

GUIDE TO

Safe and Effective Use of Chemicals for Crop Production

The Feed the Future Innovation Lab for Small Scale Irrigation (ILSSI) is a research-fordevelopment project led by the Norman Borlaug Institute for International Agriculture at Texas A&M University. The project aims to contribute to an increase of profitable, sustainable and gender-sensitive irrigation to support inclusive agricultural growth, resilient food systems, and nutrition and health outcomes, particularly for vulnerable populations.

FEED THE FUTURE INNOVATION LAB FOR SMALL SCALE IRRIGATION



Grow Healthy Crops

Careful selection of chemicals avoids waste, saves money, and grows healthy crops.



Get Good Advice

Use chemicals only when needed.

Before buying chemicals, get advice from authorized retailers, or your extension officer.



Buy Genuine Chemicals

Buy from registered, known, certified agrodealers and distributors.

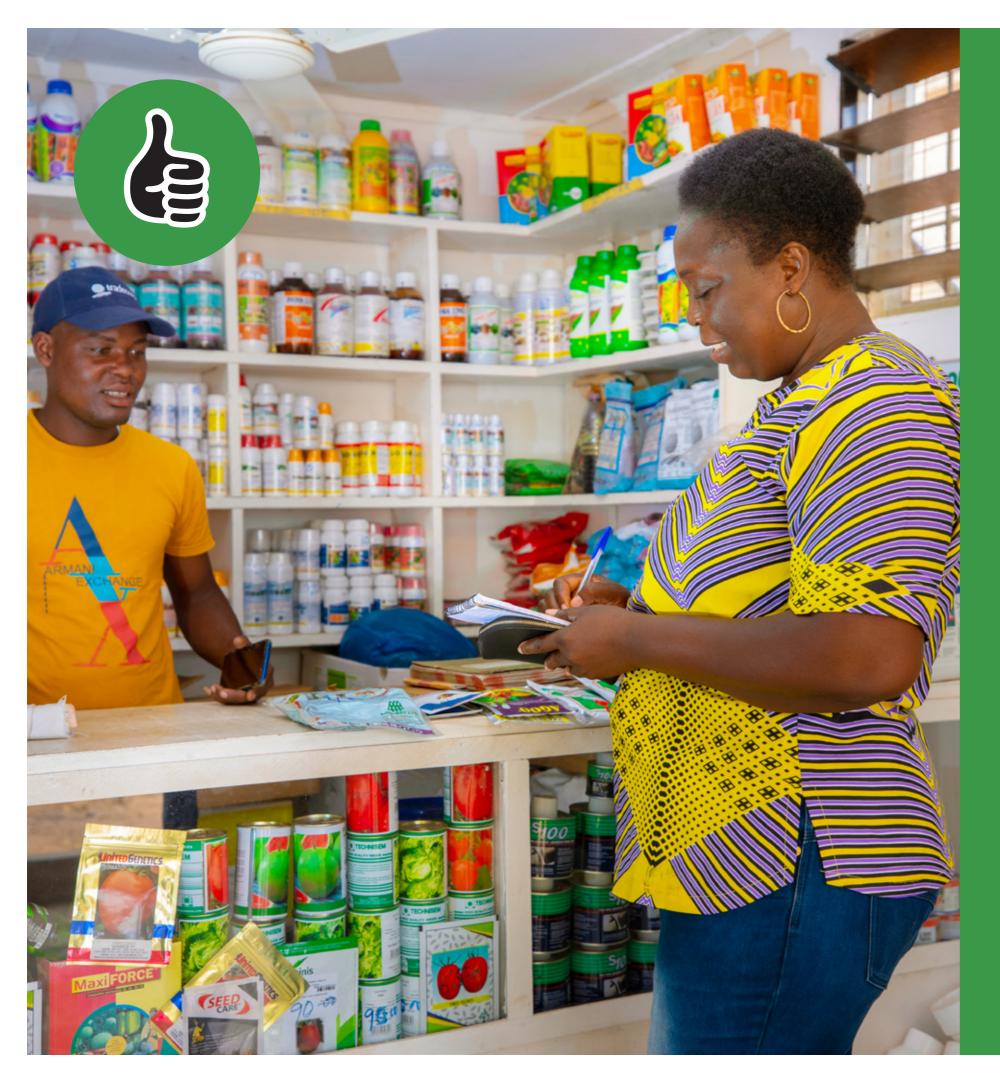
Counterfeit chemicals
will not work well and are
a waste of money.



Buy Labeled Chemicals

Do not buy or use chemicals that are not in their original packaging.

You may not be buying a genuine product. It might not work, and it could be dangerous to human, animal, and plant health.



Keep Seller Contacts

Keep the seller's contact information.

If accidents happen, sellers can provide information that will save lives.



Do Not Buy Extra

Buy only the amount you need.

It is better not to store or dispose of extra unused chemicals.



Buy Fresh Chemicals

Do not buy expired products.

They may not be effective or may have become dangerous.



Buy Sealed Packages

Do not buy packets, bottles, or containers that are broken or have holes. Instead, buy chemicals that are sealed in their original packaging.

Unsealed chemicals may spill near people or animals and cause poisoning.



Never Remove the Labels

Store agricultural chemicals in original packages with original labels and information.

The labels are essential for proper use or in case someone is poisoned.



Store Correctly

Follow storage instructions according to the sales agent or package directions.

Correct storage avoids
waste, saves money, and
reduces risk of poisoning.



Store Carefully

Store chemicals in a locked and well-ventilated room or cupboard.

This will help keep children and animals safe.

If you do not have a secure place, store chemicals up high, out of reach.



Store Safely

Keep all chemicals away from the food, drinks, and fire.

Chemicals can poison your food and drinks.

Some chemicals catch fire easily.



Store In Cool Dry Place

Store chemicals away from heat and water.

Heat and water may cause them to become dangerous.



Use Original Container

Do not put chemicals in food and drink containers.

If the container looks
appealing, or looks like food
or drink, the chemicals may
poison children or others.

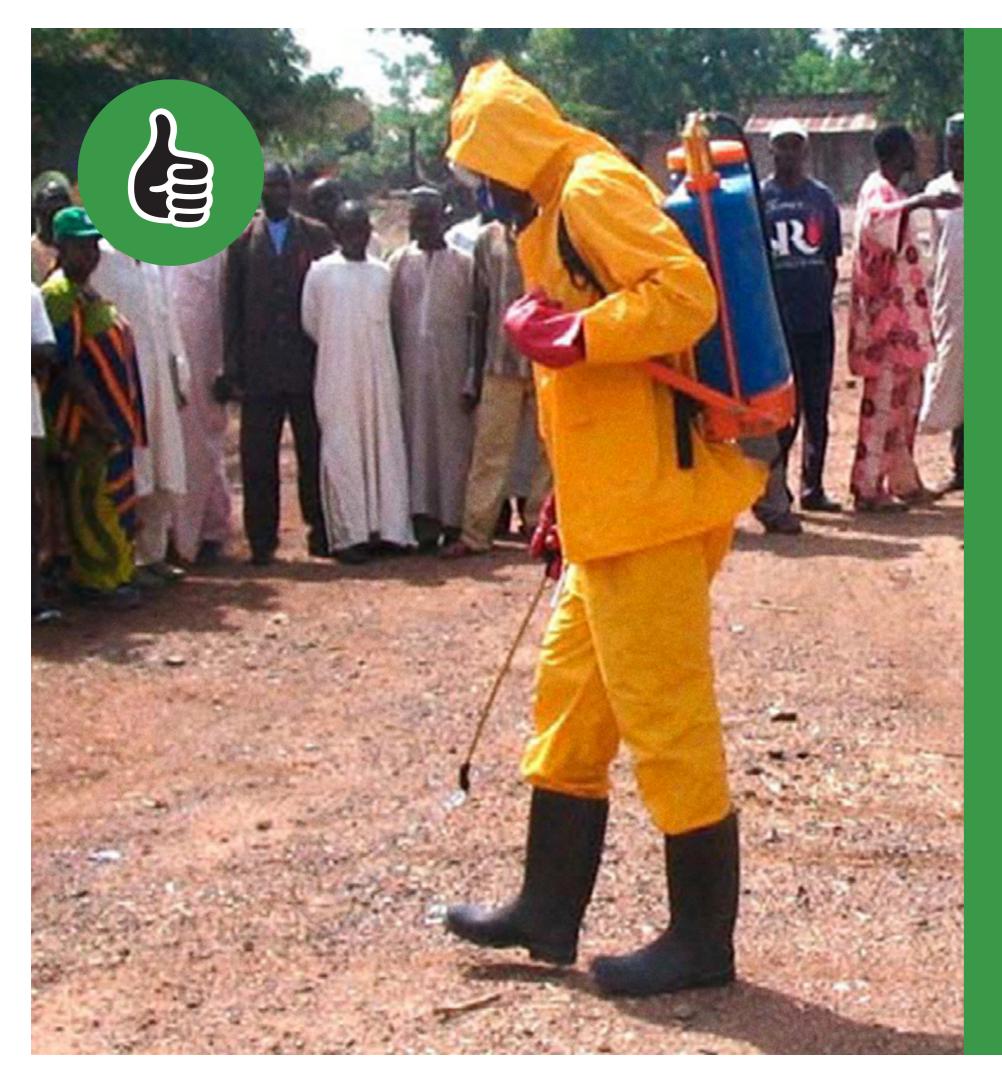


Gear Up Before Mixing

Put on protective clothing before opening chemicals and while you mix them.

Continue to wear protective clothing during application and until you have finished cleanup.

Do this to protect your health and avoid accidental poisoning.



Wear Correct Clothing

Wear a long-sleeved shirt,
long pants, boots or full shoes
(waterproof is best), long socks,
waterproof gloves, goggles or
spectacles, a plastic apron,
a nose mask, and overalls.

Also, to protect your head and face, men should wear a hat, and women should wear their hair back with a scarf or hat.



Check your Clothing

Check protective clothing for any holes before use.

Replace damaged gear to avoid accidental contamination.



Keep Your Protective Clothing Separate

Use your protective clothing
ONLY for chemical mixing,
application, and cleanup.

Store your protective clothing separately from other clothes.



Follow Mixing Instructions

Carefully follow the mixing instructions according to the sales agent or package directions.

Correct mixing avoids
waste, saves money,
reduces risk of poisoning,
and grows healthy crops.



Do Not Mix At Home

Always mix chemicals at the time and place you are prepared to use them, never at the house or compound.

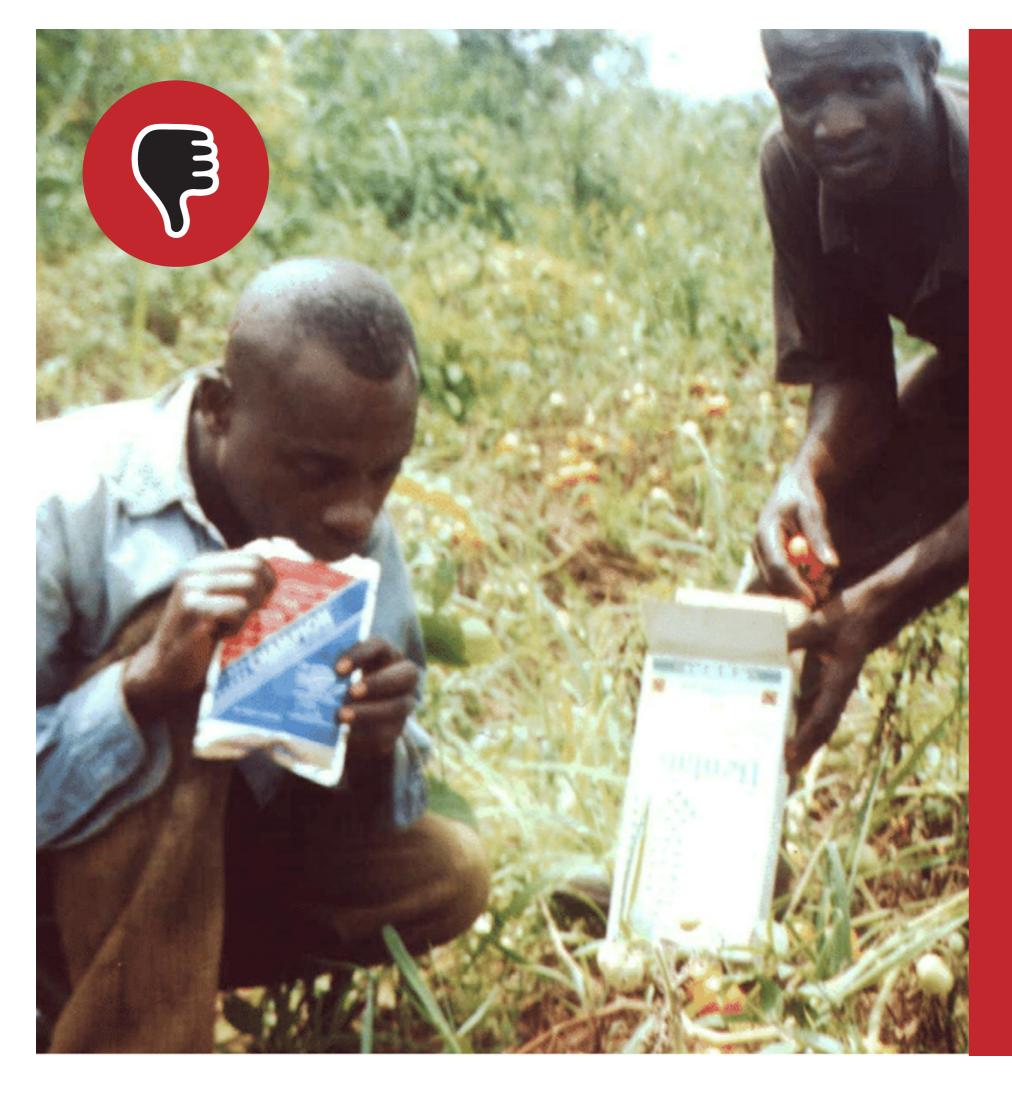
Keep chemicals away
from your family to reduce
their risk of poisoning.



Open Carefully

Use a tool, such as a knife or scissors, to carefully open the chemical container.

Open packaging carefully to avoid spills or poisoning.



Never Bite Packaging

Do not use your teeth to open a package of chemicals.

Even small amounts of chemicals can make you sick.



Rinse Carefully

After mixing, TRIPLE-RINSE
the empty chemical container
into the spray tank.

Careful rinsing will help you save money and avoid wasting any of the chemicals.

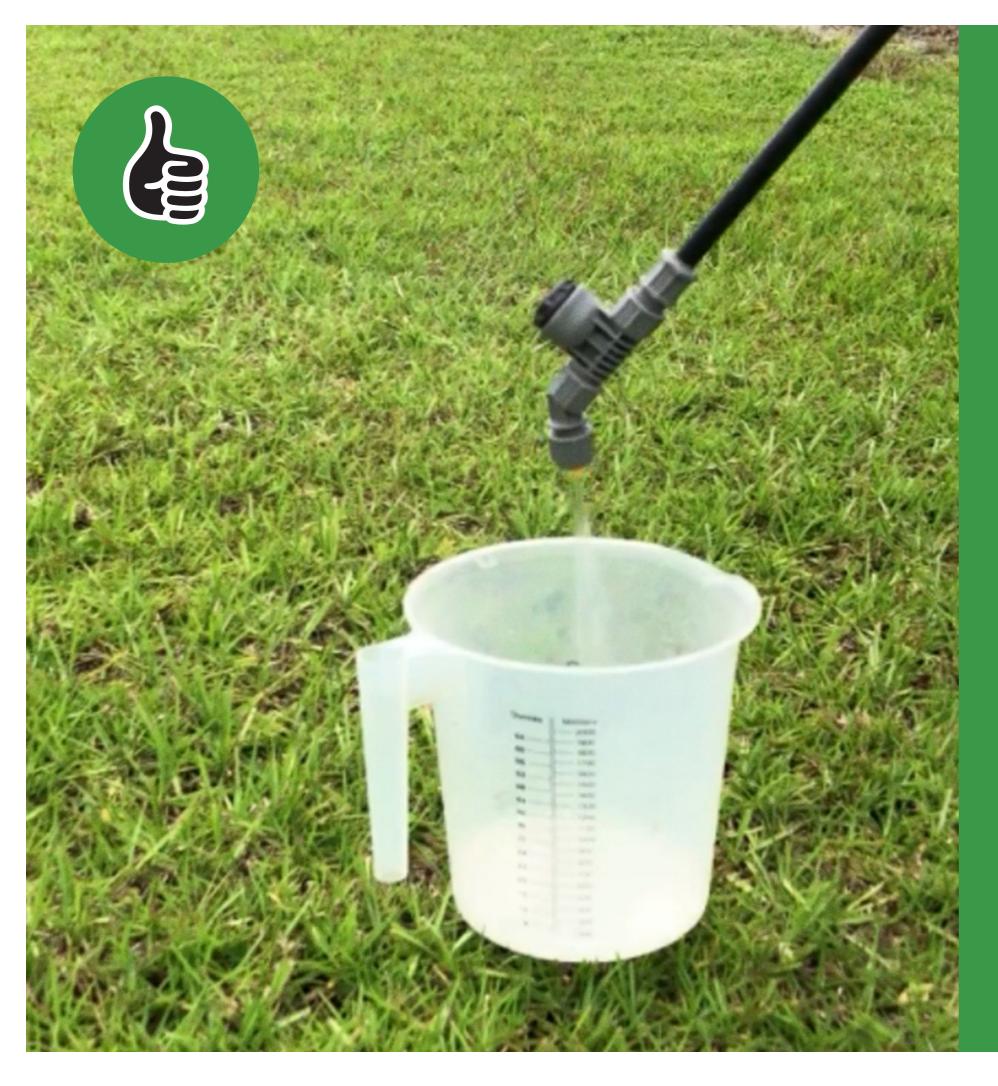


Never Taste Chemicals

Never put chemicals or spray in your mouth.

Tasting chemicals is not a safe or reliable way to test if the chemical mix is strong.

Even if you spit the chemical out after tasting, you will still be poisoned.



Calibrate Your Equipment

Check your sprayer regularly for leaks.

Ensure that the nozzle is working correctly.

Correct application avoids waste, saves money, and grows healthy crops.



Use Proper Equipment

Use proper equipment when applying chemicals.

Makeshift gear is wasteful and dangerous.



Apply Correctly

Follow application instructions according to the sales agent or package directions.

Correct application avoids
waste, saves money,
reduces risk of poisoning,
and grows healthy crops.



Do Not Spray Mid-day

Spray early in the morning or late in the evening when it is cooler and less windy.

It will be easier to get more of the chemicals where they are useful, saving you time and money as well as reducing dangerous over-spray.



Keep Your Hands Away from Your Mouth

Do not eat, drink, smoke, or chew tobacco while spraying.

You may poison yourself by accidentally transferring chemicals from your hands to your mouth.



Do Not Spray Near Water

Do not spray chemicals near water sources.

Chemicals will poison the water supply and anyone who touches the water.



Clean Your Equipment

Before removing your protective clothing, wash the spray equipment.

Wash equipment well away from rivers and streams.



Remove Your Gear

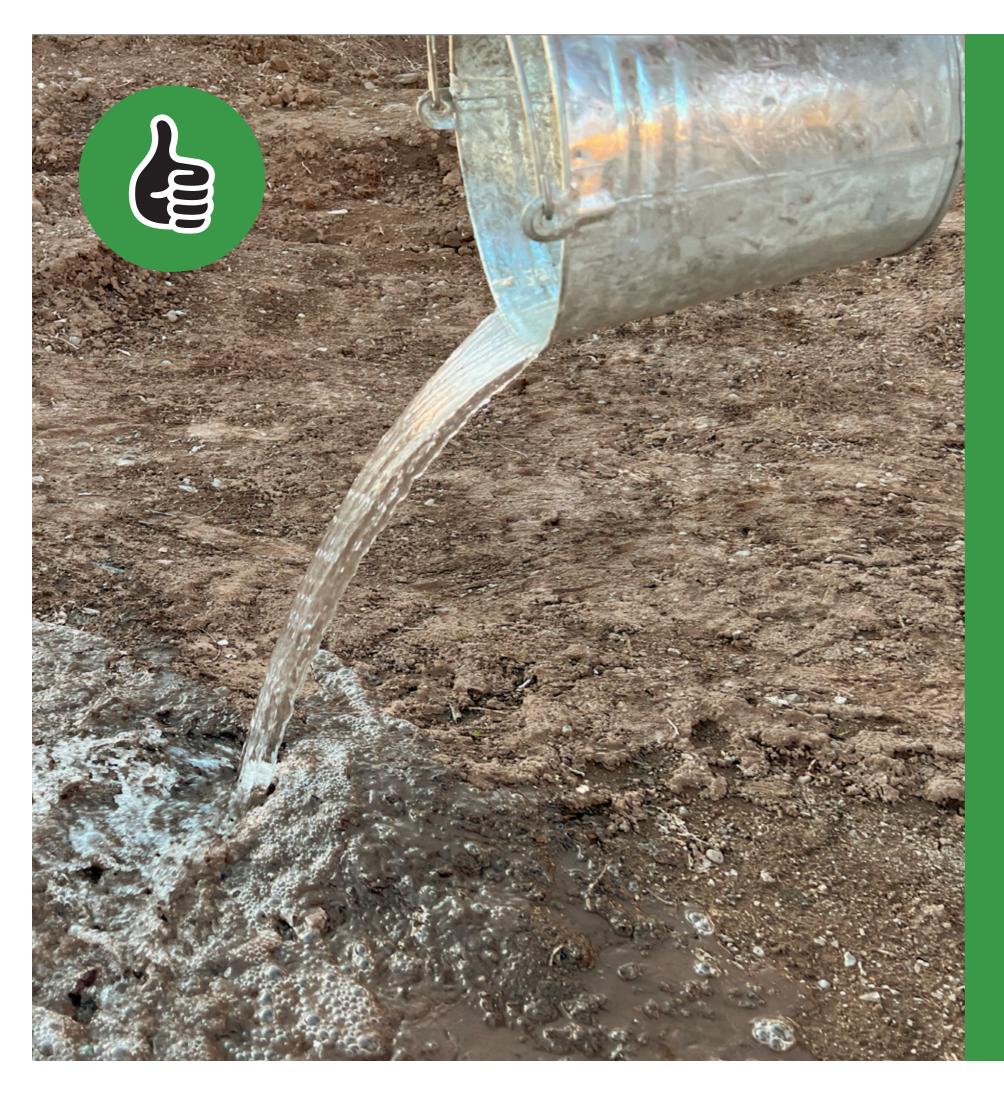
After you have finished using chemicals and cleaning your equipment, carefully take off your protective clothing and gear.



Clean Yourself

Wash your entire body well with soap and water.

Wash your hands, head, and feet, especially thoroughly.



Safely Dispose of Wash Water

Do not pour wash water on the soil near a well or dugout or a green area. Instead, dump it in a dry place away from your home, livestock, and water sources.

Correct wash water disposal reduces the risk of poisoning livestock and people.



Wash Your Protective Clothing Separately

Wash, dry, and store protective clothing separately from your other laundry.

ONLY use your protective clothing for chemical mixing, application, and cleanup.



Clean Up First

Do not eat, drink, smoke, or chew tobacco until you are entirely done cleaning up.

You may poison yourself by accidentally transferring chemicals from your hands to your mouth.



Throw Away Disposables

Do not reuse single-use items.

Properly dispose of your nose
mask, rubber gloves, broken
equipment, and any other
contaminated single-use items.



Puncture Used Containers

After cleanup, puncture all empty chemical containers before disposal so that they cannot be used for water or food storage.



Dispose of Containers

Never leave empty chemical containers in the field.

Do not put empty chemical containers in the rubbish.

You must not burn or bury empty containers.



Collect Containers

Put all empty chemical containers in a heavy sack until you can return them to the sales agent, project leader, or FAO collection point.



Never Reuse Containers

Dispose of empty chemical containers properly to keep yourself, your family, neighbors, and animals safe.

It is important that no one uses empty chemical containers for food, drinks, kerosene, or livestock.



Return Containers

Return all used original chemical containers to the sales agent, project leader, or FAO collection point.

NEVER remove labels from chemical containers.



Rinse Skin Immediately

If you get chemicals on your skin, immediately wash the poison away with water and check the label for first aid instructions.



Get Prompt Medical Help

If you think you may have been exposed or poisoned, do not wait. Seek medical help immediately.

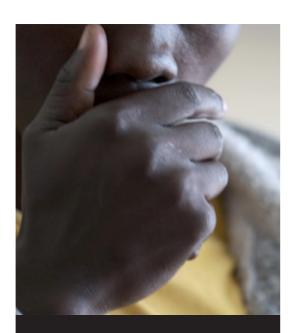
Bring the product label with you. A doctor or nurse will need the information on the label to provide proper medical care.



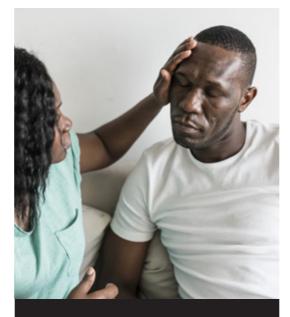
Watch for signs of exposure to chemicals.

If you think you may have been exposed or poisoned, do not wait. Seek medical help immediately.

Take the product label with you.



Painful breathing, coughing, sneezing, or catarrh



Fever, head pain, or dizziness



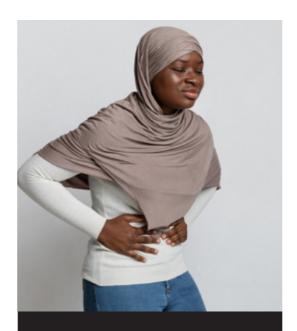
Skin rash, burning,

or other irritation

Eyes and nose burning



Painful sores



Vomiting, loss of appetite, or stomach pain





GENERAL WARNING

Symbol widely used to warn of danger, hazard, and the unexpected.

Corrosive

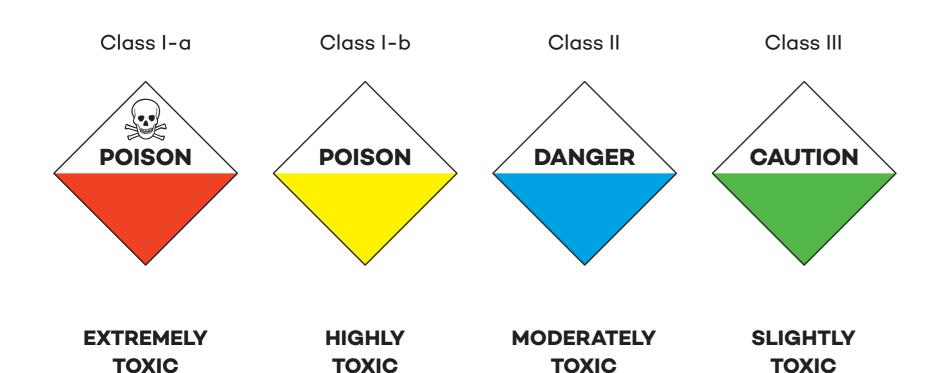
and Lethal

GENERAL POISON

European Union Standard Toxic Substance Symbol

Mild or

Slight Irritant



Severe

Irritant

Moderate

Irritant

Warning Labels

Watch for these and other warning labels that show the danger level and tell you how careful you need to be.

Chemicals are classified into systems created by governments and international organizations. But since there is no global system, the symbols can vary.













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