

RUTGERS

New Jersey Agricultural
Experiment Station

Selection & Use of Gloves for Pesticide Professionals: Reading Between the Lines of the Label

Washington State University
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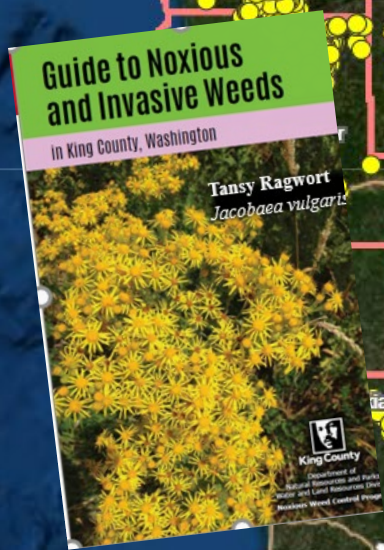
Selection & Use of Gloves for Pesticide Professionals: Reading Between the Lines of the Label

- Reading & interpreting what type of glove the label requires
- Choosing glove type based on physical & chemical properties
- Using gloves within their known limitations for pesticides





Locate yourself on the map



60mi

What is the top noxious weed you deal with as a professional pesticide applicator?

Glove Selections from the Pesticide Label



Precautionary Statements:

*Chemical resistant gloves
such as barrier laminate,
butyl rubber \geq 14 mils,
nitrile rubber \geq 14 mils,
neoprene \geq 14 mils,
viton \geq 14 mils*

Drexel

Dicamba DGA
Herbicide

For weed control in Asparagus, Conservation Reserve Programs, Corn, Cotton, Fallow croplands, General farmland (Non-cropland), Grass grown for seed, Hay, Pasture, Proso millet, Rangeland, Small grains, Sod farms and Farmstead turf, Sorghum, Soybeans and Sugarcane.

ACTIVE INGREDIENT:
Diglycolamine salt of Dicamba..... 58.1%
OTHER INGREDIENTS:..... 41.9%
TOTAL:..... 100.0%

This product contains 39.4% of Dicamba equivalent to 4 pounds per gallon or 480 grams per liter.

**KEEP OUT OF REACH OF CHILDREN
CAUTION**
See FIRST AID Below

EPA Reg. No. 19713-687 Net Content:
EPA Est. No. 19713-XX-XXX 2.5 Gals. (9.46 L)

FIRST AID

IF IN EYES:
• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
• Call a poison control center or doctor for treatment advice.

IF SWALLOWED:
• Call a poison control center or doctor immediately for treatment advice.
• Have a person sip a glass of water if able to swallow.
• Do not induce vomiting unless told to do so by a poison control center or doctor.
• Do not give anything to an unconscious person.

IF ON SKIN OR CLOTHING:
• Take off contaminated clothing.
• Rinse skin immediately with plenty of water for 15 to 20 minutes.
• Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE):
Some of the materials that are chemical-resistant to this product are listed below.
Applicators and handlers must wear:
• Long-sleeved shirt and long pants
• Chemical resistant gloves (except for pilots) such as barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, viton \geq 14 mils
• Shoes plus socks
• Protective eyewear

(Continued)

GROUP 4 HERBICIDE

PRECAUTIONARY STATEMENTS (Cont.)
See "ENGINEERING CONTROLS" for additional requirements.
Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS:
When handlers use closed systems or enclosed cabs 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.

USER SAFETY RECOMMENDATIONS
Users should: 1) Wash hands thoroughly before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

PHYSICAL AND CHEMICAL HAZARDS
Do not mix or allow to come in contact with oxidizing agents as hazardous chemical reaction may occur.

ENVIRONMENTAL HAZARDS
Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinseate. Apply this product only as directed on this label.
This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Ground and Surface Water Protection
Point source contamination: To prevent point source contamination, DO NOT mix, load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. DO NOT apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.
Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have sufficient capacity to contain all product spills, equipment or container leaks.

Manufactured By:
Drexel Chemical Company
P.O. Box 13327, Memphis, TN 38113-0327
800-391-7078

The DREXEL logo is a registered trademark of Drexel Chemical Company.

687SP-0217*
DICAMBA DGA Page 1 of 13

(Smallseed)	(Pineappleweed)	
BIENNIALS		
Burdock (Common)	Geranium (Carolina)	Ragwort (Tansy)
Carrot (Wild [Queen Anne's Lace])	Gromwell	Starbistle (Yellow)
Cookie (White)	Knawweed (Diffuse, Spotted)	Sweetclover
Eveningprimrose (Common)	Mallow (Dwarf)	Teasel
	Plantain (Bracted)	Thistle (Bull, Milk, Musk, Plumless)

(Continued)

DICAMBA DGA Page 2 of 13

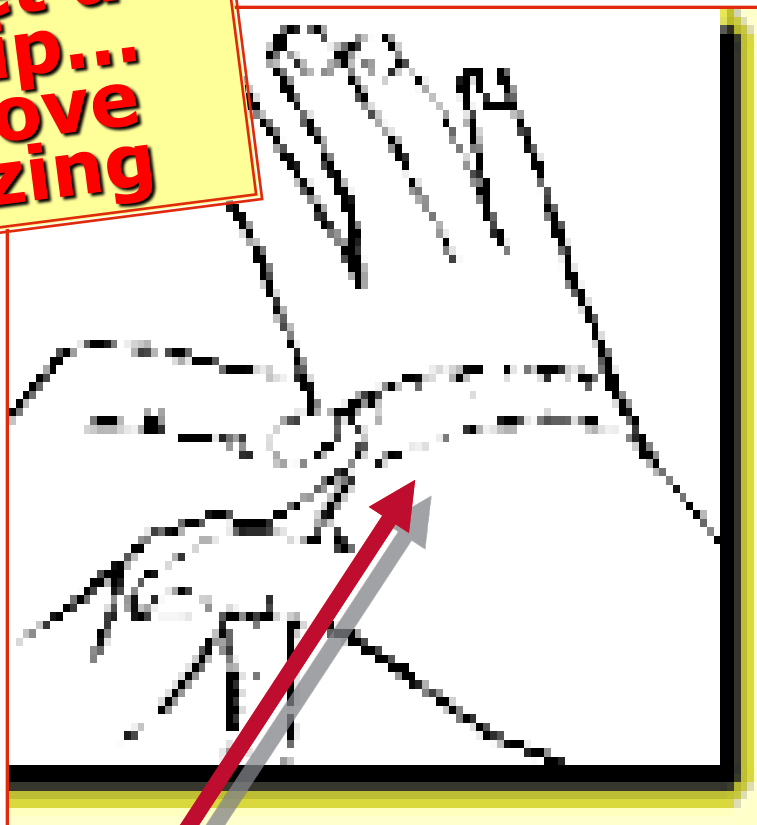
Considerations for Selecting Gloves



- **Design:** sizing, composition, thickness, length, *comfort*
- **Chemical barrier performance:** degradation, permeation, penetration
- **Task** evaluation (fine motor skills/ hand fatigue/length of time needed/risk of splash/NEVER IMMERSION)
- **Physical performance:** durability, temperature resistance, flexibility, aging resistance, cleanability, (i.e., decon)
- **Cost**

Sizing Matters

**Get a
grip...
glove
sizing**



**circumference
of palm**

Palm	Glove Size
6-7	X-small
7-8	small
8-9	medium
9-10	large
10-11	X-large
11-12	XX-large

get the flock out of here...



Stay away from
palm-dipped gloves
with knitted cuffs



EPA-defined Chemical Resistant



Per regulations: “made of a material that allows no measureable movement of the pesticide being used through the material during use”

**Silver
shield**

butyl

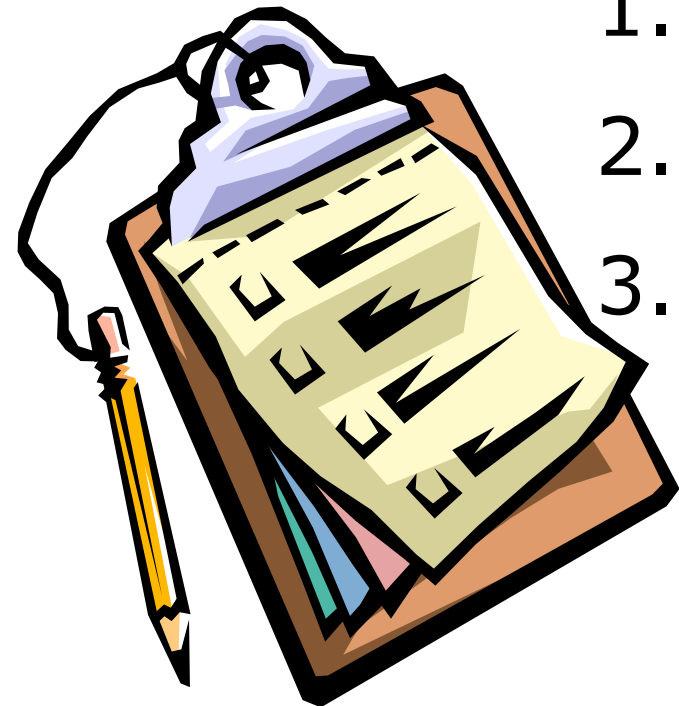
nitrile

viton

latex

3 Ways to Select the Type of EPA “Chemical-Resistant” Gloves from the Label

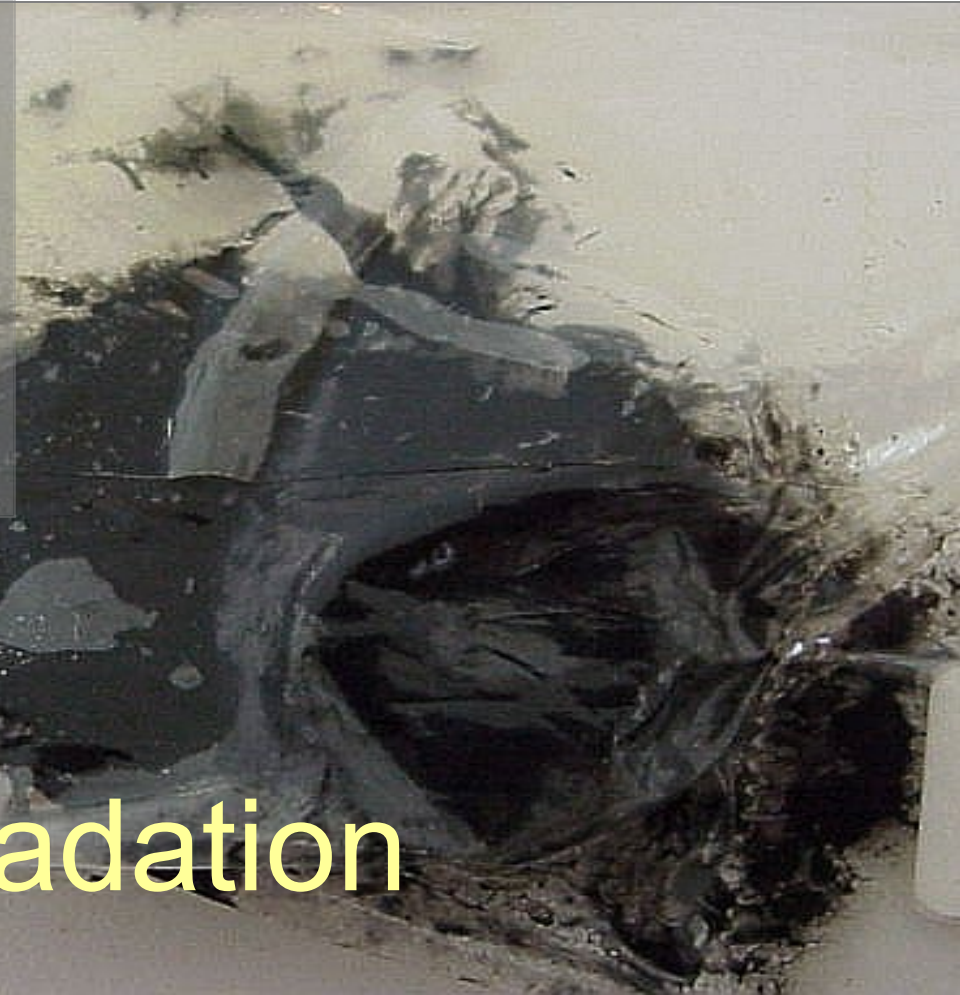
1. PPE manufacturers/vendors
2. Pesticide manufacturers
3. Pesticide label names the type



Barrier Performance of PPE to Pesticides



- **Degradation** *a reduction in 1 or more physical properties of PPE due to contact with a chemical (PPE may swell, discolor, shrink, soften, brittle, change texture); break-down.*
- **Permeation** *the process by which a chemical moves through protective material on a molecular level.*
- **Breakthrough** *complete passage inside of pesticide from outside of PPE.*



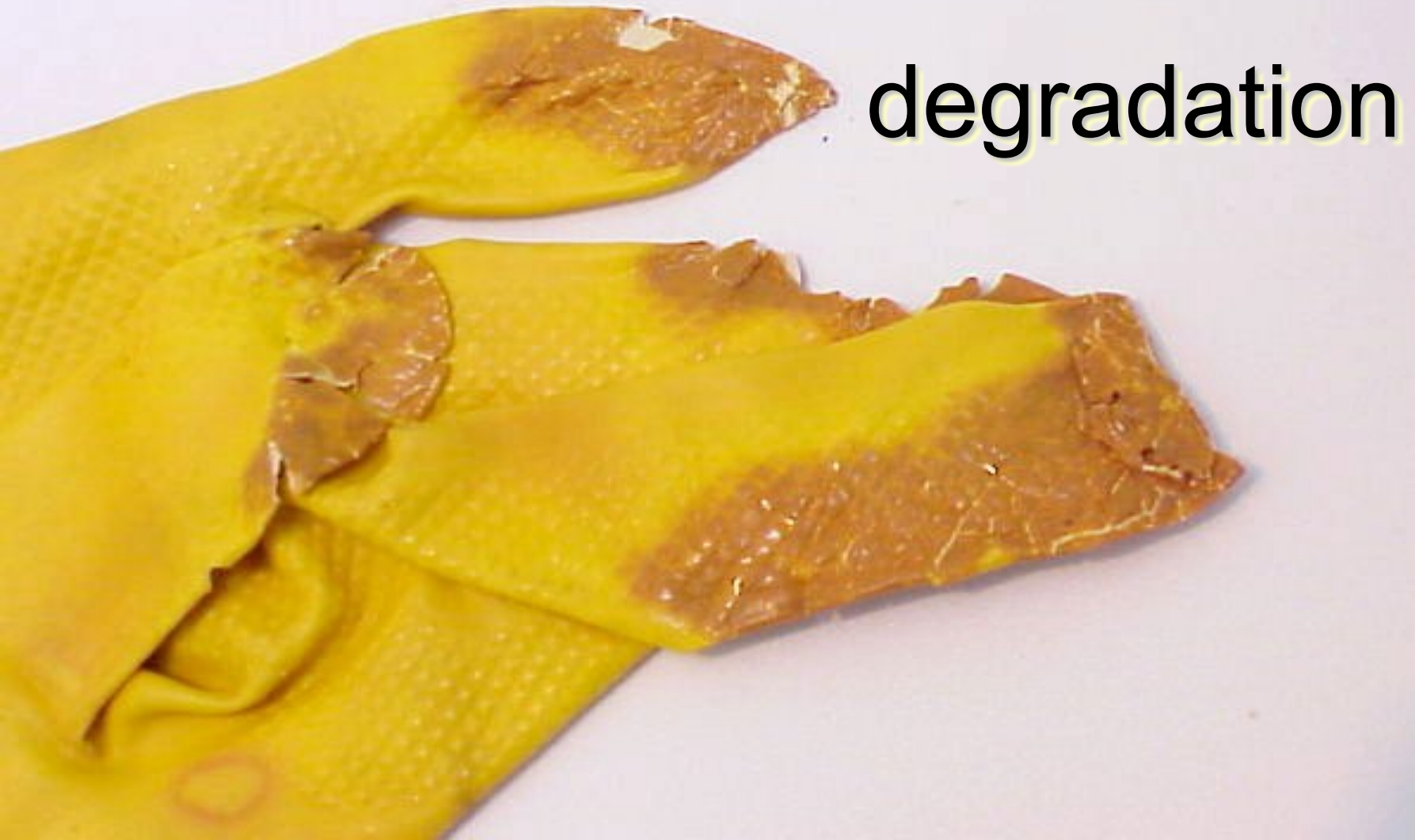
degradation

Check in Question #1

True or False?

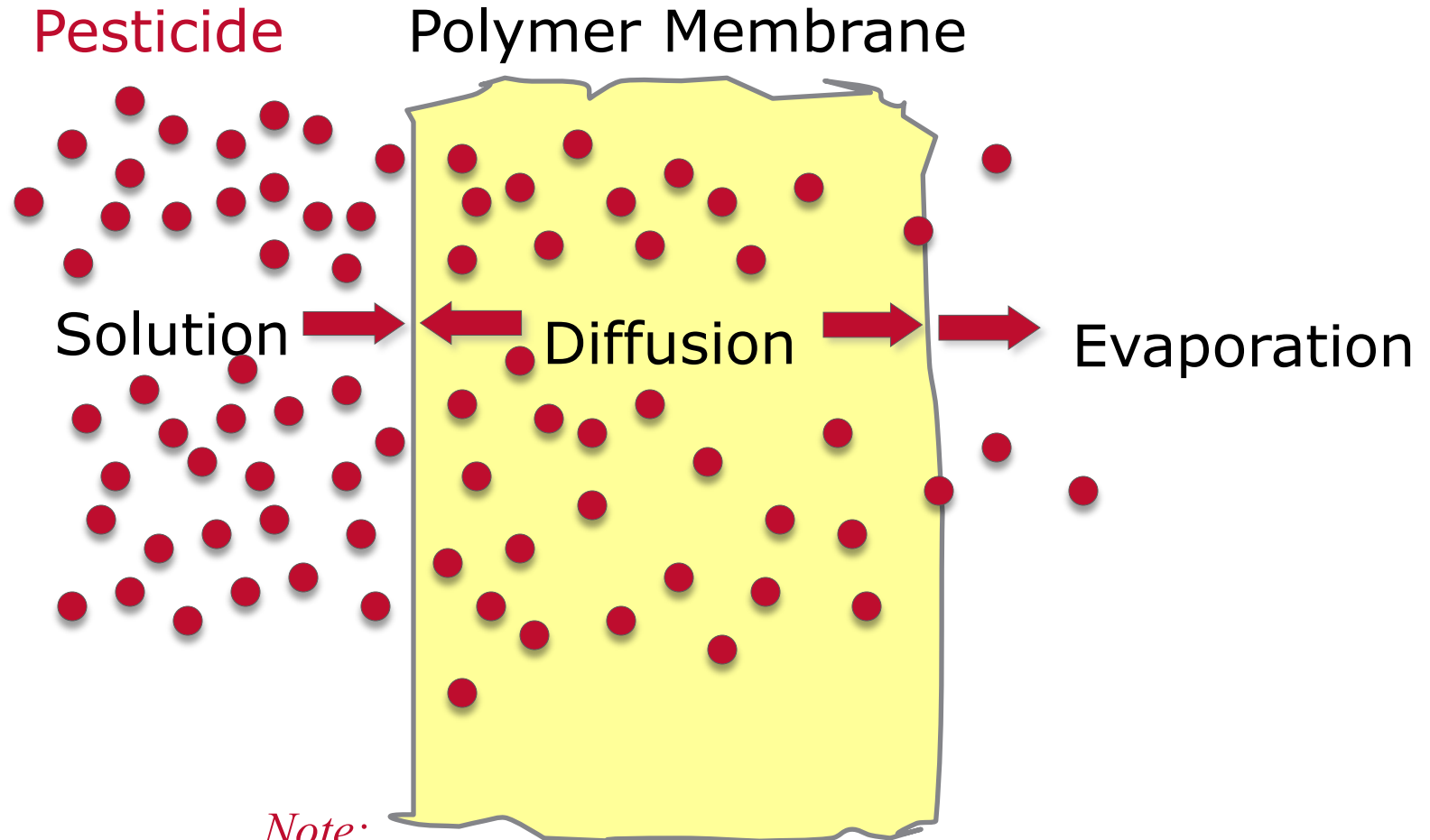
EPA regulations define “chemical resistant” as “made of a material that allows no measurable movement of the pesticide being used through the material during use”.

Answer: True!!!!



degradation

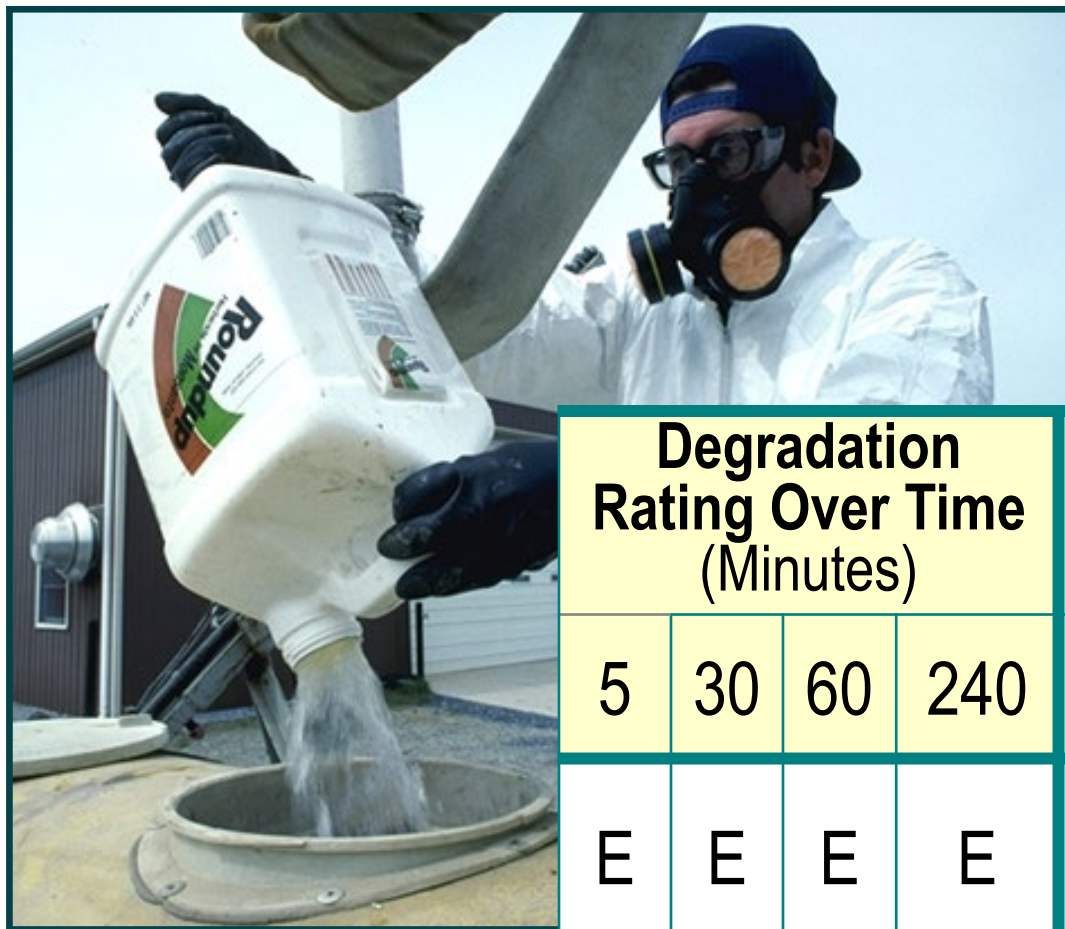
Permeation Process



*Note:
consider both breakthrough time & rate*

(Adapted after Forsberg)

PPE Manufacturer Information



Barrier Performance Testing:

NitroSolv Glove with Glyphosate

Degradation Rating Over Time (Minutes)				Permeation Resistance	
5	30	60	240	Breakthrough Time (Minutes)	Rate (ug/cm ² /min)
E	E	E	E	>480	not detected

PPE Manufacturer Information

Glyphosate Barrier Performance Testing



Glyphosate
Roundup
Ranking

Six Different Glove Types	Breakthrough Time (minutes)	Permeation Rate (ug/cm ² /min)
Butyl	>480	not detected
Viton 890	>480	not detected
Ultraflex Nitrile (supported)	30	4
NitriSolv (unsupported)	>480	not detected
Hustler PVC	30	1
Neoprene	15	4

IMPORTANT THINGS TO REMEMBER: PPE Barrier Performance

- No one material will be a barrier to all pesticides*
- Usually, the thicker the barrier material usually the longer it takes to break through*
- Thicker gloves reduces tactility & dexterity*
- Typically, the higher the temperature, the faster the breakthrough*
- Even the best CPC will perform poorly if torn, cut, abraded or otherwise compromised or contaminated*











* Adapted from source:
ACGIH Guidelines for Selection Protective Clothing

(chemical protective clothing)

Example Online Database Shows Permeation & Degradation Data by Glove Type (Standardized)

Permeation Breakthrough Times

The permeation breakthrough times present in this chart were evaluated according to the ASTM F739 standard. Colored cells with numbers and the symbol **C** correspond to experimentally determined data generated by an accredited laboratory. The rest of cells correspond to estimations

Material				LLDPE	Neoprene	PVA	Nitrile	Butyl	Viton Butyl	Nitrile /Neoprene	Nitrile	Nitrile /Neoprene	Nitrile
Thickness (mm)				0.062 mm 2.5 mil	N.A.	N.A.	0.56 mm 22 mil	0.35 mm 14 mil	0.30 mm 12 mil	NA mm 15 mil	N.A.	0.20 mm 7.9 mil	0.12 mm
Brand				AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec® Solvex®	AlphaTec®	AlphaTec®	AlphaTec®	AlphaTec®	MICROFLEX®	MICROFLEX®
Product Group				02-100	08-352.354	15-554	37-185.165	38-514	38-612	53-001	58-530.535	93-260.360	93-850
Type	CAS	Chemical Name	%										
sgl	108-94-1	Cyclohexanone	100	> 480'	60-120'	> 480'	60-120'	> 480'	120-240'	30-60'	10-30'	< 10'	5' C
sgl	123-86-4	n-Butyl acetate	100	> 480' C	< 10'	> 360' C	75' C	30-60'	< 10' C	30-60'	10-30'	10-30'	< 10'
sgl	1330-20-7	Xylene, isomeric mixture	100	> 480'	10-30'	> 480'	60-120'	10-30'	> 480'	30-60'	10-30'	11' C	6' C
sgl	68334-30-5	Diesel fuel	100	> 480'	120-240'	> 480'	> 480'	30-60'	> 480'	> 480'	> 480'	> 480'	> 480'
sgl	64-17-5	Ethanol	100	> 480'	240-480'	10-30'	> 480'	> 480'	> 480'	240-480'	60-120'	120-240'	19' C

Legend for Hand Protection

Permeation Breakthrough Times		
<10	Not Recommended	
10-30	Splash Protection	
30-60	Splash Protection	
60-120	Medium Protection	
120-240	Medium Protection	
240-480	Good Protection	
>480	Good Protection	

Degradation Ratings	
DD	Delamination of outer layer
NR	Not Recommended
P	Poor
F	Fair
G	Good
E	Excellent

Permeation breakthrough time is the time (in minutes) for the chemical in question to be permeating through the material at a rate of $1.0 \mu\text{g}/\text{cm}^2/\text{min}$ (as per EN ISO 374) or $0.1 \mu\text{g}/\text{cm}^2/\text{min}$ (as per ASTM F739).

Degradation ratings evaluate the amount of change a glove material will suffer due to contact with a chemical.

Manufacturing processes use the same industrial solvent or chemical day in / day out. They also can change the process to control the hazards.

CHOOSING THE RIGHT PROTECTION IS EASY WITH AnsellGUARDIAN® PARTNER

You can count on the expertise of our AnsellGUARDIAN® team of dedicated chemists and chemical engineers for customised requests.



Pesticide formulations are proprietary.... EPA currently manages the risk by citing the glove type on the pesticide label...





'PERMEATION RESISTANCE OF GLOVE MATERIALS TO AGRICULTURAL PESTICIDES'

- The science behind EPA's CR glove selection criteria put into the matrix as **"Chemical Resistance Category Chart"**
- Key finding: **carrier solvent generally permeates first and at a higher rate.**
- Types of **solvents in pesticide** are part of the formulation chemistry and may not be on the label due to confidential business information (**CBI**) rights.
- So, EPA developed and distributed **"Chemical Resistance Category Chart"** to all pesticide manufacturers in 1992. **Based on chemical resistance of gloves to solvents.**



2015 Revision of Worker Protection Standard § 170.240 Personal Protective Equipment: Proposed Change

Chemical-Resistant PPE

1. **Current rule and proposal.** The definition for “chemical resistant” in the existing WPS (i.e., 1992) is a “material that allows no measurable movement of the pesticide being used through the material during use.”

Prior to the proposed rule, EPA received many comments from stakeholders suggesting that there was no way for agricultural employers, handlers, early-entry workers, pesticide educators and inspection personnel to ensure the PPE being used was “chemical resistant.” **EPA proposed requiring employers to provide PPE defined by its manufacturer as chemical resistant.**

2. **Final rule. EPA has rejected the proposed change.** The final rule retains the existing definition of chemical resistance. The final regulatory text for this requirement is available at in 40 CFR 170.507(b)(1).

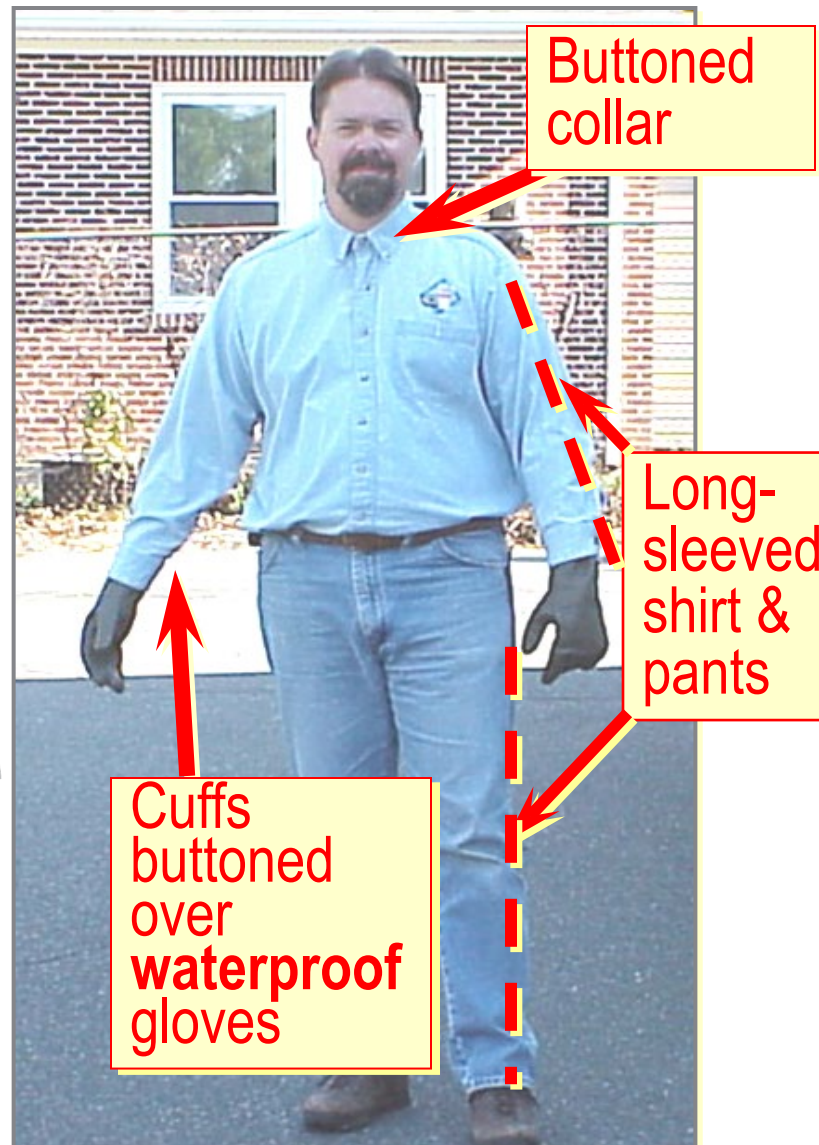
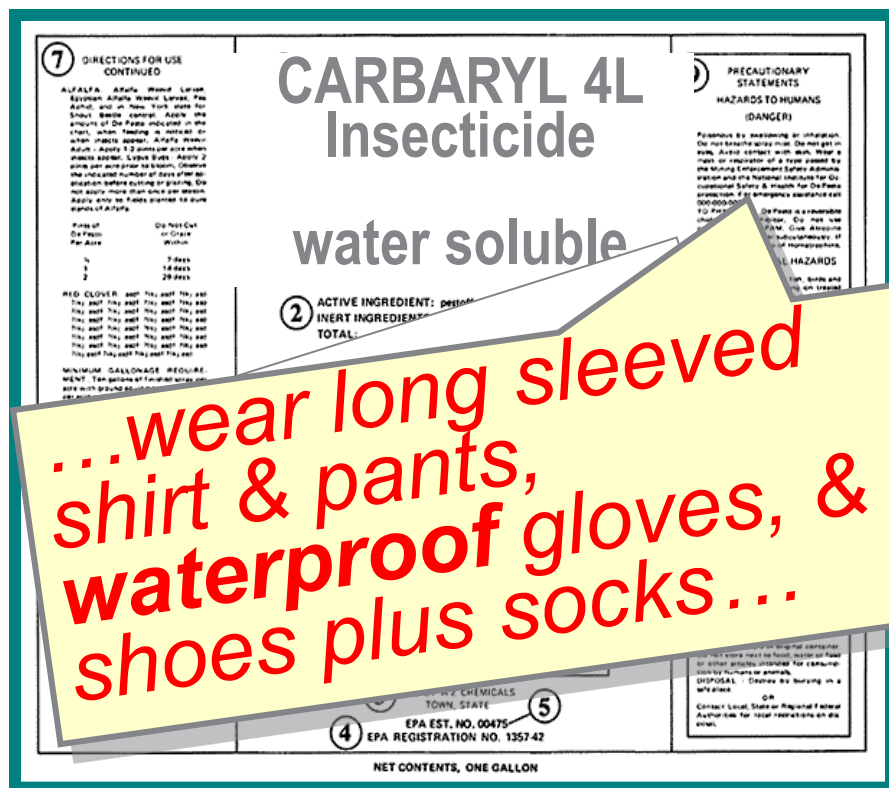


Chemical Resistance – Different Gloves with Different Pesticide Solvents

<i>Pesticide Solvent</i>	Types of Protective Fabrics							
	Barrier Laminate	Rubber				Poly ethylene	PVC	Viton
		Butyl	Nitrile	Neoprene	Natural			
<i>A</i>	high	high	high	high	high	high	high	high
<i>B</i>	high	high	slight	slight	none	slight	slight	slight
<i>C</i>	high	high	high	high	mod	mod	high	high
<i>D</i>	high	high	mod	mod	none	none	none	slight
<i>E</i>	high	slight	high	high	slight	none	mod	high
<i>F</i>	high	high	high	mod	slight	none	slight	high
<i>G</i>	high	slight	slight	slight	none	none	none	high
<i>H</i>	high	slight	slight	slight	none	none	none	high



Label PPE Statements



Label PPE Statements

**7 DIRECTIONS FOR USE
CONTINUED**

ALFALFA. Alfalfa, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Alfalfa, vernal, Lucerne, and alfalfa of the Fes type indicated in the label, when feeding in pastures or when baled for hay. Alfalfa, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Alfalfa, vernal, Lucerne, and alfalfa of the Fes type indicated in the label, when feeding in pastures or when baled for hay.

Rate of Application	Days After Application	Do Not Cut or Graze Livestock
1	7 days	
2	14 days	
3	21 days	

RED CLOVER. Red clover, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Red clover, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Red clover, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne.

MINIMUM GALLONAGE REQUIREMENT. Ten gallons of finished spray per acre with ground equipment, two gallons per acre with aerially applied equipment.

FIELD CORN. Field corn, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Field corn, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Field corn, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne.

SWEET CORN. Sweet corn, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Sweet corn, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Sweet corn, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne.

SUGARCANE. Sugarcane, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Sugarcane, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne. Sugarcane, vernal, Lucerne, Egyptian alfalfa, vernal, Lucerne, Fes, alfalfa, and in New York state for Lucerne.

GENERAL USE PESTICIDE

CERTIFIED APPLICATORS OR PERSONS UNDER THEIR
DIRECT SUPERVISION

MALATHION 57 EC

Contains 35.2% xylene range solvents

**9 PRECAUTIONARY
STATEMENTS**

**HAZARDS TO HUMANS
(DANGER)**

Flammable by spraying or inhalation. Do not breathe spray mist. Do not get in eyes. Avoid contact with skin. Wear a mask or respirator if a type listed by the Mining Enforcement Safety Administration and the National Institute for Occupational Safety & Health for the protection of the respiratory tract is required. For emergency assistance call 800-455-5000.

ENVIRONMENTAL HAZARDS

May be toxic to fish, birds, and honeybees. Do not apply within 3 miles of water. Do not apply within 3 miles of water. Do not apply within 3 miles of water. Do not apply within 3 miles of water. Do not apply within 3 miles of water.

...long-sleeve shirt & pants, shoes & socks, protective eyewear, chemical resistant gloves (barrier laminate, butyl, nitrile, or viton)...

Label PPE Statements

⑦ DIRECTIONS FOR USE
CONTINUED

ALFALFA. Alfalfa. Wood. Larvae. For
control, use on New York state for
shoot. See label. Apply the
amount of the Pesticide indicated in the
chart, when feeding is indicated or
when insects appear. Alfalfa. Wood.
Larvae. Apply 1.2 gallons per acre when
insects appear. Lytle. Buds. Apply 2
gallons per acre prior to bud. Control
the indicated number of days after ap-
plication before cutting or grazing. Do
not apply more than once per season.
Apply only to fields planted to pure
stands of alfalfa.

Rate of Pesticide Per Acre	Do Not Cut or Graze Within
1	7 days
2	14 days

RED CLOVER. Do not cut, graze, or
feed any livestock for 14 days after
application. Do not cut, graze, or
feed any livestock for 28 days after
application.

MINIMUM GALLONAGE REQUIRE-
MENT. Ten gallons of finished spray con-
taining 1.25% active ingredient, two gallons
per acre with nozzle.

FIELD CORN. Corn. Moths. Use
1.25 gallons of the Pesticide per 13,000 sq.
ft. of ground. Do not cut, graze, or
feed any livestock for 14 days after ap-
plication. Do not cut, graze, or feed any
livestock for 28 days after application.

⑥ RESTRICTED USE PESTICIDE

**2,4-D amine
Herbicide**

DANGER

Contains petroleum distillate.

⑨ PRECAUTIONARY
STATEMENTS
HAZARDS TO HUMANS
(DANGER)

May be irritating to skin, eyes,
or mucous membranes. Do not get in
eyes. Contact with skin. Wear a
respirator or a type covered by
Using Enforcement Safety Adminis-
tration. See the National Institute for Oc-
cupational Safety & Health for the Pesticide
label. If an emergency, call 1-800-555-5555.

HAZARDS

May be irritating to skin, eyes,
or mucous membranes. Do not get in
eyes. Contact with skin. Wear a
respirator or a type covered by
Using Enforcement Safety Adminis-
tration. See the National Institute for Oc-
cupational Safety & Health for the Pesticide
label. If an emergency, call 1-800-555-5555.



... LS shirt & pants, shoes & socks,
protective eyewear, chemical resistant
gloves (**barrier laminate, neoprene,
nitrile, or viton**); chemical resistant head
covering if overhead work; **consult
category E on an EPA chemical
resistance category selection chart...**

Note: When applicators are directed to EPA Chemical Category Chart, these labels were written between 1992 to 2011. EPA policy was amended in 2011 to only include the glove types.



Convenient, Lightweight, Easy-to-use,
First Responders' Self-Control



IMP...ing PAK 1

Consult the instructions for your particular device.
Because this device is not applicable to the disposal of any spill situation, please note that this device as a final disposal method is not to be used.
The user of this device is responsible for the disposal of the device in accordance with the applicable regulations (29 CFR 1910.120).

DISCLAIMER: THE INFORMATION HEREIN (HEREINAFTER "INFORMATION") IS BELIEVED TO BE ACCURATE AND REPRESENTATIVE OF THE INFORMATION AVAILABLE TO THE COMPANY FOR THEIR PURPOSES. THE COMPANY DOES NOT ASSUME ANY DAMAGES OF ANY KIND OR UPON INFORMATION OR INFORMATION IMPLIED, OF MERCHANTABILITY OR OTHER NATURE. THE COMPANY MAKES NO WARRANTY WITH RESPECT TO THE INFORMATION OR ANY PRODUCT THAT MAY BE THE INFORMATION REFERS.

CALL 1-800-382-8473 or FAX it to 1-800-551-1128



Inspection Prior to Use

- Always **inspect new gloves**: pinholes, irregular dipping. Use first line vendors of gloves. Will see that glove manufacturers stock their lines with certain vendors.
- Prior to re-use , inspect gloves for signs of degradation: **odors, discoloration, cracks, stiffness, holes, punctures, rips, tears**
- Check for **damage** that would diminish the integrity and protectiveness of the glove
- Glove manufacturers urge end-users to treat gloves as disposable. Reduces spread of contamination.



User Safety Recommendations

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly & put on clean clothing.
- Remove PPE immediately after handling pesticide.
- Wash the outside of gloves before removing.
- As soon as possible (after use), wash thoroughly & change into clean clothing



Gloves as chemical barriers – how do they perform for the period of intended use? What are their limitations?



Physical Performance:

- **Durability:** Does the material have sufficient strength to withstand the physical strength of the tasks at hand? (**supported gloves are stronger but usually less dexterity**)
- **Mechanical Protection:** material resist tears, punctures, cuts, and abrasions? (In certain industries hand injuries are severe. **EN388: 2016 Standard for abrasion & cut. Kevlar for heavy duty; some gloves have wear indicators.**)
- **Flexibility:** Is the material flexible or pliable enough to allow end users to perform needed tasks? (**supported gloves are stronger but usually less dexterity**)
- **Temperature resistance:** Will the material maintain its protective integrity and flexibility under **hot** and **cold** extremes when/where you will use it? (**dexterity to handle nozzles/parts for early spring mornings**)
- **Aging resistance:** shelf life
- **Cleanability:** Will the material **withstand repeated use** after contamination and decontamination? (**single use, limited use, reuseable?**)



- Gloves are not meant for immersion. Once splashed, clean or replace
- Once a chemical has been absorbed by the barrier material, it continues to permeate through the material.
- There is no standard for reuse of PPE. Protective clothing "decontamination" & re-use are controversial and unresolved issues...
- Health hazard of re-use is not known

PPE Selection & Use Limitations

- Even relatively inert solids can eventually permeate into the glove polymer and degrade its physical properties. The outside of the glove can be thoroughly cleaned, but solid material may remain on or in the glove.
- There is no practical way to completely remove a solid chemical that has permeated into a glove. Volatile liquids can evaporate back out during overnight storage in the open air, but solids (as well as nonvolatile liquids) remain.
- Workers can be exposed if the chemical reaches the inside, and anything that they handle may be contaminated by residual solid that has diffused back to the outside surface.
- In some cases it may be necessary to limit the service life of such gloves to a use time as short as one day, depending on the particular glove/chemical combination used.

Never store PPE
with chemicals
#1



Never store PPE
with chemicals
#2



Drexel

Dicamba DGA

Herbicide

For weed control in Asparagus, Conservation Reserve Programs, Corn, Cotton, Fallow croplands, General farmstead (Non-cropland), Grass grown for seed, Hay, Pasture, Proso millet, Rangeland, Small grains, Sod farms and Farmstead turf, Sorghum, Soybeans and Sugarcane.

ACTIVE INGREDIENT:

Diglycolamine salt of Dicamba..... 58.1%

OTHER INGREDIENTS: 41.9%

TOTAL: 100.0%

This product contains 39.4% of Dicamba equivalent to 4 pounds per gallon or 480 grams per liter.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See FIRST AID Below

EPA Reg. No. 19713-687

Net Content:

EPA Est. No. 19713-XX-XXX

2.5 Gals. (9.46 L)

FIRST AID

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:

- Call a poison control center or doctor immediately for treatment advice.
- Have a person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything to an unconscious person.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

Applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves (except for pilots) such as barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, viton \geq 14 mils
- Shoes plus socks
- Protective eyewear

(Continued)

GROUP 4 HERBICIDE

PRECAUTIONARY STATEMENTS (Cont.)

See "ENGINEERING CONTROLS" for additional requirements. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS:

When handlers use closed systems or enclosed cabs 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.

USER SAFETY RECOMMENDATIONS

Users should: 1) Wash hands thoroughly before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow to come in contact with oxidizing agents as hazardous chemical reaction may occur.

ENVIRONMENTAL HAZARDS

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Apply this product only as directed on this label. This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Ground and Surface Water Protection

Point source contamination: To prevent point source contamination, DO NOT mix, load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. DO NOT apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad must be maintained at 110% of the weight of the heaviest load that may be on or move across the pad and have sufficient strength to support the weight of the heaviest load.

For product spills, equipment or container leaks,

Manufactured By:

Drexel Chemical Company

P.O. Box 13327, Memphis, TN 38113-0327

SINCE 1972

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687SP-0217*

DICAMBA DGA Page 1 of 13



Precautionary Statements:

*Chemical resistant gloves
such as barrier laminate,
butyl rubber \geq 14 mils,
nitrile rubber \geq 14 mils,
neoprene \geq 14 mils,
viton \geq 14 mils*

Selection & Use of Gloves for Pesticides: Reading Between the Lines of the Label

- Read & interpret the label
- Choosing glove type based on physical & chemical properties
- Safely use gloves within their known limitations





Thank you!

Pat Hastings

Extension Pesticide Safety Education Program (PSEP)

Coordinator for New Jersey

pdh@rutgers.edu 848-932-9802

PSEP Program website: www.pestmanagement.rutgers.edu/PESP

THE ENVIRONMENTAL IMPACT IS THE ONLY DIFFERENCE

Did you know that of the 150 billion pairs of gloves produced every year, an estimated 100 billion pairs of gloves are thrown away each year? As a result, piles of gloves end up in landfills each year.

Thanks to its special composition, our EBT gloves decompose within 1 to 5 years in active landfills, where regular nitrile gloves need more than 100 years.

EBT requires biologically active landfills for biodegradation. This means gloves with EBT can't begin to biodegrade prior to disposal. These abilities have been validated by independent certified laboratories using international test methods ASTM D5511 and D5526.



<https://www.showagroup.com/us-en/technologies/ebt-biodegradable-technology>



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OUR PRODUCTS REQUESTING SAMPLES

At SHOWA, we're hands-on people especially when it comes to our products. We understand the value of seeing them in person, trying them on and feeling the difference when you really put them to the test. We're so confident in our gloves, we'll give you the opportunity to try them out before purchase. Just request a sample and we'll have them delivered.

COMPANY NAME *



Some thoughts...

- COVID has driven **innovation in PPE** marketplace for respirators and medical gloves.
- Postulate that US may now be ready to adopt international safety standards in current global climate of accord...

INTERNATIONAL
STANDARD

**ISO
18889**

First edition
2019-04

**Protective gloves for pesticide
operators and re-entry workers —
Performance requirements**

*Gant de protection pour les opérateurs manipulant des pesticides et
les travailleurs de rentrée — Exigences de performances*



Reference number
ISO 18889:2019(E)

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