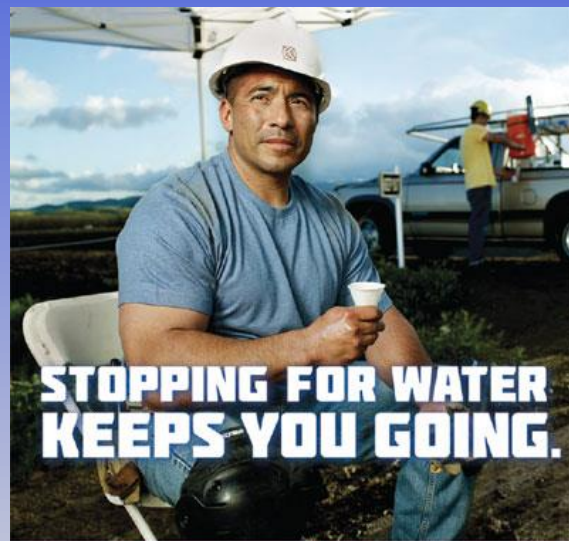
No chemical resistant coveralls/suits

He has eye "protection"





Note: Compliance with **Cal/OSHA Heat Illness Regulations** now required in DPR training requirements for handlers, field workers and early reentry field workers.



	<p>WATER. REST. SHADE.</p>	<p>Occupational Safety and Health Administration www.osha.gov</p> <p>1-800-321-OSHA (6742) TTY 1-877-689-5627</p>
--	---	---

OSHA QUICK CARD™

Protect Yourself
Heat Stress

When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death.

Factors Leading to Heat Stress

High temperature and humidity; direct sun or heat; limited air movement; physical exertion; poor physical condition; some medicines; and inadequate tolerance for hot workplaces.

Symptoms of Heat Exhaustion

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

Symptoms of Heat Stroke

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions.

Preventing Heat Stress

- Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.
- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning; rest regularly.
- Drink lots of water; about 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

What to Do for Heat-Related Illness

- Call 911 (or local emergency number) at once.
- While waiting for help to arrive:
 - Move the worker to a cool, shaded area.
 - Loosen or remove heavy clothing.
 - Provide cool drinking water.
 - Fan and mist the person with water.

For more complete information:

Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA

OSHA 3134-01R-08

Heat Illness Prevention

- One quart of water per hour for entire shift (2 gallons per employee for entire shift)
 - Liquids other than potable water will **not** meet requirements
- When outdoor temp exceeds 80°F, at least one shade area must be available to staff
 - Car okay IF A/C is on

*Title 8 CCR 3395 also applies.



NOT what Cal/OSHA means when it talks about providing shade.





PPE: Eye Protection

DPR Regulation, 3 CCR 6738.2

PPE: Eye Protection

DPR Regulation, 3 CCR 6738.2

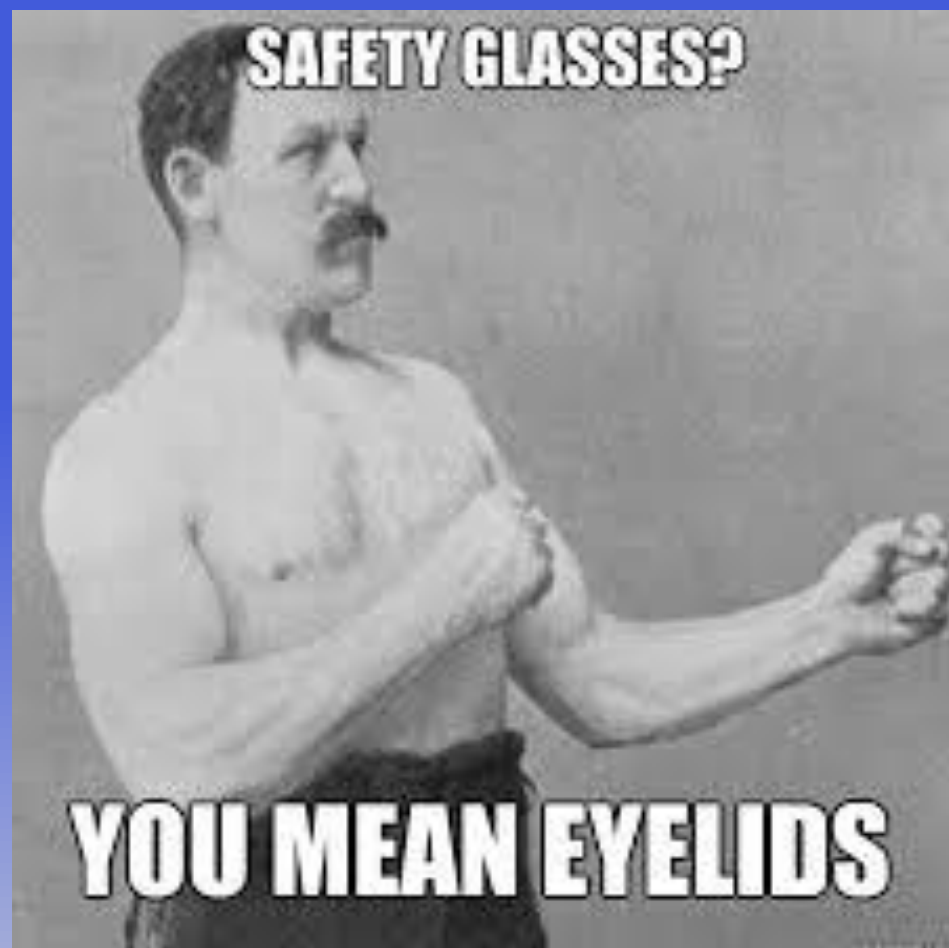
EMPLOYERS must assure that employees wear protective eyewear that provides brow and temple protection, conforming to the curvature of the face.

[a] Must be ANSI Z87.1-2010 compliant

American National Standard for Occupational and Educational Personal Eye and Face Protection Devices



1. **Safety Glasses**
2. **Goggles**
3. **Face Shield**



SAFETY GLASSES?

YOU MEAN EYELIDS



Not exactly what we had in mind...

No.





This is more like it!

PPE: *Eye Opening* Statistics

The American Academy of Ophthalmology (2016):

1. >20,000 workplace eye injuries/year (US Bureau of Labor Statistics)
2. \$300 million/year in lost productivity, medical treatment, worker comp
3. >**90%** of these eye injuries are preventable with protective eyewear

ALL THOSE IN
FAVOUR OF
SAFETY GLASSES



SAY 'EYE'

**OH SO YOU THINK WEARING SAFETY
GLASSES IS UN-COOL**



**TELL ME MORE ABOUT YOUR DESIRE
TO NOT SEE**

memegenerator.net



Not Z87

Don't be like Carol.

**Carol never wore
her safety goggles.**

**Now she
doesn't
them.**



FLINN SCIENTIFIC INC.
"Your Safer Source for Science Supplies"

PPE: Eye Protection

DPR Regulation, 3 CCR 6738.2

[b] If the label identifies specific protective eyewear, that eyewear or more protective must be worn



Label Required

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER!

Corrosive: Causes irreversible eye damage. May be fatal if swallowed or absorbed through the skin. **DO NOT** get in eyes, on skin, or on clothing.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- coveralls over short-sleeved shirt and short pants
- waterproof gloves
- shoes plus socks
- protective eyewear
- dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

attention.
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

In case of an emergency endangering life or property involving this product, call collect, day or night, Area Code 201-835-3100.

or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

DO NOT apply this product through any type of irrigation system.

This label must be in the possession of the user at the time of pesticide application.

PPE: Eye Protection

DPR Regulation, 3 CCR 6738.2

[c] NIOSH-approved fullface respirator satisfies eye protection requirement

[d] Prescription eyewear may not interfere with fit/function of protective eyewear



PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

EMPLOYERS must assure that employees wear appropriate chemical-resistant gloves when required

[a] If the barrier material is specified by a glove category, that material must be used

The DPR Glove Category Selection Key card or the USEPA website on PPE may be consulted for appropriate glove material

Glove Category Selection Key

Label Code	Materials Required by Law	Material Code
A	1,2,3,4,5,6,7,8	1: Laminate
B	1,2	2: Butyl
C	1,2,3,4,7,8	3: Nitrile
D	1,2	4: Neoprene
E	1,3,4,8	5: Natural
F	1,2,3,8	6: Polyethylene
G	1,8	7: PVC
H	1,8	8: Viton

All but Laminate and Polyethylene must be 14 mils or thicker

Glove Category on Label

Hazards to Humans and Domestic Animals

DANGER/ PELIGRO POISON

May be fatal if swallowed. Fatal if inhaled. Causes substantial but temporary eye injury. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Do not breathe spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove contaminated clothing and wash clothing before reuse.

IMPORTANT: Inhalation is an unlikely route of exposure due to low vapor pressure and large spray droplet size, but mucosal irritation or nosebleeds may occur. Prolonged contact with this concentrated product can irritate your skin.

Personal Protective Equipment (PPE)

Applicators and other handlers (other than Mixers and Loaders) must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical Resistant Gloves - **Category A** (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).
- A dust mist NIOSH-approved respirator with any N, R, P, or HE filter.

Mixers and Loaders must wear:

- Long-sleeve shirt and long pants
- Shoes plus socks
- Protective eyewear plus a dust mist NIOSH-approved respirator with any N, R, P, or HE filter.
- Chemical Resistant Gloves - **Category A** (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton).
- Chemical resistant apron
- Face Shield

PPE

Glove Category Selection Key Based on USEPA Label Codes



Glove Category Selection Key

Label Code	Materials Required by Law	Material Code
A	1,2,3,4,5,6,7,8	1: Laminate
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E	1,3,4,8	5: Natural
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G	1,8	7: PVC
H	1,8	8: Viton

All but Laminate and Polyethylene must be 14 mils or thicker

Available on DPR Website


Visit cdpr.ca.gov

- Search: “glove category selection key”
- PDF

PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

[b] If there is no specific glove material specified on the label (“use chemical-resistant gloves”) then any of the gloves listed in the DPR Glove Category Selection Key card may be used

 **Glove Category Selection Key**

Label Code	Materials Required by Law	Material Code
A	1,2,3,4,5,6,7,8	1: Laminate
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All but Laminate and Polyethylene must be 14 mils or thicker

Chemical Resistant



Chemical-Resistant Gloves

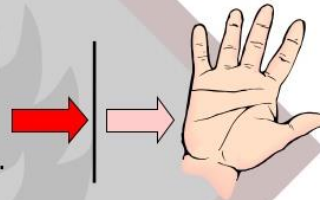
Chemical-resistant gloves facts

Chemical-resistant gloves are not totally "chemical-proof"

Solvents will eventually penetrate the gloves over time.

The thicker the glove, the more resistant it is to solvents.

Solvents will also break down (swell, crack or weaken) the glove material over time.



Thick is better than Thin

P Par Y Safety Consultants Alberta Canada



PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

[c] Other than laminate and polyethylene, all gloves must be 14 mils or thicker

Exception: For tasks requiring fine motor skills and dexterity, thinner gloves of the same material may be substituted for a maximum of 15 minutes to accomplish the task, then discarded.



PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

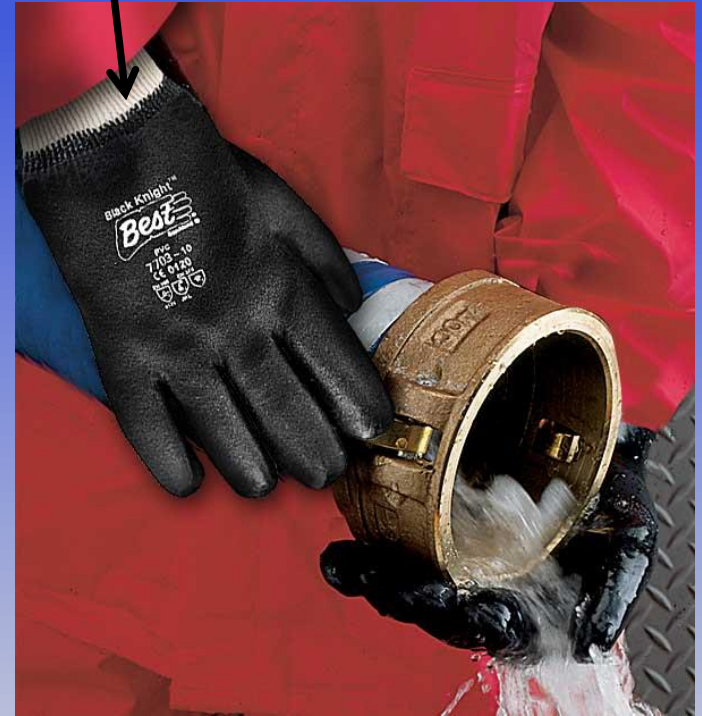
[d] Separable **glove liners are allowed** unless expressly forbidden by the label

- Liners must not extend beyond cuff of glove

- Contaminated liners must be removed immediately and all liners must be disposed of at the end of the day

[1] ***No flocked gloves***

Flocked gloves
not allowed!



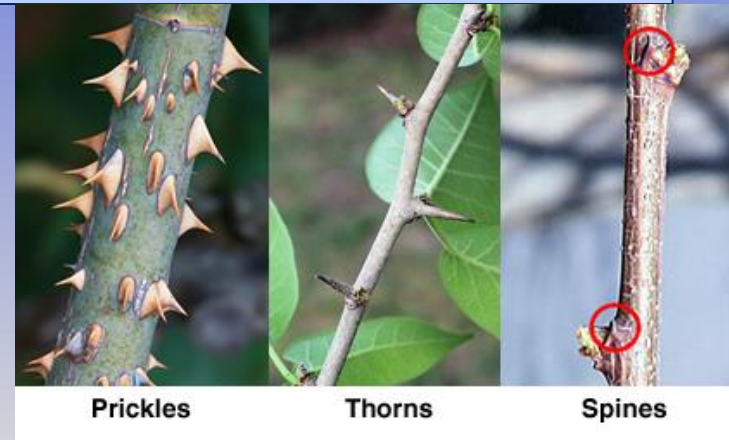
PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

[e] **Leather gloves may be worn over chemical-resistant gloves** if required by work environment*

-After such use, those leather gloves must always be worn over chemical-resistant gloves

*Such as dealing with roses



PPE: Hand Protection

DPR Regulation, 3 CCR 6738.3

[f] Pilots who bring contaminated gloves into the aircraft must store them in an enclosed chemical-resistant container

(e.g. sealing plastic box/bag).



PPE (Exemptions)

DPR Regulation, 3 CCR 6738.4

[a] Glove and eye protection exemptions:

- [1] Enclosed cab
- [2] Vehicle-mounted nozzles below employee and spraying downward
- [3] Long handled vertebrate pest control baiting devices
- [4] No contact with liquid fumigants
- [5] Application system, as determined by DPR, that provides equal or superior exposure protection as PPE



PPE (Exemptions)

DPR Regulation, 3 CCR 6738.4

[b] Eye protection exemptions:

[1] Applying non-insecticidal lures or baiting monitoring traps

[2] Applying solid fumigants to vertebrate burrows

[3] Applying vertebrate baits that are NOT propelled



PPE (Exemptions)

DPR Regulation, 3 CCR 6738.4

[c] & [d] Closed system exemption:

[1] **DANGER** and **WARNING** signal word materials can use protective eyewear, coveralls, chemical-resistant gloves and chemical-resistant apron in lieu of label requirements

[2] **CAUTION** signal word materials can use protective eyewear, and work clothing in lieu of label requirements

PPE (Exemptions)

DPR Regulation, 3 CCR 6738.4

[e] Enclosed cab exemptions:

[1] Work clothing may be worn in lieu of dermal PPE (including label required) when applying from an **enclosed cab**, as defined in 3 CCR Section 6000

[2] If label requires use of a **PARTICULATE filter respirator** then NO respirator required when applying from an enclosed cab with functional air ventilation system

DOES NOT apply to respirators with CHEMICAL cartridges!!

PPE (Exemptions) DPR Regulation, 3 CCR 6000

Definition:

Enclosed Cab – a chemical resistant barrier that completely surrounds the occupant(s) of the cab and prevents dermal contact with pesticides being applied outside the cab



PPE (Exemptions)

DPR Regulation, 3 CCR 6738.4

[f] [g] [h] Pilot exemption:

[f] work clothing, instead of PPE, may be worn while occupying an aircraft; respiratory protection not required in aircraft

[g] Helmets substitutes for head protection

[h] Helmet equipped with face shields can provide eye protection





That's it for PPE!



CDPR Website: <http://www.cdpr.ca.gov/>

California Department of Pesticide Regulation

HOME PROGRAMS DATABASES NEWS/PUBLICATIONS QUICK LINKS

Health & Safety
Report an Illness | Food Safety | Mitigating Exposure | Risk | Physicians | Workers | Fact Sheets

Enforcement
Complaints | County Oversight | Actions | Compliance | Restricted Materials | Endangered Species

Pest Management
Pesticide Use Report | Pest Problems | Grants | Innovator Awards | Schools | Child Care | Projects

Licensing
Exam Schedule | Valid Licenses | Continuing Ed | Study Materials | Fees | Forms | Index

Monitoring
Surface Water | Ground Water | Air | Special Projects

Laws & Regulations

Pesticides and Human Health Information

INJURED OR ILL FROM A PESTICIDE?

HEALTH & SAFETY RESOURCES

- Farmworker Safety and Outreach
- Worker Protection Program
- Worker Safety Regulations
- U.S. EPA Worker Protection Standard

WORKPLACE RESOURCES

- County Agricultural Commissioners
- Pesticide Safety Information Series Handouts
- Compliance Assistance for Employers
- UPDATED** Workplace Safety/Industrial Hygiene
- Safety Data Sheets

COMMUNITY RESOURCES

- Community Guide to Recognizing and Reporting Pesticide Problems
- Consumer Fact Sheets
- Pesticide Residues on Food
- FAQ
- Household Products Database
- School IPM
- National Pesticide Information Center

EVALUATING AND REDUCING EXPOSURE

- UPDATED** Reducing Exposure
- UPDATED** Personal Protective Equipment (PPE)
- UPDATED** Engineering Controls
- Assessing Health Risk
- Exposure Assessment
- U.S. EPA Pesticides: Health and Safety Quick Finder

MEDICAL RESOURCES

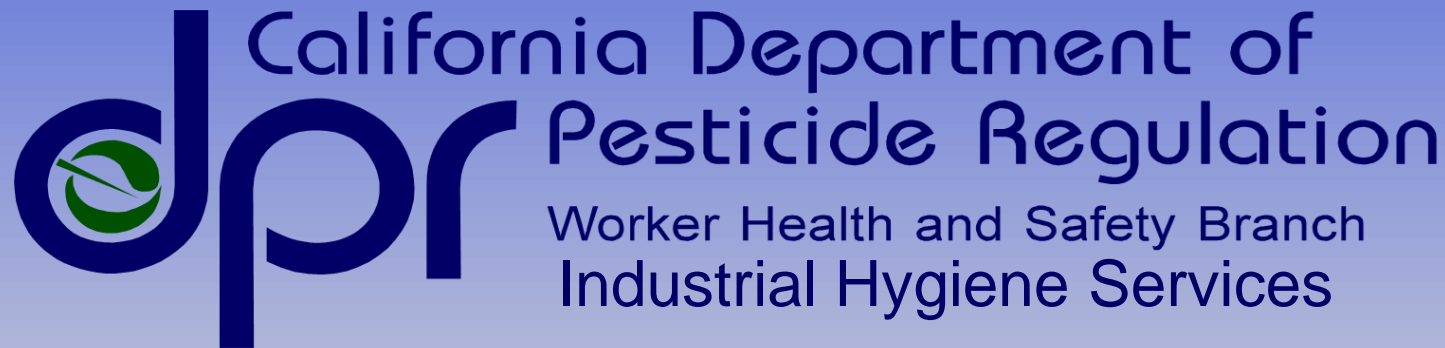
- Information for Physicians
- Pesticide-Related Illnesses
- California Pesticide Illness Query (CalPIQ)

HEALTH AND SAFETY PROGRAMS

- Worker Health and Safety Branch
 - Publications
- Enforcement Branch
- Human Health Assessment Branch
 - Publications

Contact Information

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