Ready NW Eugene Chlorine Leak —Virtual Evacuation Exercise

Participant Guide

Winter and Spring 2022

This Participant Guide provides background information for participants. Emergencies such as the 2020 Holiday Farm Fire demonstrated our urgent need to prepare for future emergencies of all kinds.

This exercise reviews the emergency alert system, evacuation zones, and evacuation routes. Emergency survivors know the important role of nearby neighbors in sharing alerts, and knowing which neighbors may have special needs. This guide can be customized by using maps for the evacuation zones and evacuation routes in your neighborhood.

Welcome

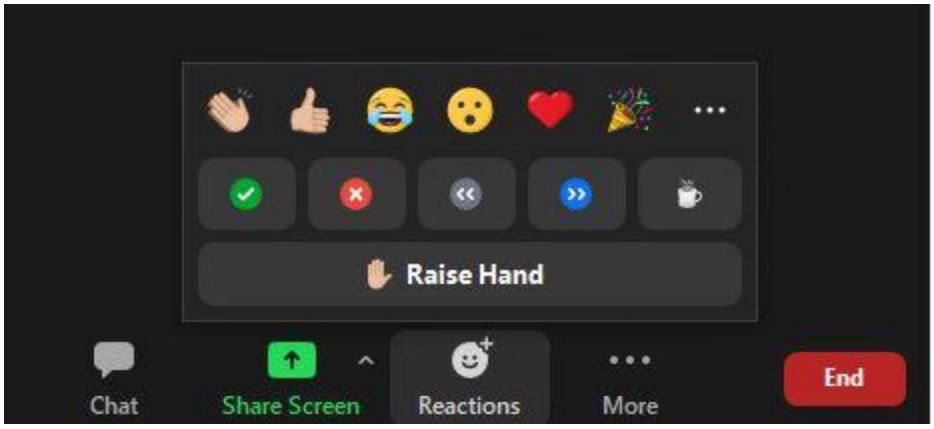
Facilitator: The role of the neighborhood preparedness team is to support nearby neighbors as we plan, practice, and improve. We conduct regular training exercises, building on the City of Eugene's two preparedness programs: *Map Your Neighborhood* and *Community Emergency Response Teams* (CERTs).

We conduct two main types of exercises: discussion exercises (also called "tabletop" exercises), and field exercises. Today's discussion exercise involves a simulated train derailment and chlorine gas leak in NW Eugene. The exercise has three parts:

1. Review Eugene's alert system and evacuation zone maps
2. Simulate a chlorine gas leak, with initial evacuation alerts, and new evacuation alerts as conditions change
3. Conclude the simulation with a worst-case scenario and discuss how we can better prepare

Each of the three parts can be completed in 30-45 minutes, allowing varying times for group discussion. We also invite those willing and interested to stay after the scheduled time to ask any questions that were not answered. We will share a recording of the session.

This virtual Zoom session will include Chat and voting using the Reactions button. We'll use the Green checkmark for "Yes" votes and the Red X for "No" votes. To vote, click on the smiley face button titled "Reactions," then Green for Yes or Red for No.



Introductions – Participants

(Please say your name, neighborhood, and your general area within the neighborhood - street name or intersection)

Introductions – Facilitators and Evaluators

(Please say your name, neighborhood, and your role during the exercise)

Module 1 – Alerts and Evacuation Zones

Audio file Transcript:

To assist during an evacuation, Eugene Springfield Fire has created Evacuation Zone Maps. Former Fire Chief and now Eugene City Councilor for Ward 8, Randy Groves.

City Councilor Randy Groves: The whole Eugene Springfield area has been broken into zones. There's a really nice color-coded map that shows where those zones are. My advice is, print that off and put it in your kit.

I really liked the neighborhood association system that we have in our city, because it gives us a chance to think autonomously within a geographical area and how we support one another. And part of that is not only knowing your family's needs, but knowing people on your street: Do you have elderly neighbors that are going to need assistance? Do you have people with special needs, disabilities that might need assistance as well?

Know Your Zone

Eugene Springfield Fire Evacuation Zone Map


Know Your Zone FAQ

What is an evacuation zone and how do I find out what my zone is?

How will I know when I am supposed to evacuate?

Narrator: During an emergency such as a wildfire or a chlorine leak, conditions can change rapidly. Randy said emergency managers don't use fixed evacuation routes, but decide on routes as appropriate for that incident.

City Councilor Randy Groves: It's hard to give a specific exact evacuation plan with routes and rally locations because you don't know ahead of time exactly what the emergency is. You'll receive information via the emergency communication network. You'll receive over your cell phone if you sign up for the county's emergency notification system, and then they give you specifics, they will say, for example, whatever your evacuation zone is and they'll list off the zones that need to evacuate. At that time, they will tell you, for example, what direction to head.

And so that's really how it comes together. One of the problems with having predesignated places to report to and directions and route of travel is, in a flood you don't want to go down to the low level areas. In a wildland fire in the hills, you don't want to get up into the hills. So if you have one specific plan for evacuation, it doesn't fit every emergency.

So the main thing is knowing your evacuation zone, knowing how you're going to receive the information and at that point, figuring out the best route for you and your family. And I would encourage everybody to know multiple ways into and out of your residence, into and out of places you frequently visit, routes into and out of places you work.

Narrator: If you're not already signed up for alerts, please type your name in the chat and we can follow up with you after this meeting.

(End of audio clip)

Facilitator: I will now demonstrate where to find Lane County's alert system. If you are not already signed up and would like us to help you, please type your name in the chat and a Ready NW volunteer will follow up with you.

> *If any participants are NOT yet signed up for alerts, allow some time for them to add their name to the Zoom chat box.*

Facilitator: We will now review the online evacuation zone map.

> *Ask for a volunteer to provide an address. Interact with the evacuation zone map and demonstrate how to find the evacuation zone number for that address.*
>
> *Point out that the map identifies three levels, Alert Level One Get Ready, Level Two Get Set, and Level Three Go Now. Those who may need help or need more time to evacuate should consider leaving before the Go Now: perhaps at Level One Get Ready or Level Two Get Set.*

Facilitator: As Randy Groves said, emergency managers may block access to some routes if there is a hazard. It is worth taking some time to review multiple routes to and from your home.

> *Use Google Maps to identify multiple evacuation routes. We may need to adjust our direction of evacuation based on the threats and hazards present at that time.*

Facilitator: Neighbors have a very important role to play during emergencies. Professional responders are often overwhelmed with requests and unable to respond everywhere at once. In these situations, we are most likely to be helped by persons who happen to be physically near us at that moment - neighbors for those who are at home, and co-workers for those who are at work. In reviewing local incidents, such as recent power outages, ice storm, snow storms, and the Holiday Farm Fire, we learned:

- In many cases, neighbors first learned about the need to evacuate from other nearby neighbors
- Nearby neighbors often knew of those with special needs and were able to help them

Neighbors also play an important role as the community begins to recover from the incident. As we also heard from those who experienced the worst-case scenario:

- Some people experienced a recurring trauma whenever they returned to the home site
- Neighbors play an important role in the long-term recovery, especially by reviewing the event and preparing for our next emergency.

To summarize, Module One introduced alerts, evacuation zones numbers, and the important role of neighbors in the early stages of an emergency. The next part, Module Two, simulates the emergency.

Module 2 - Simulated Chlorine Leak Incident

Scenario: It is a mid-August midafternoon and for the last two weeks high temperatures in Eugene have hovered in the high 90s-low 100s. There is a light breeze from the north, less than 5 m.p.h., with a new weather front moving in from the southwest with slightly stronger winds, 5-10 m.p.h..

A four-engine freight train pulling 42 cars, including several with hazardous materials, is leaving the Union Pacific yard in the vicinity of Cornwall and NW Expressway when a section of rail splits in the extreme heat and the first freight car derails. Passersby hear the screech of the locomotive's wheels as the emergency brakes are applied. They watch as the first car pulls several other cars off the tracks before the train can come to a stop.

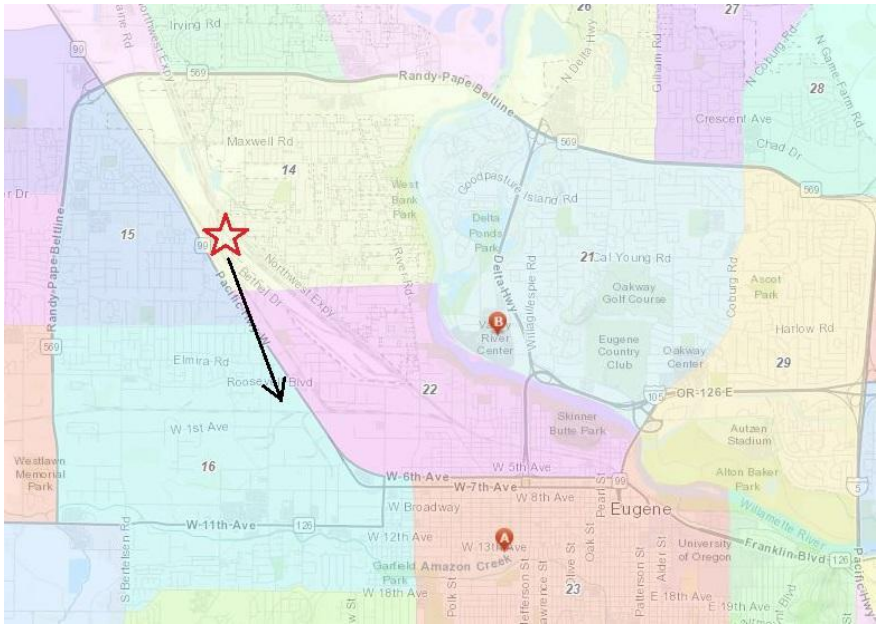
911 starts receiving multiple calls about a greenish-yellow cloud spreading slowly near the train wreck. Some drivers pulled over to take pictures or videos. A local TV news crew reporting live from the other edge of the cloud on Bethel Drive. They fled, with the reporter covering her face with her hands, coughing violently.

People driving through the area with car windows open are complaining of burning eyes and nose, lung irritation and inflammation, sore throats, difficulty breathing, wheezing, coughing up yellow or green sputum, nose bleeds, headaches and dizziness, depression, and anxiety.

First responders start traffic control and evacuations. They set up roadblocks to prevent drivers from entering the greenish-yellow cloud, which is spreading slowly to the south. The Public Information Officers brief the media and update Emergency Alert System (EAS) messages including protective measures for the public: sheltering in place for those already within the plume; evacuation if it is safe to do so, that is, without entering the gas cloud.

News announcer: **This is an exercise.** One person is dead, and dozens are sick, after a train derails in Northwest Eugene. Based on reports, emergency managers believe chlorine gas is leaking from one or more of the derailed tanker cars.

Emergency managers have issued a Level Three "Go Now If Safe" for Evacuation Zone 14. They have also issued a Level Two "Get Set" evacuation notice for Zones 15, 16, and 22. All other zones in NW Eugene are at Level One "Get Ready." This includes all zones north or west of the Beltline.



Avoid using Highway 99 and the Northwest Expressway - traffic is being blocked to prevent people from driving into the toxic gas cloud.

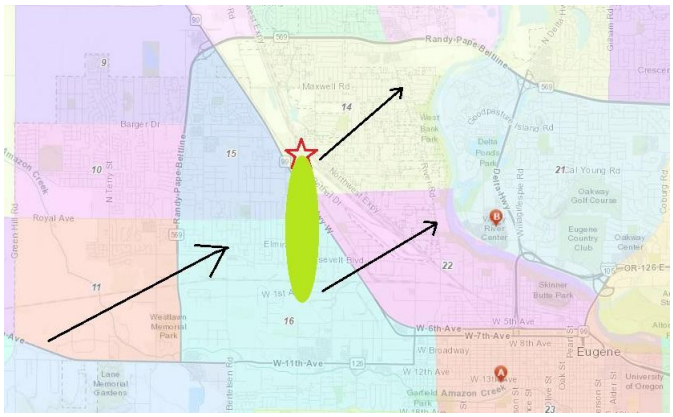
This cloud is extremely dangerous. Do not enter the cloud or breathe the yellow-greenish gas. If the cloud is approaching your home, seal all windows and doors as best you can, and shelter in place. Listen for further alerts, and be ready to evacuate your home if it is safe to do so.

Once again, Level Three Go Now For Zone 14. Level Two Get Set evacuation alerts for Zones 15, 16, and 22. All other zones in NW Eugene are on Level One Get Ready. **This is an exercise.**

Questions

1. Without warning, emergency managers issued a Level Three Go Now evacuation alert. We're going to vote. Please select the Green check mark for Yes, and the Red check mark for No: Who can evacuate from their home at a moment's notice?

   "Yes" probably means you have a go bag near your car, and can load your car quickly with what you will need for the next 3-7 days: medications, identification, important documents, cash, enough gas in the tank in case you have to sit in a line of traffic, and any pets. (Take a moment to vote - show results - discuss.)
2. How can we ensure that ***all*** nearby neighbors know about this alert?
3. Do any of you have nearby neighbors with special needs? How can we safely notify them of the emergency or help them prepare to shelter in place?



Changing conditions, new evacuation alert

News announcer: This is an exercise. Large parts of Northwest Eugene are now under evacuation orders as a derailed freight train leaks deadly chlorine gas. Authorities have announced a "Go Now!" Level Three Evacuation Alert for Zones 14, 15, 16, and 22.

With winds shifting and gaining strength, authorities have also issued a Level Two Be Ready Evacuation Alert for Zones 21 and 23.

All zones north or west of the Beltline are under Level One Be Ready. Those zone numbers north and west of the Beltline are 8, 9, 10, 11, 12, 13, 20, and 26. **This is an Exercise.**

Questions

4. Some evacuation zones are at Level One, Level Two, and Level Three. After this change, who knows the current alert level for your home's evacuation zone? Use the Green check mark for Yes, and the Red check mark for no. (Take a moment to vote - show results - discuss.)

Module 3 — Post event recovery begins

News announcer: This is an exercise. Authorities have completed their first survey of the areas affected by the chlorine leak. Several older residents who live alone did not hear about the danger, suffered severe respiratory damage from breathing the gas, and subsequently passed away. Dozens of pets, especially dogs and large animals, were found dead within the gas plume. Over a thousand people reported symptoms at Eugene-Springfield medical facilities. **This is an exercise.**

Questions

1. Considering the worst-case scenario, how might we better prepare to prevent fatalities, including pet fatalities?

Facilitator: Any more questions? Additional opportunities for training with Ready NW (*Introduce any local CERT participants in the meeting)* Evaluation Forms are available online.

Participant Feedback

Exercise Date: _____ **Facilitator:** _____

Participant Name / Email: _____

1. Please rate, on a scale of 1 to 5, your overall assessment of the exercise relative to the statements provided below, with 1 indicating strong disagreement with the statement, and 5 indicating strong agreement.

Assessment Factor	Strongly Disagree				Strongly Agree
The exercise was well structured and organized.	1	2	3	4	5
The exercise scenario(s) was plausible and realistic.	1	2	3	4	5
The exercise documentation provided to assist in preparing for and participating in the exercise was useful.	1	2	3	4	5
The speed and tempo of the exercise was appropriate (not too fast, not too slow)	1	2	3	4	5
The exercise helped me review personal preparedness (go bags, alerts, evacuation zones and routes).	1	2	3	4	5
I am signed up to receive emergency alerts	1	2	3	4	5
I know my evacuation zones and routes	1	2	3	4	5
This exercise encouraged me to think about how to help nearby neighbors with special needs	1	2	3	4	5
After this exercise, I will be better prepared to evacuate myself and others safely	1	2	3	4	5

2. Based on today's exercise, please list observed key strengths of our group.

3. Based on today's exercise, please list areas for improvement for our group.

4. Please recommend improvements to this exercise and / or future exercises.

Shelter-in-Place for **Chemical Hazard**

If told <u>not</u> to evacuate or it is too late to evacuate

When disaster strikes, it may be safer to stay in your home, place of employment, or other location. Learn where to go, what to do, and how long you should shelter-in-place for the hazards in your area.

Chemical agents are poisonous vapors, aerosols, liquids and solids that have toxic effects on people, animals or plants.

Take Additional Safety Measures

<u>Go inside</u> as quickly as possible. Bring any pets indoors.

<u>Lock</u> all doors and windows for a better seal.

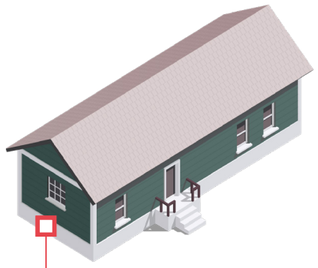
<u>Turn off</u> the air conditioner or heater, all fans, close the fireplace damper and any other place that air can come in from outside.

If available, <u>tape</u> plastic over window(s) in the internal room you are sheltering. Use duct tape around the windows and doors and make an unbroken seal. Tape over vents and seal any electrical outlets.

Do not drink water from the tap. <u>Stored</u> water will be safer.

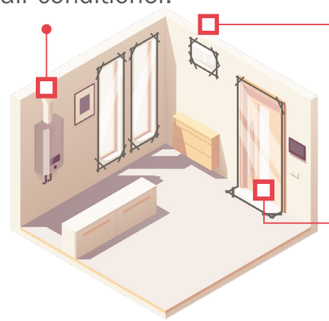
<u>Listen</u> for current emergency information and instructions from authorities.

If you are in a **Manufactured or Mobile Home**



Stay inside your home. Lock windows and doors for a better seal.

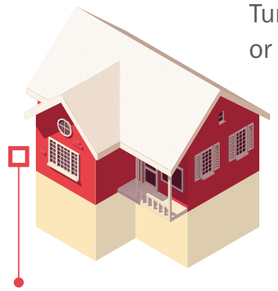
Turn off all fans, heater or air conditioner.



Use duct tape around the windows and doors and make an unbroken seal.

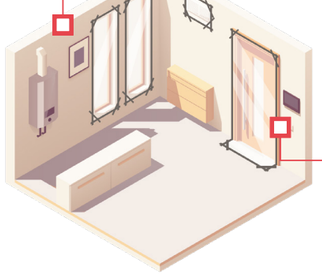
Tape plastic over any windows in the room.

If you are in a **1- or 2-Story Building** May have an attic and/or basement



Stay inside your home. Lock windows and doors for a better seal.

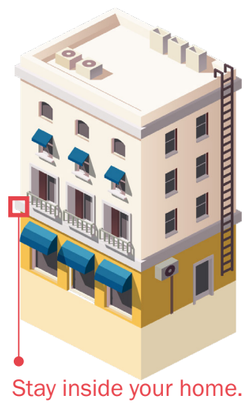
Turn off all fans, heater or air conditioner.



Use duct tape around the windows and doors and make an unbroken seal.

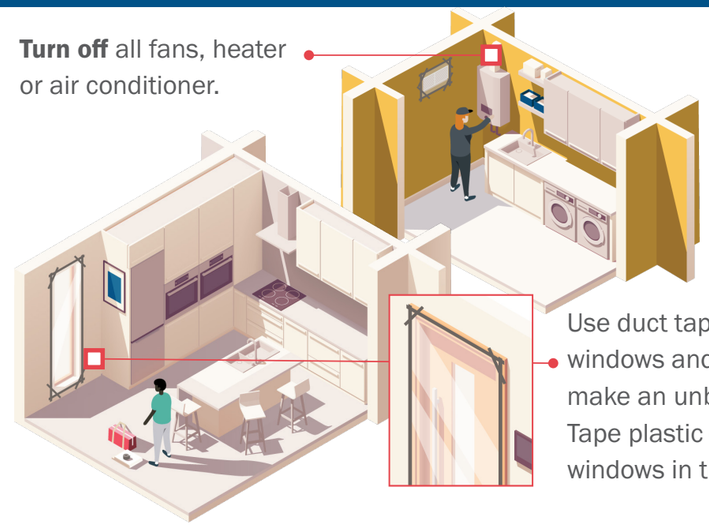
Tape plastic over any windows in the room.

If you are in a **Multistory Building** Includes schools, apartments, and offices



Stay inside your home. Lock windows and doors for a better seal.

Turn off all fans, heater or air conditioner.



Use duct tape around the windows and doors and make an unbroken seal. Tape plastic over any windows in the room.

How long to shelter-in-place?

A shelter-in-place will last approximately 12 hours or less, rarely will it go longer.

Visit **https://community.fema.gov/ProtectiveActions/s/** for more information.

FEMA

Facts about Chlorine

What chlorine is

- Chlorine is an element used in industry and found in some household products.
- Chlorine is sometimes in the form of a poisonous gas. Chlorine gas can be pressurized and cooled to change it into a liquid so that it can be shipped and stored. When liquid chlorine is released, it quickly turns into a gas that stays close to the ground and spreads rapidly.
- Chlorine gas can be recognized by its pungent, irritating odor, which is like the odor of bleach. The strong smell may provide adequate warning to people that they are exposed.
- Chlorine gas appears to be yellow-green in color.
- Chlorine itself is not flammable, but it can react explosively or form explosive compounds with other chemicals such as turpentine and ammonia.

Where chlorine is found and how it is used

- Chlorine is one of the most commonly manufactured chemicals in the United States. Its most important use is as a bleach in the manufacture of paper and cloth, but it is also used to make pesticides (insect killers), rubber, and solvents.
- Chlorine is used in drinking water and swimming pool water to kill harmful bacteria. It is also as used as part of the sanitation process for industrial waste and sewage.
- Household chlorine bleach can release chlorine gas if it is mixed with certain other cleaning agents.
- Chlorine was used during World War I as a choking (pulmonary) agent.

How people can be exposed to chlorine

- People's risk for exposure depends on how close they are to the place where the chlorine was released.
- If chlorine gas is released into the air, people may be exposed through skin contact or eye contact. They also may be exposed by breathing air that contains chlorine.
- If chlorine liquid is released into water, people may be exposed by touching or drinking water that contains chlorine.
- If chlorine liquid comes into contact with food, people may be exposed by eating the contaminated food.
- Chlorine gas is heavier than air, so it would settle in low-lying areas.

How chlorine works

- The extent of poisoning caused by chlorine depends on the amount of chlorine a person is exposed to, how the person was exposed, and the length of time of the exposure.
- When chlorine gas comes into contact with moist tissues such as the eyes, throat, and lungs, an acid is produced that can damage these tissues.

Immediate signs and symptoms of chlorine exposure

- During or immediately after exposure to dangerous concentrations of chlorine, the following signs and symptoms may develop:
    - Blurred vision
    - Burning pain, redness, and blisters on the skin if exposed to gas. Skin injuries similar to frostbite can occur if it is exposed to liquid chlorine
    - Burning sensation in the nose, throat, and eyes
    - Coughing
    - Chest tightness
    - Difficulty breathing or shortness of breath. Thesemay appear immediately if high concentrations of chlorine gas are inhaled, or they may be delayed if low concentrations of chlorine gas are inhaled.
    - Fluid in the lungs (pulmonary edema) that may be delayed for a few hours
    - Nausea and vomiting
    - Watery eyes
    - Wheezing
- Showing these signs or symptoms does not necessarily mean that a person has been exposed to chlorine.

What the long-term health effects are

- Long-term complications may occur after breathing in high concentrations of chlorine. Complications are more likely to be seen in people who develop severe health problems such as fluid in the lungs (pulmonary edema) following the initial exposure.

How people can protect themselves, and what they should do if they are exposed to chlorine

- Leave the area where the chlorine was released and get to fresh air. Quickly moving to an area where fresh air is available is highly effective in reducing exposure to chlorine.
    - If the chlorine release was outdoors, move away from the area where the chlorine was released. Go to the highest ground possible, because chlorine is heavier than air and will sink to low-lying areas.
    - If the chlorine release was indoors, get out of the building.

- If you think you may have been exposed, remove your clothing, rapidly wash your entire body with soap and water, and get medical care as quickly as possible.
- *Removing and disposing of clothing:*
    - Quickly take off clothing that has liquid chlorine on it. Any clothing that has to be pulled over the head should be cut off the body instead of pulled over the head. If possible, seal the clothing in a plastic bag. Then seal the first plastic bag in a second plastic bag. Removing and sealing the clothing in this way will help protect you and other people from any chemicals that might be on your clothes.
    - If you placed your clothes in plastic bags, inform either the local or state health department or emergency personnel upon their arrival. Do not handle the plastic bags.
    - If you are helping other people remove their clothing, try to avoid touching any contaminated areas, and remove the clothing as quickly as possible.
- *Washing the body:*
    - As quickly as possible, wash your entire body with large amounts of soap and water. Washing with soap and water will help protect people from any chemicals on their bodies.
    - If your eyes are burning or your vision is blurred, rinse your eyes with plain water for 10 to 15 minutes. If you wear contacts, remove them before rinsing your eyes, and place them in the bags with the contaminated clothing. Do not put the contacts back in your eyes. You should dispose of them even if you do not wear disposable contacts. If you wear eyeglasses, wash them with soap and water. You can put the eyeglasses back on after you wash them.
- If you have swallowed (ingested) chlorine, do not induce vomiting or drink fluids.
- Seek medical attention right away. Consider dialing 911 and explaining what has happened.

How chlorine exposure is treated

No antidote exists for chlorine exposure. Treatment consists of removing the chlorine from the body as soon as possible and providing supportive medical care such as inhaled breathing treatments for wheezing in a hospital setting.

How people can get more information about chlorine

People can contact one of the following:

- Regional poison control center: 1-800-222-1222
- Centers for Disease Control and Prevention
    - Public Response Hotline (CDC)
        - 800-CDC-INFO
        - 888-232-6348 (TTY)
    - E-mail inquiries: cdcinfo@cdc.gov

- Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH), Pocket Guide to Chemical Hazards