

A Healthy Home?

Presenter Information

Summary

Participants will:

- Analyze simulated tests for carbon monoxide, radon, mold, and lead.
- Explore ways a family can reduce their exposure to hazardous substances.

Core Concepts

This kit is designed to engage program participants in learning about the following core concepts:

- Hazardous substances in homes may create unhealthy environments.
- Tests for hazardous substances such as lead, carbon monoxide, radon, and mold spores are important because these substances are invisible.
- Actions should be taken to reduce exposures to potentially hazardous substances.

Presenters may need to provide further information that is appropriate for their program learning goals and for their participants.

Time Required

Approximately 50–60 minutes + discussion time

Each Kit Contains

- 2 **A Healthy Home?** kit instructions
- 2 **Carbon Monoxide Fact Sheets**
- 2 **Radon Fact Sheets**
- 2 **Mold Fact Sheets**
- 2 **Lead Fact Sheets**
- Diagram of **Smith Family Home**
- Bag with red and black beads
- Paint samples (simulated)
- Lead Test Solution (simulated)*
- 3 Lead test swabs (simulated)*

** Non-hazardous chemical mixtures are substituted as simulations of these substances.*

Presenter Provides

- One **A Healthy Home?** kit for each pair of participants
- Pencil or pen
- Paper towels for clean up

Warning: Choking Hazard

This Science Take-Out kit contains small parts. Do not allow children under the age of seven to have access to any kit components.

Resources

Presenters may need to provide further information regarding healthy homes that is appropriate for their program learning goals and for their participants. The following sites may be useful for program planning, updates, or background information:

- **A Healthy Home For Everyone: The Guide for Families and Individuals** – https://www.cdc.gov/nceh/lead/publications/final_companion_piece.pdf
- **Carbon Monoxide’s Impact on Indoor Air Quality** – <https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality>
- **Radon** – <https://www.epa.gov/radon>
- **Mold** – <https://www.epa.gov/mold>
- **Lead** – <https://www.epa.gov/lead>
- **Indoor Air Quality** – <https://www.epa.gov/indoor-air-quality-iaq/protect-indoor-air-quality-your-home>

Suggested Procedure

1. For each **pair** of participants, you should provide a flat work area, one kit, and the materials described in the “Presenter Provides” section (on page i). Each kit is meant to be shared by a pair of participants and includes two copies of materials, as needed.
2. Most presenters use this kit as part of a larger program on healthy homes that includes additional information appropriate to their audience. The resources section above provides ideas for follow-up components such as additional information and take-home handouts.
3. We strongly suggest use of the **A Healthy Home?** kit as an introductory activity. Ideally, this should be done with participants working in pairs to spark conversation and questions.
4. Explain to participants that they will be working in pairs to complete an introductory activity about healthy homes. *You may want to explain that this kit does not include all factors involved in maintaining a healthy home environment.*
5. Explain that this activity will NOT provide all of the information that participants should know or might want to know about healthy homes. The goals for the **A Healthy Home?** activity are simply to:
 - Provide a little background information about a healthy home environment (carbon monoxide, radon, mold, and lead).

- Give participants an opportunity to talk with each other about how a healthy home environment relates to them.
 - Encourage participants to think about questions they have about healthy homes.
6. Point out the disclaimer at the bottom of the Science Take-Out kit cover sheet. “The **A Healthy Home?** kit is not intended and should not be regarded as medical advice. Always seek the advice of a physician or other qualified health provider with any questions you may have regarding a health problem.”
 7. Explain that you understand participants may have questions about healthy homes. At the end of the activity, there will be an opportunity to discuss their questions.

NOTE FOR PRESENTERS

- *Presenters may choose to have participants complete the entire kit activity before providing additional information and answering questions.*

OR

- *Presenters may choose to provide additional information and answer questions after each part of the kit activity.*

8. Hand out one kit for each pair of participants. NOTE: There are 2 copies of the Participant Guide and the label in each kit bag. *You may want to inform participants that the “lead test solution” and “lead swabs” in the kit are not real. They are non-hazardous chemical mixtures substituted as simulations of these substances.*
9. Read the information in the Introduction on Page 1 aloud to the participants. Show participants the fact sheets that they will use as a source of information.
10. Encourage participants to jot down their questions about healthy homes in the box on page 6 of this activity. Show them where this box is before they start to work on the activity.
11. Ask participants to work with their partners to read and follow the kit instructions, discuss, and write their answers to the questions in the kit instructions.
12. After all participants have completed their kits, facilitate a group discussion of their answers to questions in the activity. Review the kit’s core concepts (see page i).
13. Cleanup: If kits are to be reused, see the *Reusing A Healthy Home? kits* information below. If kits will not be reused, then participants should put all kit materials into the kit bag. Discard kit bags in the trash. Participants should wash their hands after working with kit materials.

14. Provide additional information and answer participants' questions as appropriate for the audience and/or local community. Possible discussion questions might include:

- How might mold, radon, carbon monoxide, and lead hazards be different for different types of housing?
- How can you find out if your home has healthy levels of carbon monoxide, radon, mold, and lead?
- How can you protect people in your household from carbon monoxide, radon, mold, and lead?
- What other health hazards might be present in homes?

Helpful Hints

- We suggest using this activity as an introduction to the topic. Some participants may be uncomfortable with not having background or “the right answers” before they start. If you are doing the kit as part of a larger program, remind participants that you will provide more information and discuss their questions later; the kit is designed to get people thinking, interacting, and asking questions.
- Encourage participants to ask questions if they have difficulty understanding the activity instructions.
- Listening to the conversations as participants work will give you an opportunity to learn about participants' interests and concerns about healthy homes.
- You may find some participants are working more slowly and need questions answered or encouragement to move to the next step. If your program time is limited, you might suggest to participants how long to spend on each part of the activity.
- Let them go! For many groups, simply handing out the kits and encouraging the participants to work on their own will stimulate independent work and interactive discussion. For audiences with limited English reading skills, presenters may wish to read each kit step to the group.

Reusing *A Healthy Home?* kits

Kits may be refilled and reused. Presenters will need to instruct participants on how to handle clean-up and return of the re-usable kit materials. For example, presenters might provide the following information for participants:

Discard	Return to kit
<ul style="list-style-type: none">• Used Lead Test Swabs• Used paint samples	<ul style="list-style-type: none">• Carbon Monoxide Fact Sheets• Mold and Radon Fact Sheets• Lead Fact Sheets• Bag containing 3 red and 3 black beads• Diagram of the Smith Family Home• Tube of Lead Test Solution• Plastic bag for Lead Test Swabs

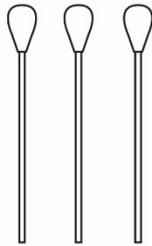
Note: It is not necessary to rinse or wash the Lead Test Solution tubes after use. Simply ask participants to close the lids on the tubes.

If you want participants to keep copies of any handouts from the kit, you will need to make additional copies of the handouts before you re-use the kits.

Refills for *A Healthy Home?* kits are available at www.sciencetakeout.com. The **10 Kit Refill Pack** includes the following materials:

- Instructions for refilling kits
- 15 mL of Lead Test Solution (simulated)
- Transfer pipet for refilling tubes
- 30 Lead Test Swabs (simulated)
- 10 strips of paint samples (simulated)

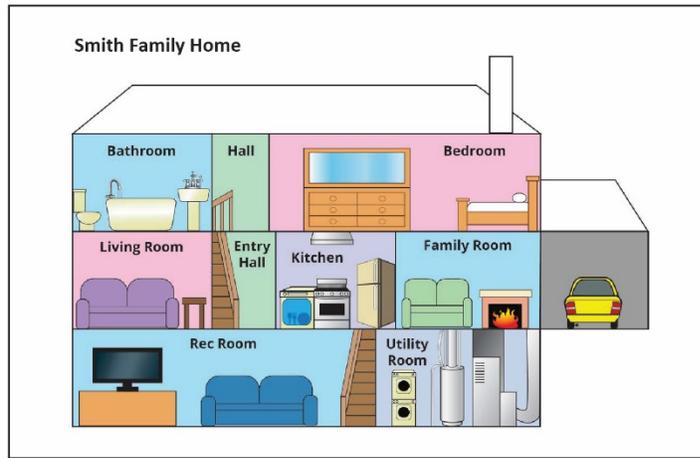
Kit Contents Quick Guide



Lead Test Swabs



Lead Test Solution



Beads



Carbon Monoxide Fact Sheet

What is carbon monoxide?

- Carbon monoxide, or CO, is an odorless, colorless gas.
- Carbon monoxide can be deadly because it blocks the transport of needed oxygen to all parts of the body.

Symptoms of carbon monoxide poisoning:

- The symptoms of low levels of CO exposure, such as headaches, dizziness, weakness, nausea, chest pain, and confusion, are similar to symptoms of other health problems.
- High levels of CO can cause loss of consciousness and death.

People are most at risk for death from CO poisoning when they are sleeping because they may not notice the symptoms of CO exposure.

Possible sources of carbon monoxide in the home:

Ways to prevent CO in your home:

- Have your furnace and chimney inspected each year.
- Never use a gas stove or oven to heat a home.
- Never leave the motor running in a vehicle parked in an enclosed or partially enclosed space, such as a garage (even if the garage door is open).
- Never run a generator, portable heater, or any gasoline-powered engine inside a basement, garage, or other enclosed structure.
- Never use a charcoal grill, barbecue, or portable camping stove inside a home, tent, or camper.

Carbon monoxide detectors alert you to:

- Install a battery-powered or battery back-up CO detector alarm in the basement and on every floor of your home.
- Read the manufacturer's recommendations for CO detector locations.
- CO detectors should be installed near each sleeping area of your home and near attached garages.
- Change the batteries in your CO detector every 6 months.
- Check the expiration date on your CO detectors because they usually last for only 5 to 7 years.
- Avoid putting CO detectors near fire burning appliances or in areas with high humidity, high temperatures, blowing air, or direct sunlight.
- If CO poisoning is suspected, you should open the windows, leave the building, and call emergency responders. Consult a health care professional right away.

Lead Fact Sheet

Protecting children from exposure to lead is important to their lifelong health.

It is important to test children's blood for lead at ages 1 and 2 and again every year if lead exposure is suspected.

Children under the age of six are most at risk because they use developing rapidly.

It is important to prevent lead exposure to children before they are born, because most effects of lead exposure occur before birth.

Protect children from lead exposure by identifying lead sources and taking steps to control or remove lead from a child's environment.

Lead paint and lead-contaminated dust are the most common sources of lead for risk to children.

Any home built before 1978 may contain lead paint.

Lead in soil can be a concern even with new lead paint, since dust can be blown from the ground through cracks and other holes in the foundation. If radon is trapped inside a home, it can build up to the same level.

Paints may also be exposed to lead in water, in soil, and in products imported from countries where lead is used.

Since lead dust is invisible, you can't tell if a lead-based paint job by looking.

Lead-based paint can be found in lead-based paint or in other lead-based products. However, it is easy to miss lead dust when doing the maintenance work on lead-based paint.

In some areas, the soil testing or health department may provide a lead test kit for the needed profession or agency.

Paints in a home built before 1978 is difficult to insure that your home has lead and you should have access to certified inspectors to test, abate, and test out.

If you live in a home built before 1978, it is important to check the home often to remove lead-containing dust.

Remove hazardous lead in a major room of your home, you should wear eye, face, and hand protection. Also, there are rules for lead-based paint removal.

You can reduce lead dust if you have a HEPA high-efficiency particulate (HEPA) vacuum.

Every week, use with water to keep lead from building up.

Avoid other sources of lead dust:

- Inspect your car's tires and top, which can use lead-containing materials and in household dust or soil outside the house. Tear off tires when removing the house.
- Prevent children from playing in the soil.
- Make sure that contractors who do renovation or painting before 1978 are certified and comply with the EPA's Renovation, Repair and Painting (RRP) rule.

Mold Fact Sheet

What is mold?

- Mold is a type of fungus that reproduces by making small spores that are released into the air.
- Mold grows best in warm, damp, and humid conditions.
- Mold can be found in areas of a home where humidity levels are high, such as basements, bathrooms, or areas where water is leaking.

Exposure to mold:

- Exposure to mold spores may cause upper respiratory tract symptoms such as runny nose, coughing, wheezing, and asthma.
- People who have allergies or asthma may be more sensitive to mold spores.

Testing for mold:

- Testing can be expensive if done by professionals, and it often does not change mold remediation actions.
- One-year-of mold kits may be available and may not identify types of mold that are particularly hazardous.

Ways to prevent mold growth in your home:

- Control moisture problems inside your home.
- Keep humidity levels at 30-50% by using an air conditioner or dehumidifier to remove excess moisture in the air.
- Install and use exhaust fans in the kitchen and bathrooms.
- Check for leaks and moisture around sinks and tubs.
- Do not use caulk in bathrooms or in damp basements.

If there is mold growth in your home:

- Fix moisture or water leakage problems.
- Remove mold growing on hard surfaces by using a detergent or soap water solution and a scrubbing tool.
- Consider removing and disposing porous materials such as paper and ceiling that are combined with mold.

Radon Fact Sheet

What is radon?

- Radon is a cancer-causing radioactive gas. You can't see radon, and you can't smell it or taste it.
- Radon gas comes from radioactive substances in the ground beneath a home.
- Radon can enter a home from the ground through cracks and other holes in the foundation. If radon is trapped inside a home, it can build up to the same level.

Exposure to radon:

- Exposure to radon is the second leading cause of lung cancer in the United States today.
- Only smoking causes more lung cancer deaths than radon.

Testing for radon:

- All homes should be tested for radon because radon can be found in every part of the country and in every type of home.
- Radon testing is the only way to know if you and your family are at risk from radon in your home.
- Radon testing is inexpensive and easy.
- There are many kinds of low-cost "do-it-yourself" radon test kits.
- Always use a qualified radon tester to do the testing for you.

If there is radon in your home:

- You should reduce the radon level in your home if the radon level is 4.0 picocuries of radon per liter of air (pCi/L) or higher.
- The cost of reducing radon levels in your home depends on how your home was built and the extent of the radon problem.
- Radon levels can be fixed by installing a radon mitigation system.
- Lower the radon levels requires technical knowledge and special skills.
- A qualified radon reduction contractor can study the radon problem in your home and help you pick the right treatment method.

Safety Information for Presenters

Parental or Adult Supervision Required

This kit should be used only under the supervision of an adult who is committed to ensuring that the safety precautions below, and in the specific laboratory activity, are followed.

Warning: Choking and Chemical Hazard

Science Take-Out kits contain small parts that could pose a choking hazard and chemicals that could be hazardous if ingested. Do not allow children under the age of seven to have access to any kit components. Safety Data Sheets (SDS) provide specific safety information regarding the chemical contents of the kits. SDS information for each kit is provided in the accompanying presenter instructions.

Chemicals Used in Science Take-Out Kits

Every effort has been made to reduce the use of hazardous chemicals in Science Take-Out kits. Most kits contain common household chemicals or chemicals that pose little or no risk.

Safety Goggles Recommended

We encourage participants to adopt safe lab practices, and wear safety goggles when performing laboratory activities involving chemicals. Safety goggles are not provided in Science Take-Out kits. They may be purchased online or from a hardware store.

General Safety Precautions

1. Work in a clean, uncluttered area. Cover the work area to protect the work surface.
2. Read and follow all instructions carefully.
3. Pay particular attention to following the specific safety precautions included in the kit instructions.
4. Do not use the contents of this kit for any other purpose beyond those described in the kit instructions.
5. Do not leave kits or kit parts where they could be used inappropriately by others.
6. Never taste or ingest any chemicals provided in the kit.
7. Do not eat, drink, or apply make-up or contact lenses while performing kit activities that use chemicals.
8. Wash your hands after performing kit activities that use chemicals.
9. Chemicals used in Science Take-Out experiments may stain or damage skin, clothing or work surfaces. If spills occur, wash the area immediately and thoroughly.
10. Kits may be refilled and reused. Kit components that are not reused may be discarded in regular trash.

A Healthy Home?

Introduction

Mr. and Mrs. Smith want to be certain that their home is a healthy environment for their two children, ages 2 and 6. They know that environmental health hazards are especially dangerous for young children.

Luckily, the town where the Smith family lives has a healthy homes program. This program trains volunteers to visit homes to identify indoor environmental health hazards and offer suggestions for creating a healthier home.

Healthy Homes Program



Good Health Begins at Home

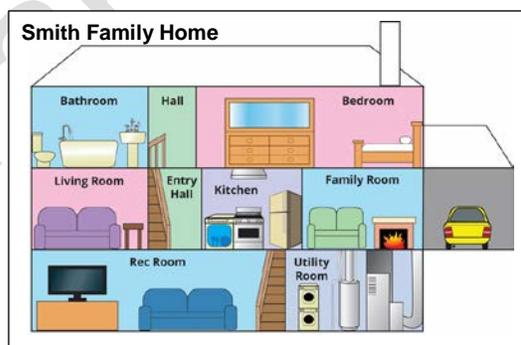
Learn how to make your
indoor environments
safe and healthy!

Part 1: Carbon Monoxide

The healthy homes volunteer noticed that the Smith family has only one carbon monoxide (CO) detector installed in the kitchen. The CO detector needed new batteries. There was no installation date on the CO detector, so the volunteer could not tell if it should be replaced. He recommended that the Smiths install new carbon monoxide detectors as soon as possible.

Use the **Carbon Monoxide Fact Sheet** in your kit to answer questions 1 through 4.

1. Why is CO (carbon monoxide) harmful?
2. Why might people not realize that their home has dangerous carbon monoxide levels?
3. Mrs. Smith purchased three carbon monoxide detectors. She wants to know where they should be installed. Your kit contains a large diagram of the **Smith Family Home** and a bag with beads. Place the three **red** beads on the three places in the home where you think the carbon monoxide detectors should be installed.



Red beads = CO detector locations.

4. What are some things that Mr. and Mrs. Smith can do to prevent exposure to carbon monoxide in their home?

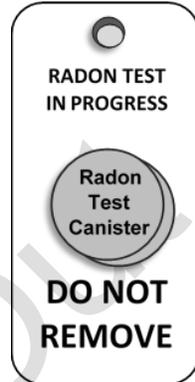
Part 2: Radon

The healthy homes volunteer notes that the Smith's home has not been tested for radon. He set up a detector from a short term radon test kit. After 5 days, Mr. and Mrs. Smith followed the kit instructions and mailed the radon test detector to a laboratory for analysis. Below is the result of the radon testing on the Smith's home.

Radon Test Result = 3.8 pCi/L

The US EPA (US Environmental Protection Agency) action level for indoor radon is 4.0 pCi/L. If the radon test result is between 2.0 to 3.9 pCi/L, the EPA recommends further tests using a long-term radon test kit. If the long term results remain between 2.0 to 3.9, there is little short-term risk, but you should consider fixing your home to reduce radon exposure. Additionally, if you make any structural changes to the home, you should test again.

Short Term Radon Detector



Use the **Radon Fact Sheet** in your kit to answer questions 1 through 3.

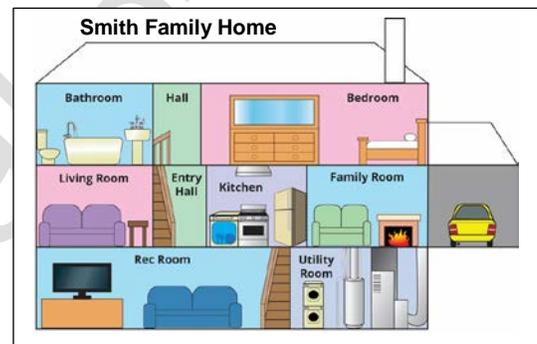
1. How does radon get into a home?
2. Why is it important that all homes be tested for radon?
3. What are some things that Mr. and Mrs. Smith can do to prevent exposure to radon in their home?

Part 3: Mold

The healthy homes volunteer notices a musty odor in the Smith home that might indicate the presence of mold. He suspects that mold may be causing the Smith children's coughing and runny noses. The volunteer explained that all homes have invisible mold spores in the air but locations where moisture is present are more likely to have higher concentrations of mold spores.

Use the **Mold Fact Sheet** in your kit to answer questions 1 through 3.

1. Why is mold harmful?
2. Your kit contains a large diagram of the **Smith Family Home** and a bag with beads. Place the three **black** beads on the three places in the home where you think mold is most likely to be growing.



Black beads = Likely locations for mold

3. Explain why it is usually NOT worth the cost of doing mold tests on a home.
4. What are some things that Mr. and Mrs. Smith can do to reduce exposure to mold in their home?

Part 4: Lead

Homes built before 1978 are likely to have paint that contains lead. Mr. and Mrs. Smith do not know when their home was built. The healthy homes volunteer would like you use lead test swabs to test paint samples from the Smith's home.

1. Your kit contains three paint samples from the Smith's home:
 - pink paint from the 2 year-old child's bedroom window sill
 - light gray paint from the family room door frame
 - green paint from the front porch railing
2. Test each of the paint samples to determine if they contain lead. Use a different swab for each paint sample.
 - Wet a lead test swab by dipping the cotton end into the **Lead Test Solution**.
 - Rub the wet swab over the surface of the paint sample square.
 - If the lead test swab turns red or pink, it indicates that the paint sample contains lead.
3. Did any of the samples contain lead? If so, which ones.

Use the **Lead Fact Sheet** in your kit to answer questions 4–6.

4. How will exposure to lead affect the Smith family?
5. Why are young children more likely than adults to be harmed by exposure to lead?
6. What are some things that Mr. and Mrs. Smith can do to protect their children from exposure to lead in paint and other things?

Part 5: Is YOUR Home a Healthy Home?

Carbon monoxide, radon, mold spores, and lead are invisible hazardous substances. Tests done by certified professionals are the only certain way to know if these substances are present in your home.

- Every home should be tested for radon.
- Every home should have carbon monoxide detectors.
- Testing a home for lead and mold may not be practical because professional testing is expensive and do-it-yourself tests may give unreliable results. If professional testing cannot be done, you should consider taking actions to reduce possible exposures to lead and mold.

1. Do you think conditions in your home might be exposing you and your family to the following hazards? Explain why or why not.

- Carbon monoxide
- Radon
- Mold
- Lead

2. What questions do you have about the health effects of carbon monoxide, radon, mold, or lead and ways to reduce your exposure to these substances?

Section 1 Chemical Product and Company Information

Science Take-Out 80 Office Park Way
Pittsford, NY 14534
(585)764-5400

**CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300**
For laboratory use only. Not for drug, food or household use

Product	Sodium Carbonate, Anhydrous
Synonyms	"Lead Test Solution"

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS07
Target organs: None known.



GHS Classification:
Eye irrit. (Category 2A)

GHS Label information: Hazard statement(s):
H319: Causes serious eye irritation.

Precautionary statement(s):

- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313: If eye irritation persists: Get medical advice/attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Sodium carbonate	497-19-8	1%	207-838-8
Water	7732-18-5	99%	231-791-2

Section 4 First Aid Measures

- INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.
- INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- EYE CONTACT:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.
- SKIN ABSORPTION:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

- Suitable Extinguishing Media:** Use any media suitable for extinguishing supporting fire.
- Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.
- Specific Hazards:** Sodium carbonate reacts with hydrated lime to form caustic soda. Special care should be taken where lime and sodium carbonate are handled in the same area.

Section 6 Accidental Release Measures

- Personal Precautions:** Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.
- Environmental Precautions:** Avoid runoff into storm sewers and ditches which lead to waterways.
- Containment and Cleanup:** Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling and Storage

- Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.
- Conditions for Safe Storage:** Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Sodium carbonate	None established.	None established.	None established.

- Engineering controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.
- Respiratory protection:** None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA approved respirator.

Section 9 Physical and Chemical Properties

Appearance: Solid, white powder.
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting/Freezing point: 864°C (1587°F)
Boiling point: Decomposes
Flash point: Not flammable.

Evaporation rate (Water = 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower/Upper: Not flammable.
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): 0.7 (water)
Relative density (Specific gravity): 2.533
Solubility(ies): 17% @ 20°C in water.

Partition coefficient: Data not available.
Auto-ignition temp.: Data not available.
Decomposition temp.: Data not available
Viscosity: Data not available.
Molecular formula: Na₂CO₃
Molecular weight: 105.99

Section 10 Stability and Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures. Hygroscopic material, avoid moisture.

Incompatibilities with other materials: Acids cause decomposition liberating gaseous carbon dioxide. When mixed with lime dust and water, corrosive and caustic soda may be produced.

Hazardous decomposition products: Carbon dioxide.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 4090 mg/kg ; Inhalation-rat LC50: 2.3 mg/l/2 hours ; Dermal-rat LD50: 2210 mg/kg

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available.

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

Aspiration hazard: Data not available

STOT-repeated exposure: Data not available

Potential health effects:

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Signs and symptoms of exposure: Burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting.

Additional information: RTECS #: VZ4050000

Section 12 Ecological Information

Toxicity to fish: LC50 - Lepomis macrochirus (Bluegill) - 300 mg/l - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 265 mg/l - 48 h

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: None assigned

Shipping name: Not Regulated

Hazard class: Not applicable

Packing group: Not applicable

Reportable Quantity: No

Marine pollutant: No

Exceptions: No

2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Sodium carbonate	Listed	Not Listed	Not Listed	Not Listed	Not Listed	E;D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees.

NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

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Supersedes: