
Hazard Communication 2013 Training for Chemical Users

*The journey from the “Right to Know”
to the “Right to Understand”*

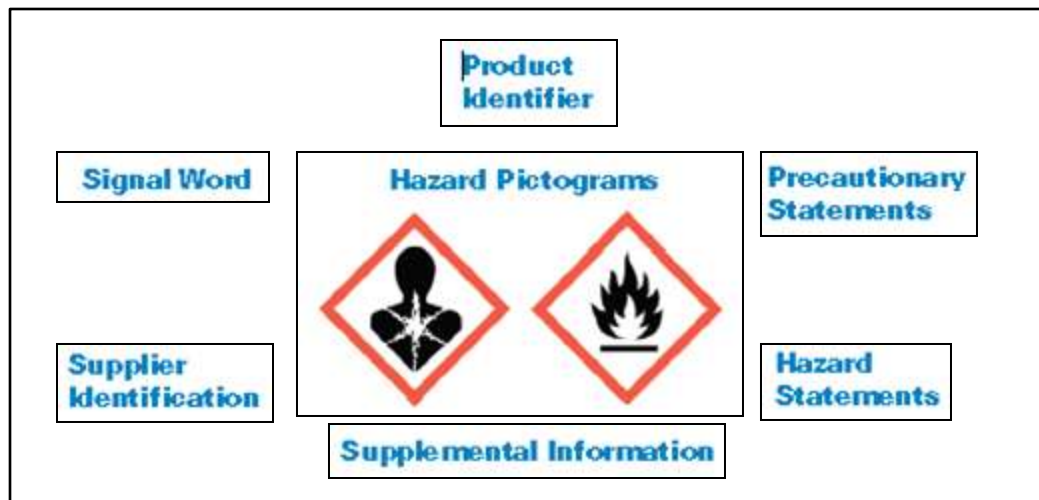
- **29 CFR 1910.1200**
-

Objectives

29 CFR 1910.1200

We will cover the new:

- Label elements
(Manufacturer/Distributor/Importer)
- SDS format



The image shows a sample Safety Data Sheet (SDS) for 'Good Chemical Company'. The document is titled 'Good Chemical Company Safety Data Sheet' and includes the following sections:

- Material Name (Signal Word, All Types):** Example: (See the Safety Sheet, See Safety Sheet No. 1) Good Chemical Company, Inc. Good Chemical Company, Inc. (See Safety Sheet No. 1)
- Section 1 - Product and Company Identification:** Good Chemical Company, 100 Main Street, Goodville, NC, 27777.
- Section 2 - Hazards Identification:** GHS Classification: Flammable Liquid - Category 2, Irritant - Category 2, Acute Toxicity (Oral) - Category 4, Acute Toxicity (Dermal) - Category 4, Acute Toxicity (Inhalation) - Category 4, Hazardous to the Aquatic Environment (AQUA-Hazard) - Category 3. Signal Word: DANGER. Hazard Statements: H226, H314, H332, H334, H410.
- Section 3 - Composition/Information on Ingredients:** Hazardous Ingredients: None.
- Section 4 - First Aid Measures:** Inhalation: Move to fresh air. If breathing is difficult, call a doctor. Eye Contact: Flush with water for at least 15 minutes. Skin Contact: Wash with plenty of water. Ingestion: Do not induce vomiting. Call a doctor.
- Section 5 - Fire Fighting Measures:** Extinguishers: Water spray, foam, CO2, dry chemical.
- Section 6 - Accidental Release Measures:** Personal Protection: Wear eye protection. Avoid breathing dusts, fumes, or vapors.
- Section 7 - Handling and Storage:** Store in a cool, dry place. Keep away from heat and open flames.
- Section 8 - Exposure Controls/Personal Protection:** Use appropriate respiratory protection.
- Section 9 - Physical and Chemical Properties:** Appearance: Clear, colorless liquid. Boiling Point: 100°C. Melting Point: 0°C. Density: 1.0 g/cm³.
- Section 10 - Stability and Reactivity:** Stable under normal conditions.
- Section 11 - Toxicological Information:** LD50 (Oral, Rat): 5000 mg/kg. LD50 (Dermal, Rabbit): 1000 mg/kg. LD50 (Inhalation, Rat): 1000 mg/m³.
- Section 12 - Ecotoxicological Information:** Aquatic Toxicity: Harmful to aquatic life with long-term effects.
- Section 13 - Environmental Fate:** Persistence and Degradation: Biodegradable.
- Section 14 - Transport Information:** Hazard Class: 3. Packing Group: II. UN Number: 1993.
- Section 15 - Regulatory Information:** OSHA 29 CFR 1910.1200. GHS Label Elements: Signal Word: DANGER. Hazard Statements: H226, H314, H332, H334, H410. Precautionary Statements: P201+P202, P273, P301+P312, P302+P352, P303+P361+P353, P304+P340, P305+P351+P338, P501.
- Section 16 - Other Information:** SDS No. 12345. Revision: 1.0. Date: 1/1/2020.

Effective Dates

1910.1200(j)



Effective Completion Date	Requirement(s)	Who
December 1, 2013	Train employees on the new label elements and safety data sheet (SDS) format.	Employers
June 1, 2015* December 1, 2015	Compliance with all modified provisions of this final rule, except : The distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label.	Chemical manufacturers, importers, distributors and employers
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
Transition period to the effective completion dates noted above.	May comply with either 29 CFR 1910.1200 (the final standard), or the current standard, or both.	Chemical manufacturers, importers, distributors and employers

Significant Standard Changes *(in bold)*

(a) Purpose

(b) Scope and Application

(c) Definitions

(d) Hazard Classification

(e) Written Hazard Communication Program

(f) Labels

(g) Safety Data Sheets

(h) Employee Information and Training

(i) Trade Secrets

(j) Effective Dates

 Today's
Session

Labeling

1910.1200(f)

- Shall be in English and prominently display
 - Product identifier
 - Name, address and telephone number of manufacturer/importer/responsible party
 - Precautionary statement(s)
 - Pictogram(s)
 - Signal word
 - Hazard statements

SAMPLE LABEL


OSHA Product Name _____	} Product Identifier	Hazard Pictograms Signal Word Danger
Company Name _____ Street Address _____ City _____ State _____ Postal Code _____ Country _____ Emergency Phone Number _____	} Supplier Identification	
Keep container tightly closed. Store in a cool, well-ventilated place that is locked. Keep away from heat/sparks/open flame. No smoking. Only use non-sparking tools. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Ground and bond container and receiving equipment. Do not breathe the vapors. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified.		Hazard Statements Highly flammable liquid and vapor. May cause liver and kidney damage.
In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO ₂) fire extinguisher to extinguish. First Aid: If exposed call Poison Center. If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.		

Precautionary Statements

Labeling

1910.1200(f)

SAMPLE LABEL

<p>CODE _____ Product Name _____</p>	}	<p>Product Identifier</p>	<p>Hazard Pictograms</p> 
<p>Company Name _____ Street Address _____ City _____ State _____ Postal Code _____ Country _____ Emergency Phone Number _____</p>	}	<p>Supplier Identification</p>	<p>Signal Word Danger</p>
<p>Keep container tightly closed. Store in a cool, well-ventilated place that is locked. Keep away from heat/sparks/open flame. No smoking. Only use non-sparking tools. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Ground and bond container and receiving equipment. Do not breathe vapors. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified.</p> <p>In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO₂) fire extinguisher to extinguish.</p> <p>First Aid If exposed call Poison Center. If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.</p>			<p>Hazard Statements</p> <p>Highly flammable liquid and vapor. May cause liver and kidney damage.</p>
			<p>Precautionary Statements</p>
			<p>Supplemental Information</p> <p>Directions for Use</p> <p>_____ _____ _____</p> <p>Fill weight: _____ Lot Number: _____ Gross weight: _____ Fill Date: _____ Expiration Date: _____</p>

Harmonized Information

- Signal words, pictograms and hazard statements *have been harmonized* and assigned to each hazard class and category in the GHS.
- Once a chemical has been classified, the label preparer can obtain the *relevant harmonized information* from **Appendix C**.







Harmonized Information

- **“Signal word”** – a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label.
 - **“Danger”** is used for the more severe hazards.
 - **“Warning”** is used for the less severe.



Hazard Statements

- **“Hazard statement”** – a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
 - For example: Harmful if inhaled [for Category 4 Acute Toxicity – Inhalation]

Pictogram				
Signal word	Danger	Danger	Danger	Warning
Hazard statement	Fatal if inhaled	Fatal if inhaled	Toxic if inhaled	Harmful if inhaled

Pictograms

- **“Pictogram”** means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical.
 - Eight pictograms are designated under this standard for application to a hazard category.

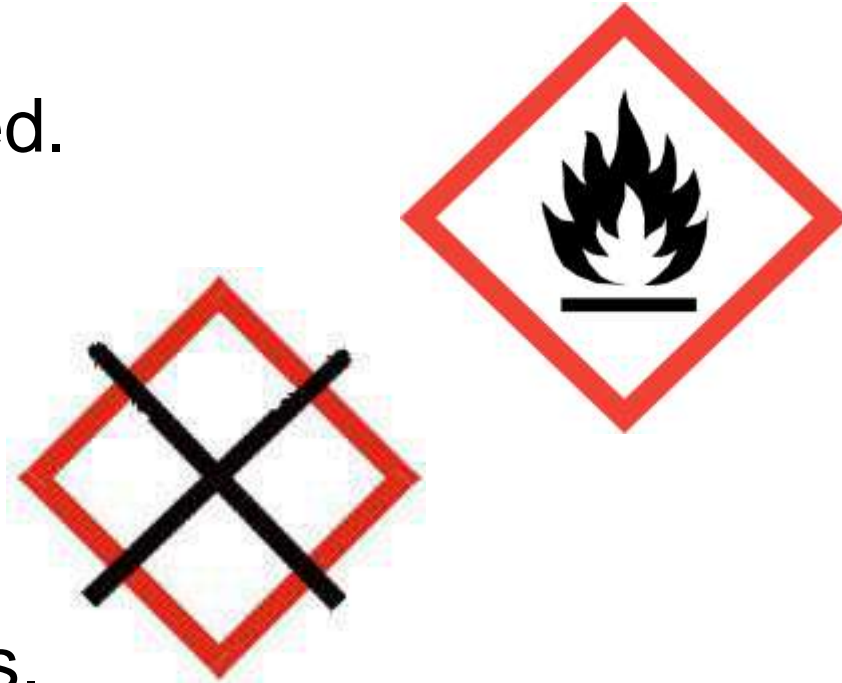


HCS Pictograms and Hazards

<p>Health Hazard</p>  <ul style="list-style-type: none">• Carcinogen• Mutagenicity• Reproductive Toxicity• Respiratory Sensitizer• Target Organ Toxicity• Aspiration Toxicity	<p>Flame</p>  <ul style="list-style-type: none">• Flammables• Pyrophorics• Self-Heating• Emits Flammable Gas• Self Reactives• Organic Peroxides	<p>Exclamation Mark</p>  <ul style="list-style-type: none">• Irritant (skin and eye)• Skin Sensitizer• Acute Toxicity (harmful)• Narcotic Effects• Respiratory Tract Irritant• Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none">• Gases under pressure	<p>Corrosion</p>  <ul style="list-style-type: none">• Skin Corrosion/ Burns• Eye Damage• Corrosive to Metals	<p>Exploding Bomb</p>  <ul style="list-style-type: none">• Explosives• Self-Reactives• Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none">• Oxidizers	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none">• Aquatic Toxicity	<p>Skull and Crossbones</p>  <ul style="list-style-type: none">• Acute Toxicity (fatal or toxic)

Pictograms

- Red borders required.







- No blank pictograms.
-

Precautionary Statements

- **“Precautionary statement”** means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

– For example: Wear face protection [for Explosives, Division 1.1]

Pictogram				
Signal word	Danger	Danger	Danger	Warning
Hazard statement	Explosive; mass explosion hazard	Explosive; severe projection hazard	Explosive; fire, blast or projection hazard	Fire or projection hazard

Precautionary Statements


- OSHA has adopted the precautionary statements from the GHS.
 - Statements are in **Appendix C** and assigned to classes and categories.
 - Also provides better consistency and comprehensibility than allowing the development of company-specific statements.
 - Rule provides flexibility for precautionary and hazard statement application.
-

Additional Requirements

- Harmonized information is to be provided together on the label.
 - Signal words, pictograms and hazard statements
- All information is to be prominently displayed and in English (although other languages may also be provided).
- The requirement that information not conflict with transport labels remains the same.






Example of Appendix C Label Elements

C.4.19 FLAMMABLE LIQUIDS (Classified in Accordance with Appendix B.6)			
Hazard category 1 2 3	Signal word Danger Danger Warning	Hazard statement Extremely flammable liquid and vapor Highly flammable liquid and vapor Flammable liquid and vapor	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Pictogram Flame </div> 
Precautionary statements			
Prevention	Response	Storage	Disposal
<p>Keep away from heat/sparks/open flames/hot surfaces.– No smoking. Chemical manufacturer, importer, or distributor to specify applicable ignition source(s).</p> <p>Keep container tightly closed.</p> <p>Ground/Bond container and receiving equipment</p> <ul style="list-style-type: none"> - <i>if electrostatically sensitive material is for reloading.</i> - <i>if product is volatile so as to generate hazardous atmosphere.</i> <p>Use explosion-proof electrical/ventilating/lighting/.../equipment. ... Chemical manufacturer, importer, or distributor to specify other equipment.</p> <p>Use only non-sparking tools.</p> <p>Take precautionary measures against static discharge.</p> <p>Wear protective gloves/eye protection/face protection Chemical manufacturer, importer, or distributor to specify type of equipment.</p>	<p>If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>In case of fire: Use ... to extinguish. ... Chemical manufacturer, importer, or distributor to specify appropriate media. - <i>if water increases risk.</i></p>	<p>Store in a well-ventilated place. Keep cool.</p>	<p>Dispose of contents/container to... ... in accordance with local/regional/national/international regulations (to be specified).</p>

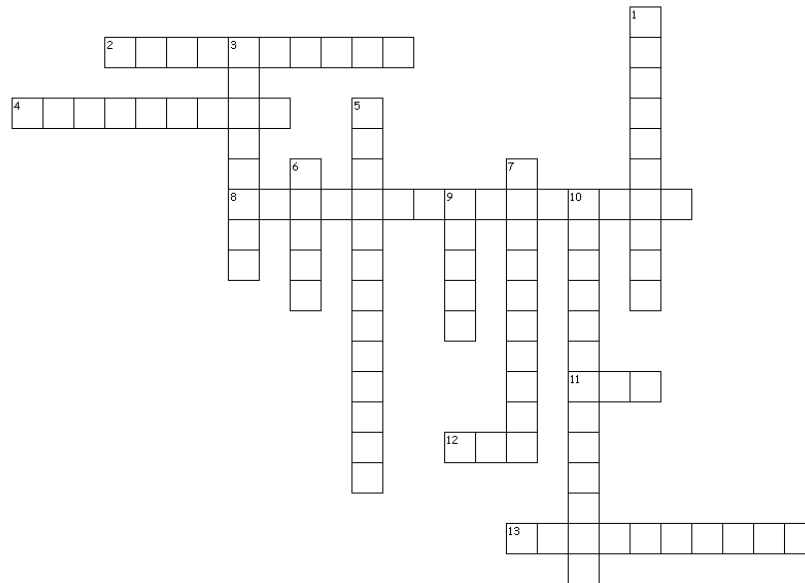
Label Example

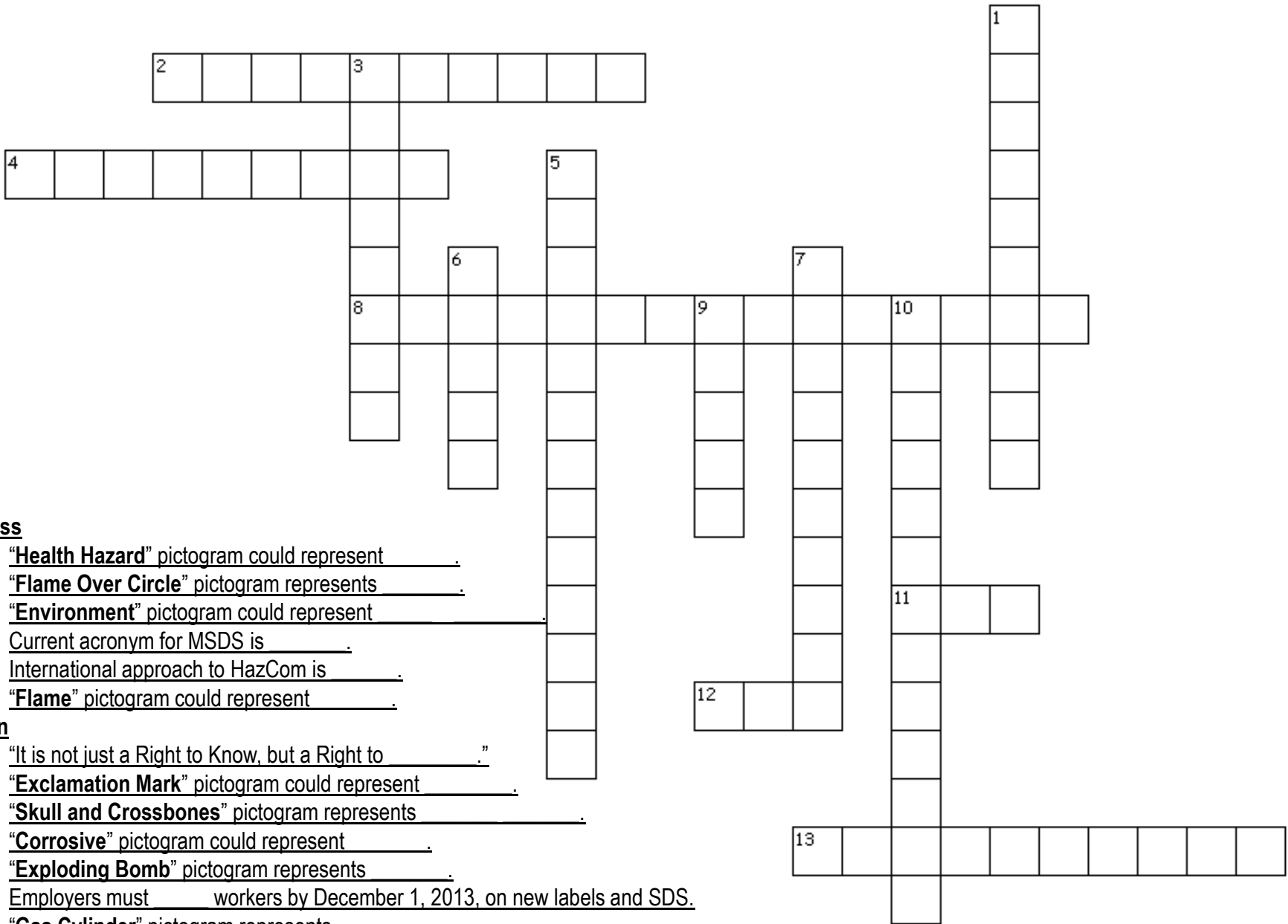
New style Label (GHS)

Xyz... Chemical		
		
Warning		
Flammable liquid and vapor Harmful if swallowed May cause damage to organs (liver) May cause damage to organs through prolonged or repeated exposure (heart) Suspected of damaging fertility		
<p>Keep away from heat, sparks, open flames and hot surfaces – No smoking. Do not breathe vapors. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves and eye protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Keep container tightly closed. Ground container and receiving equipment. Use explosion-proof electrical, ventilating, lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Store locked up in a well ventilated place. Keep cool. Dispose of contents and container in accordance with local, state and federal regulations.</p>		
First aid:		
If swallowed: Call a doctor if you feel unwell. Rinse mouth.		
If on skin or hair: Remove immediately all contaminated clothing. Rinse skin with water.		
If exposed or if you feel unwell: Call a doctor.		
Fire:		
In case of fire: Use water spray, foam, dry chemical or carbon dioxide (CO ₂) for extinction.		
GHS Company, 123 Global Drive, Cincinnati, OH		Telephone (800) 555-8888

Crossword Activity

- Let's review what we have learned about the new HazCom standard by completing the crossword activity.



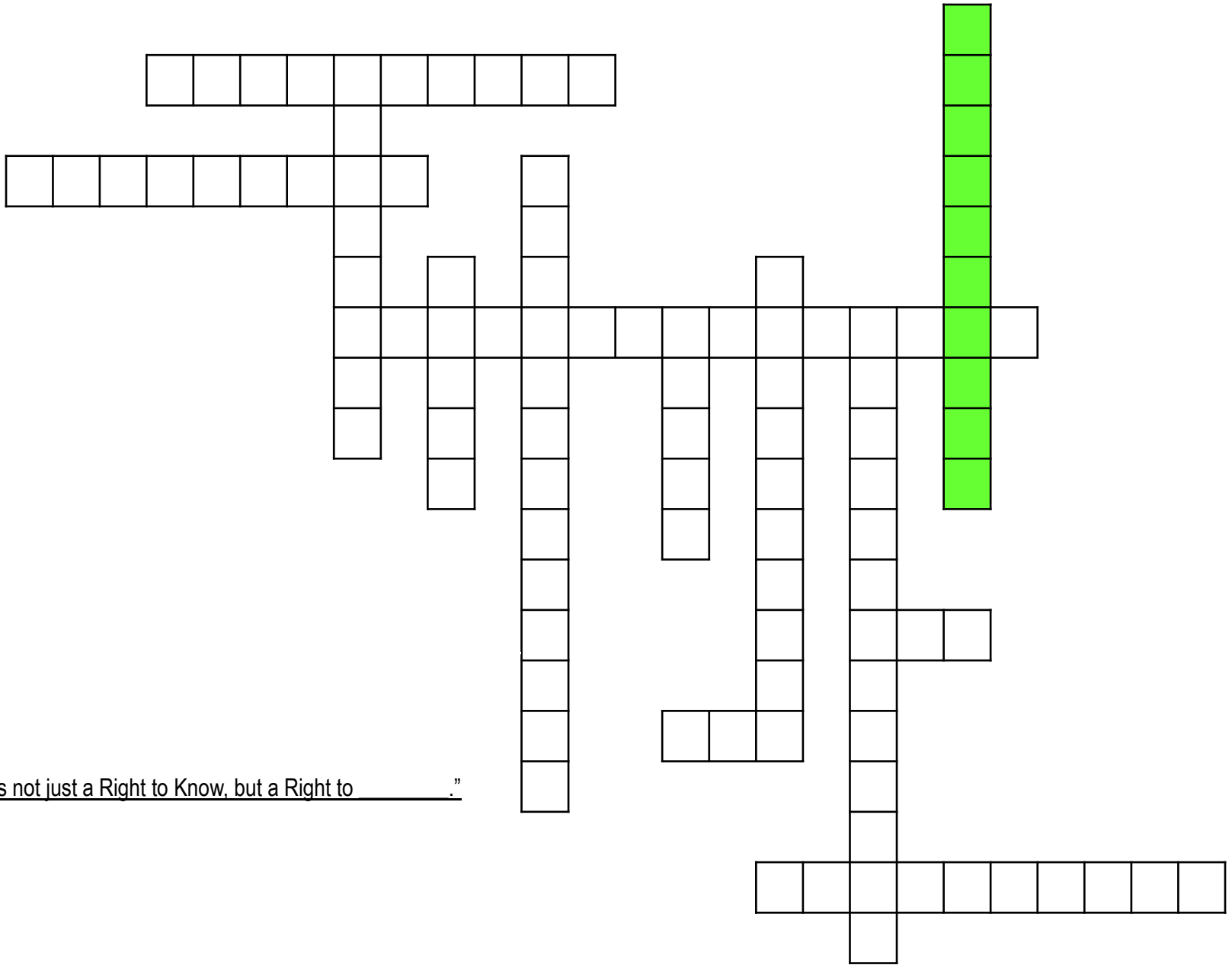


Across

2. "Health Hazard" pictogram could represent _____.
4. "Flame Over Circle" pictogram represents _____.
8. "Environment" pictogram could represent _____.
11. Current acronym for MSDS is _____.
12. International approach to HazCom is _____.
13. "Flame" pictogram could represent _____.

Down

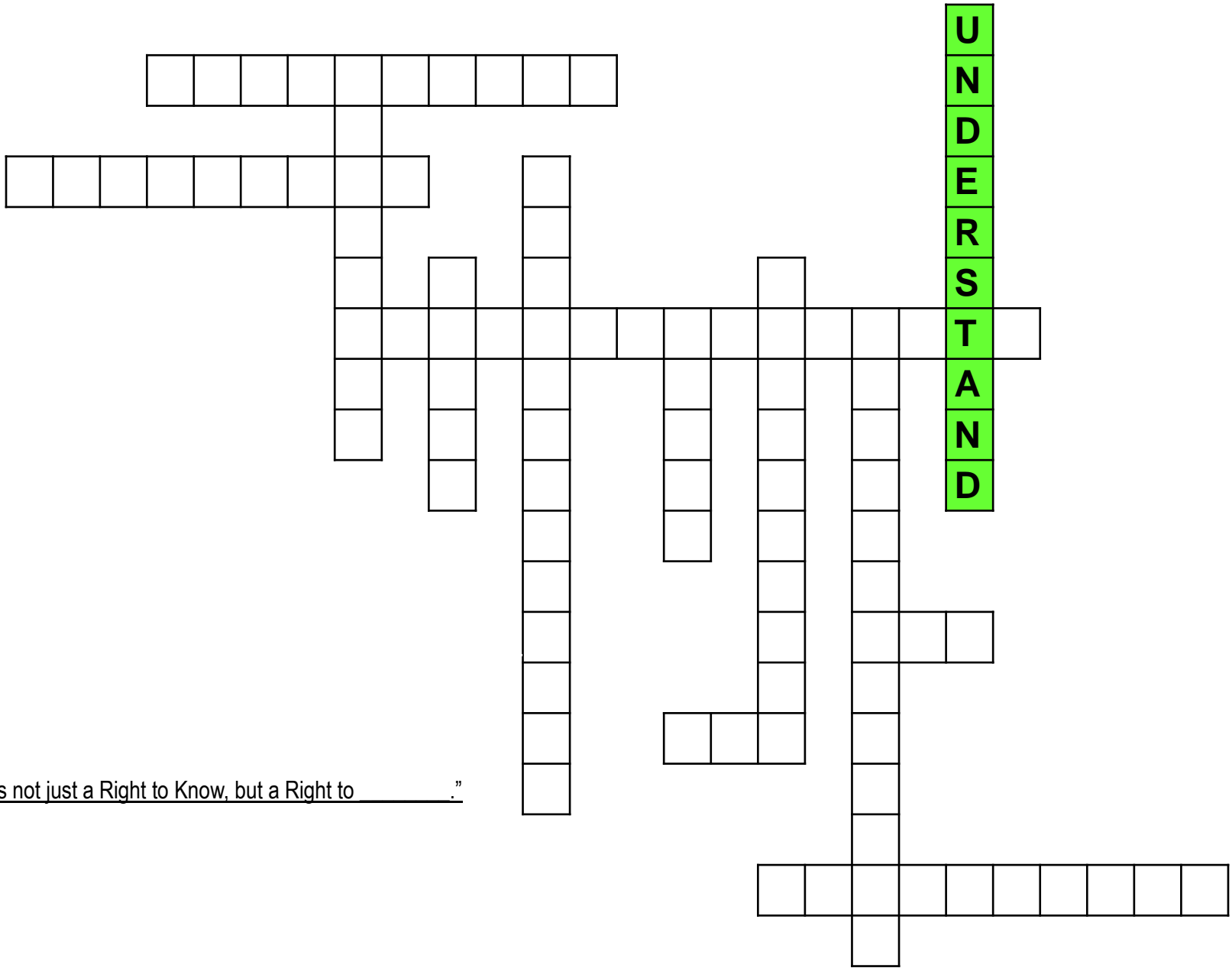
1. "It is not just a Right to Know, but a Right to _____."
3. "Exclamation Mark" pictogram could represent _____.
5. "Skull and Crossbones" pictogram represents _____.
6. "Corrosive" pictogram could represent _____.
7. "Exploding Bomb" pictogram represents _____.
9. Employers must _____ workers by December 1, 2013, on new labels and SDS.
10. "Gas Cylinder" pictogram represents _____.



Across

Down

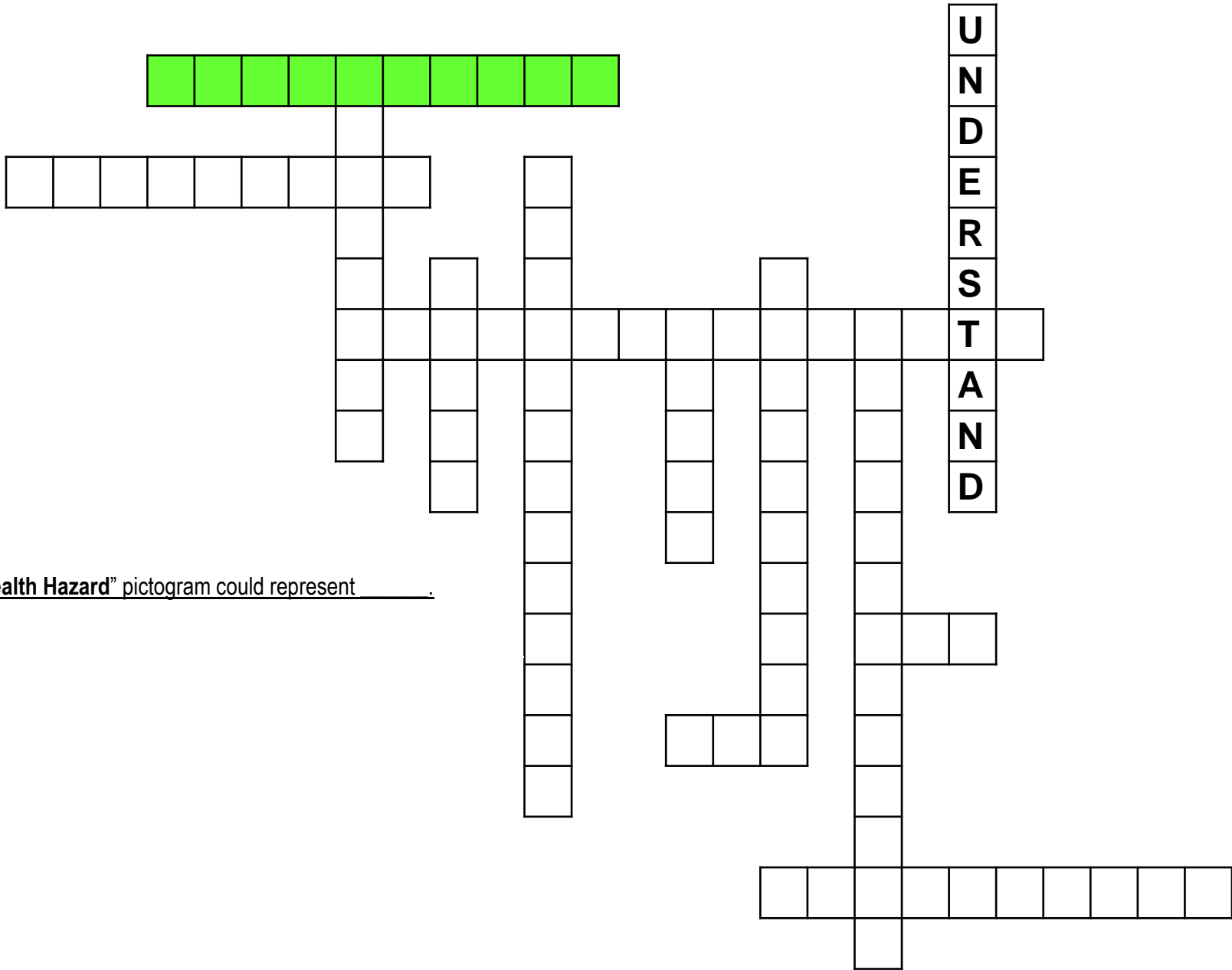
1. "It is not just a Right to Know, but a Right to _____."



Across

Down

1. "It is not just a Right to Know, but a Right to _____."



Across

2. **"Health Hazard"** pictogram could represent _____.

Down

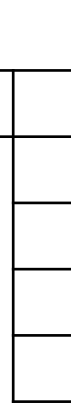
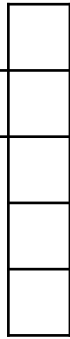
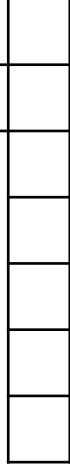
C A R C I N O G E N

U
N
D
E
R
S
T
A
N
D

Across

2. "Health Hazard" pictogram could represent _____.

Down



C A R C I N O G E N

U
N
D
E
R
S
T
A
N
D

Across

Down

3. "Exclamation Mark" pictogram could represent _____.

C A R C I N O G E N

R
R
I
T
A
N
T

U
N
D
E
R
S
T
A
N
D

Across

Down

3. "Exclamation Mark" pictogram could represent _____.

C A R C I N O G E N

U
N
D
E
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D

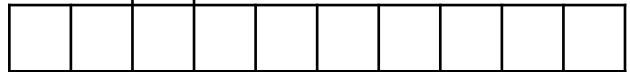
R
I
T
A
N
T



Across

4. "Flame Over Circle" pictogram represents _____.

Down



C A R C I N O G E N

U
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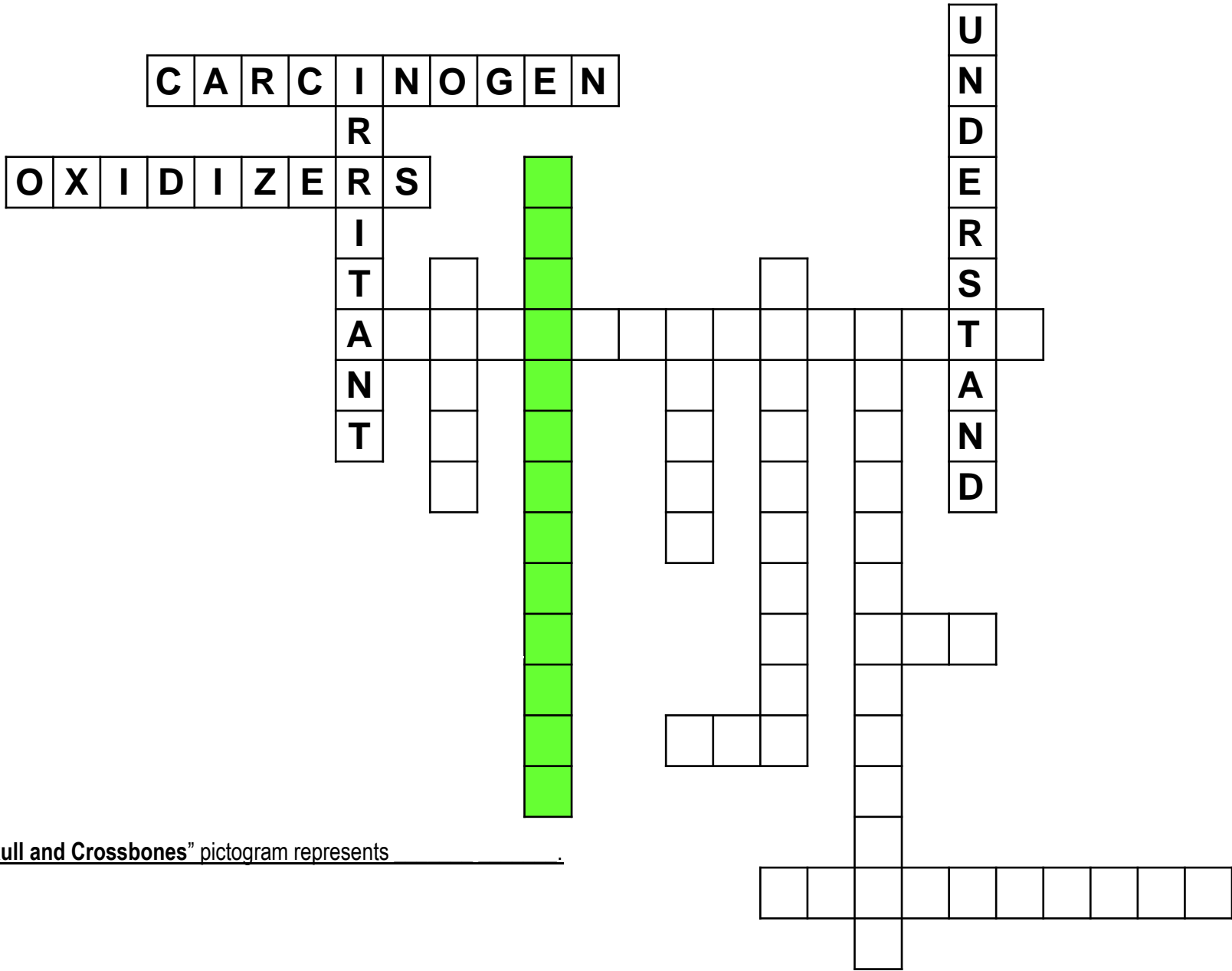
O X I D I Z E R S

R
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Across

4. "Flame Over Circle" pictogram represents _____.

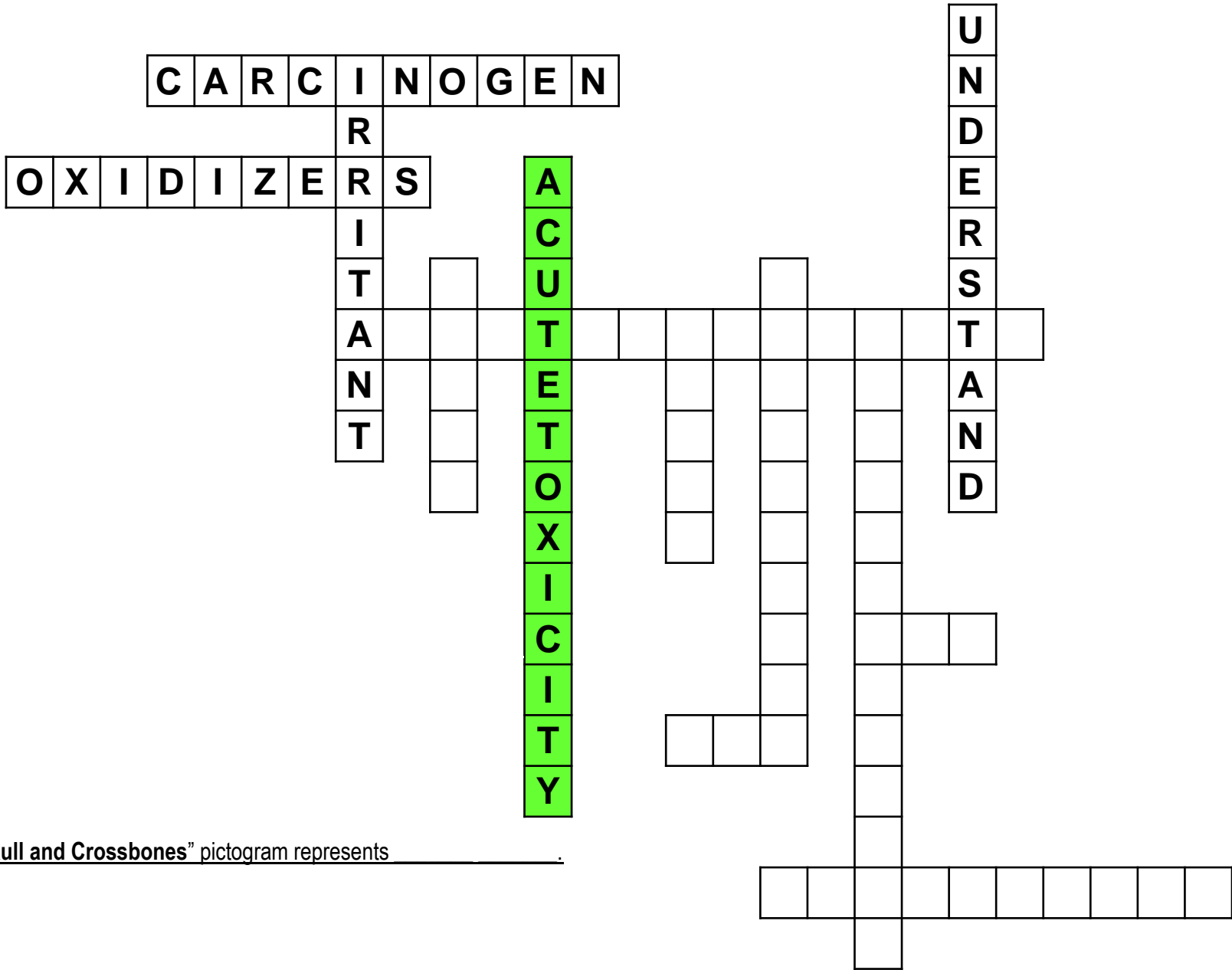
Down



Across

Down

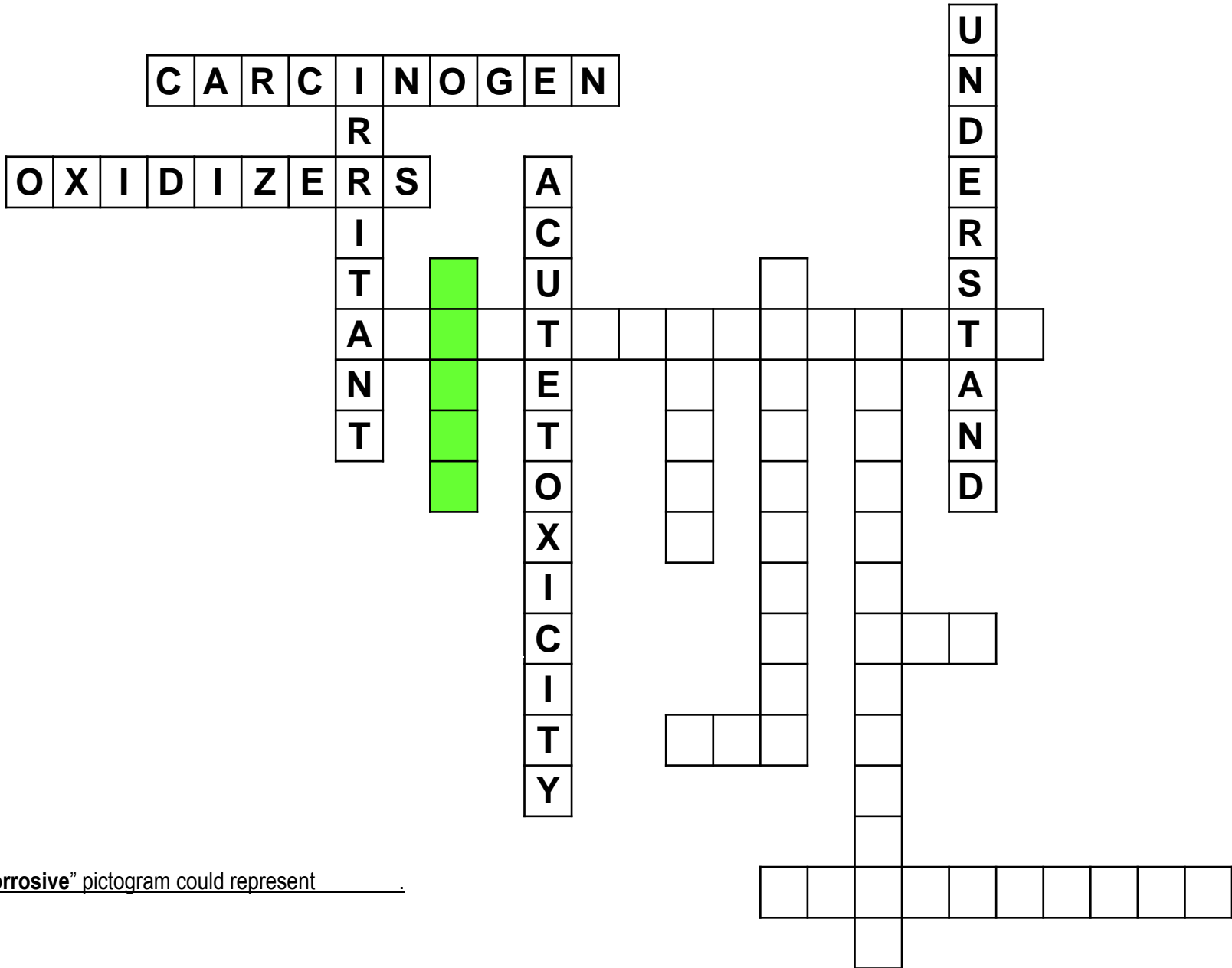
5. "Skull and Crossbones" pictogram represents _____.



Across

Down

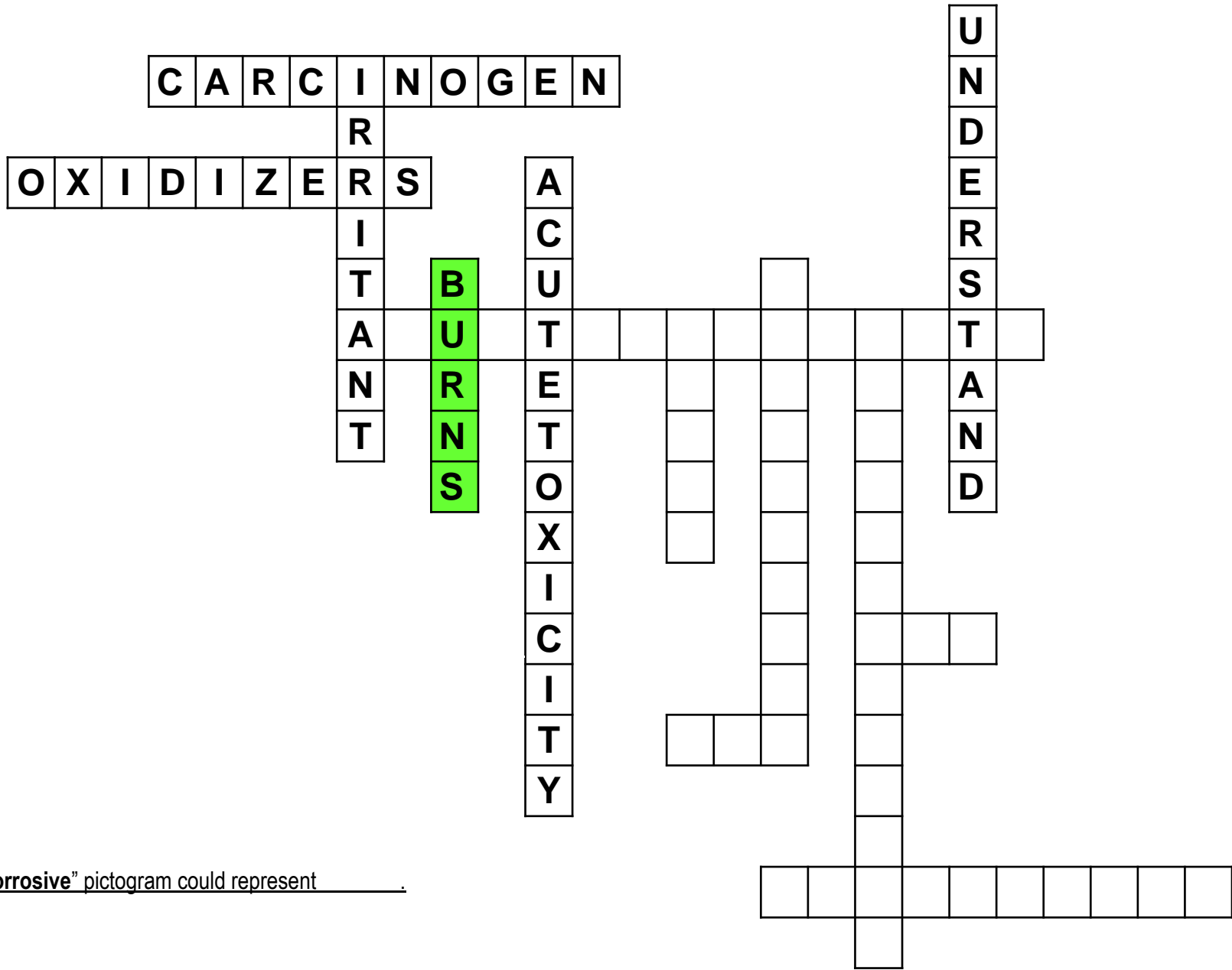
5. "Skull and Crossbones" pictogram represents _____.



Across

Down

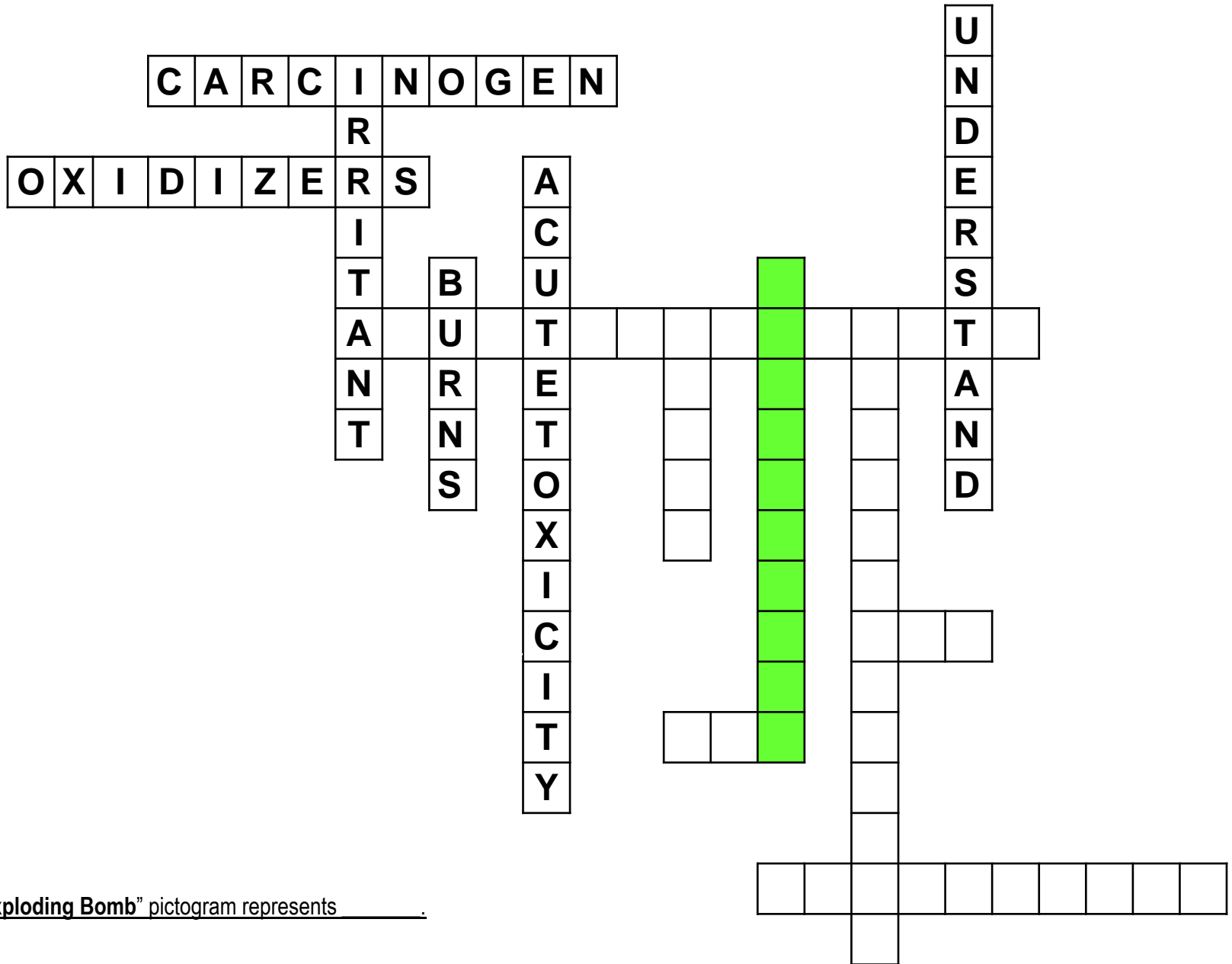
6. "Corrosive" pictogram could represent _____.



Across

Down

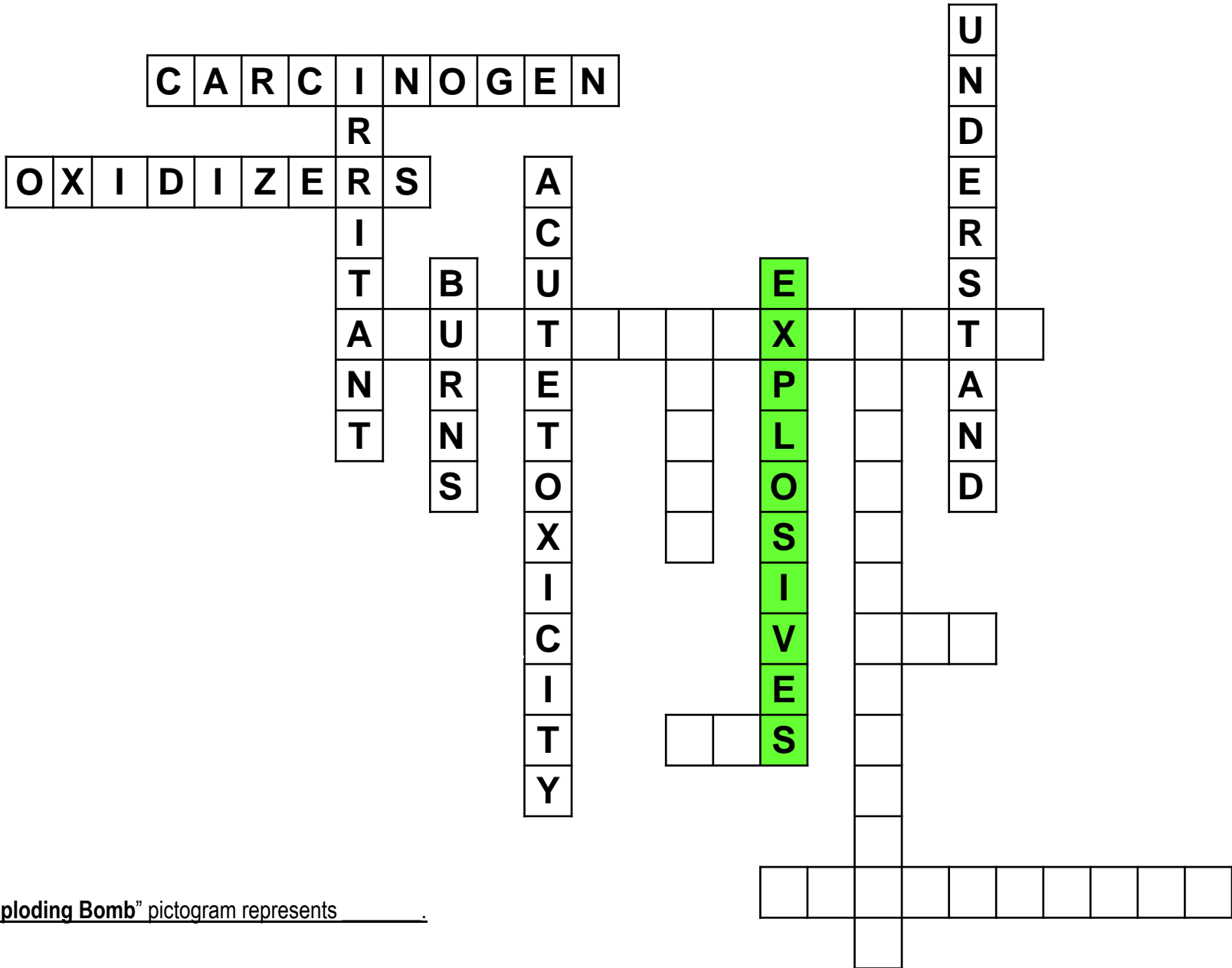
6. "Corrosive" pictogram could represent _____.



Across

Down

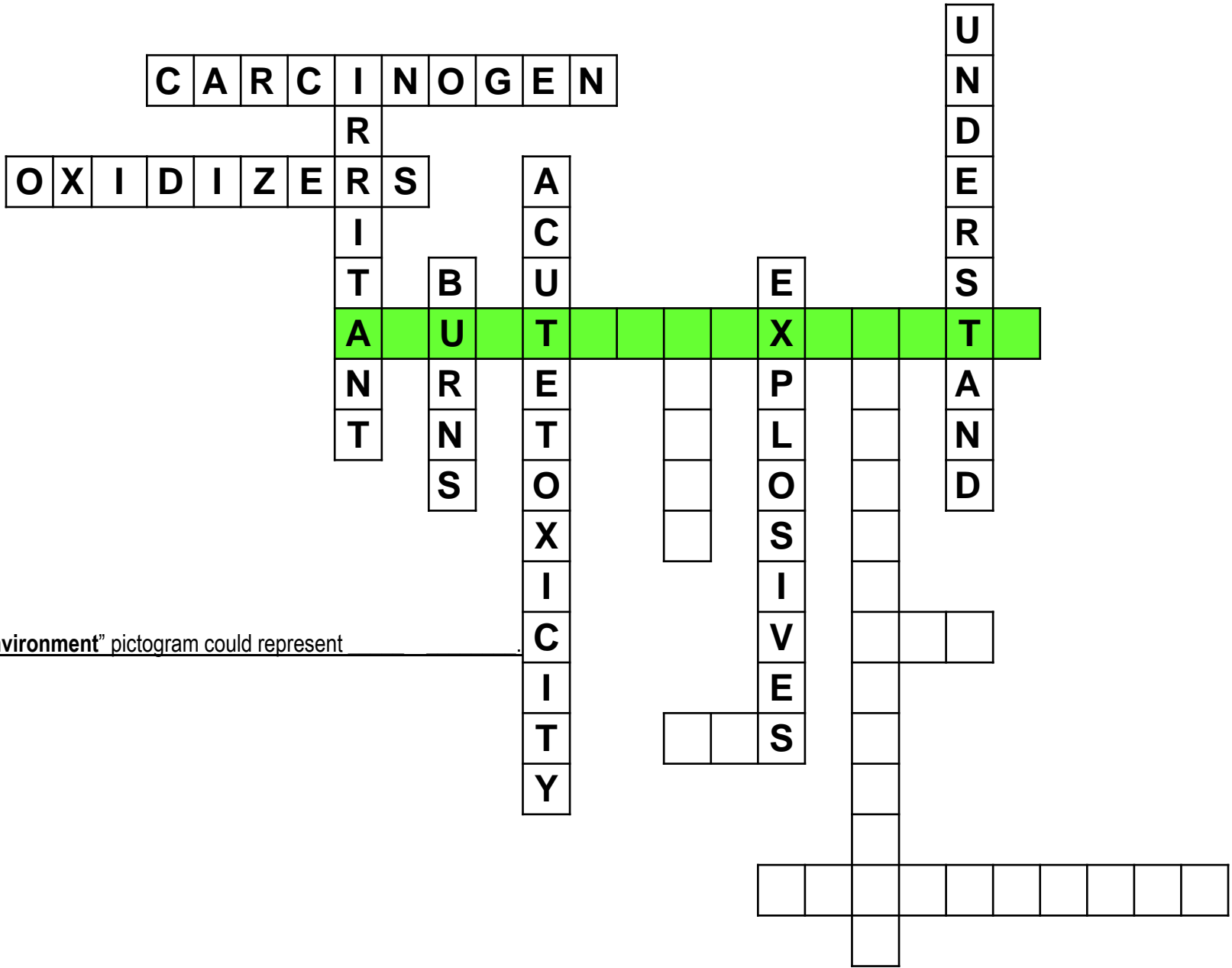
7. "Exploding Bomb" pictogram represents



Across

Down

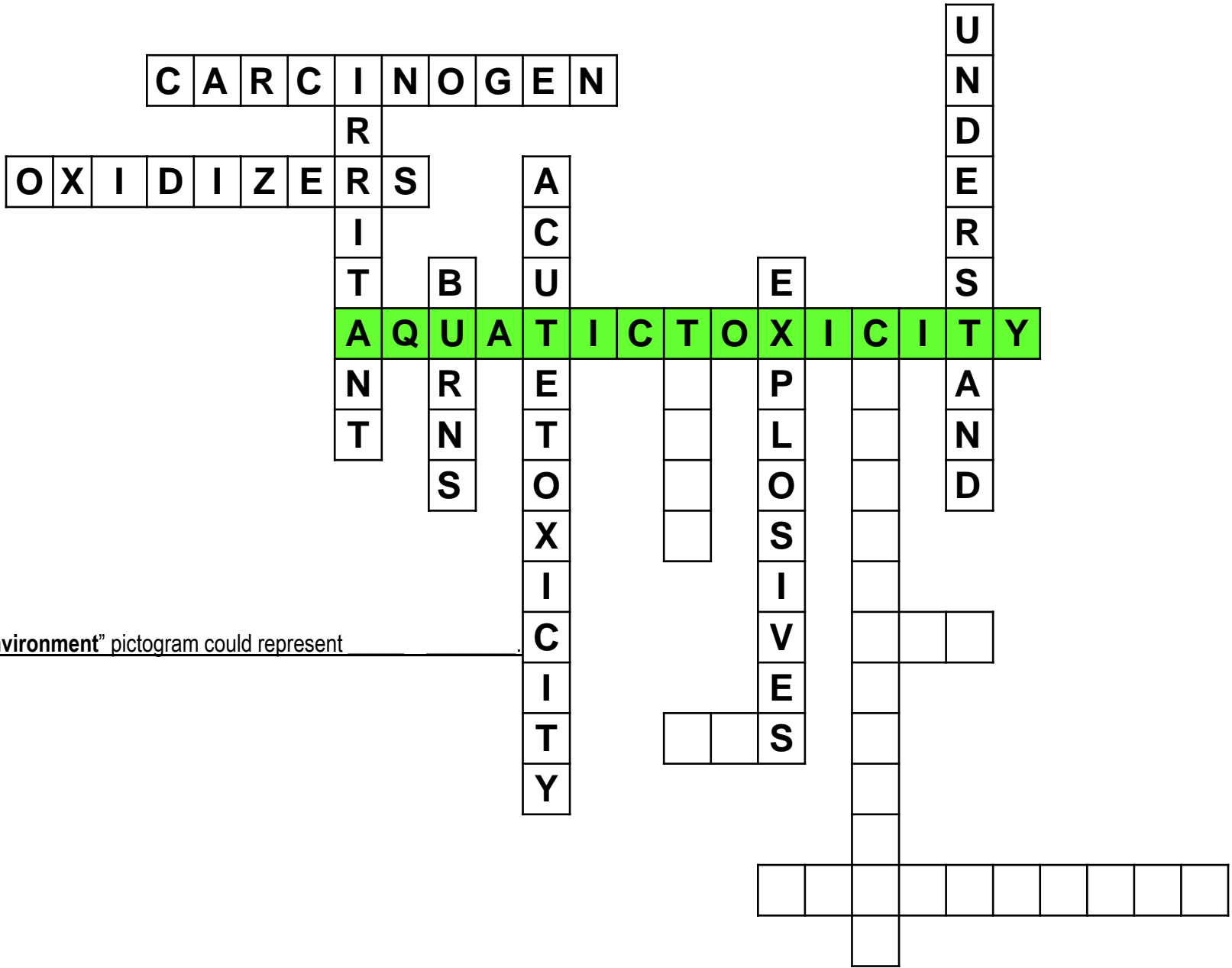
7. "Exploding Bomb" pictogram represents _____.



Across

8. "Environment" pictogram could represent

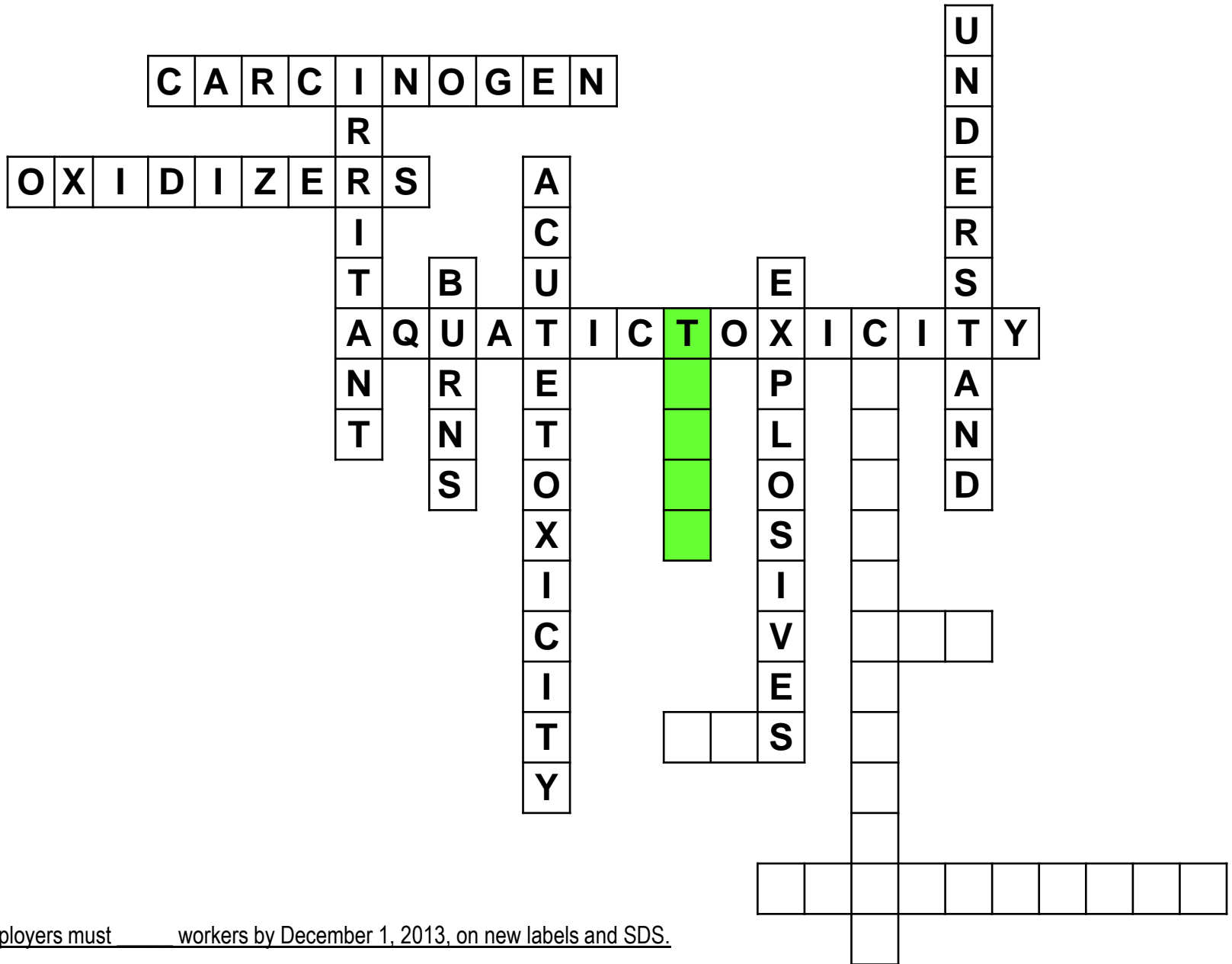
Down



Across

8. "Environment" pictogram could represent

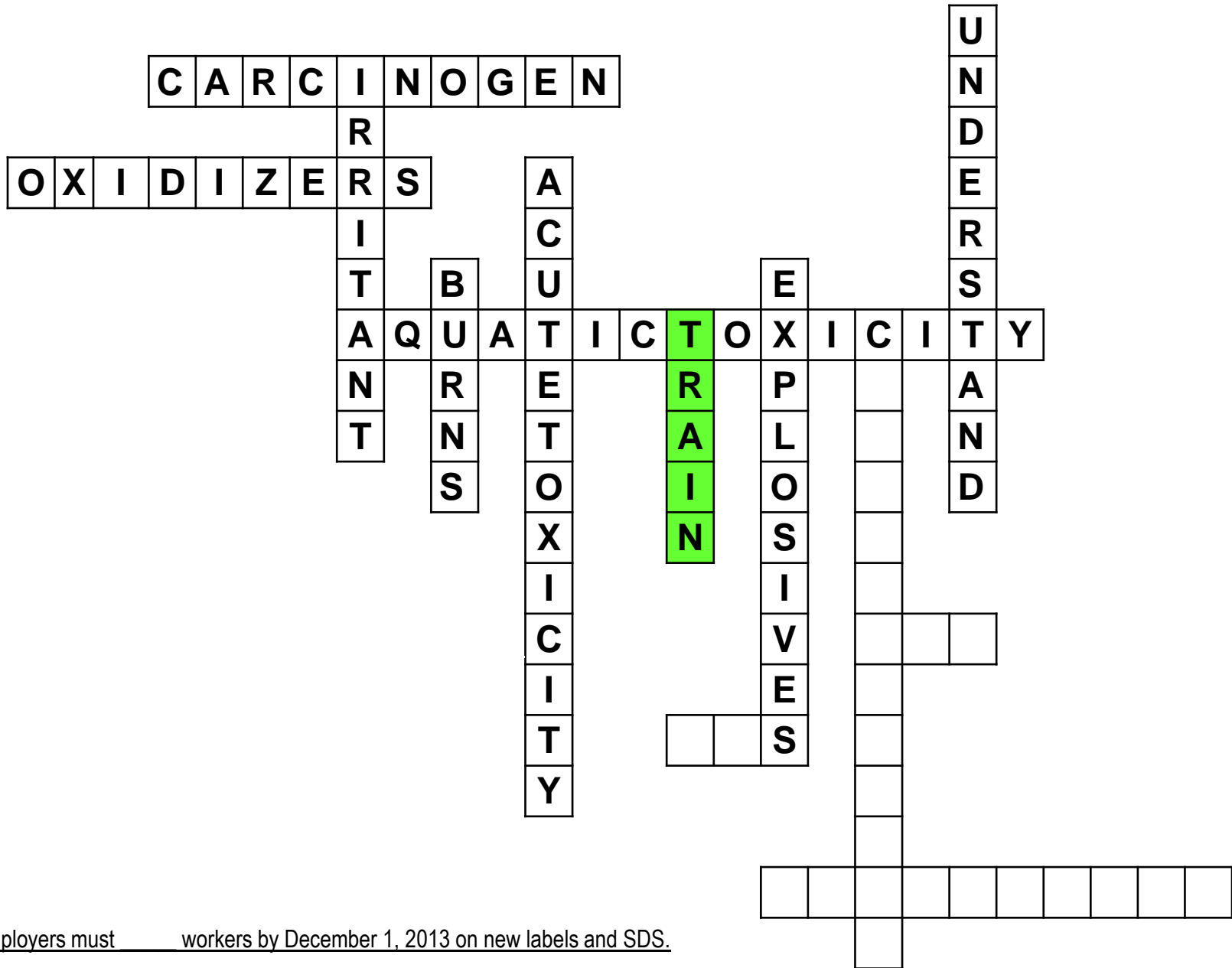
Down



Across

Down

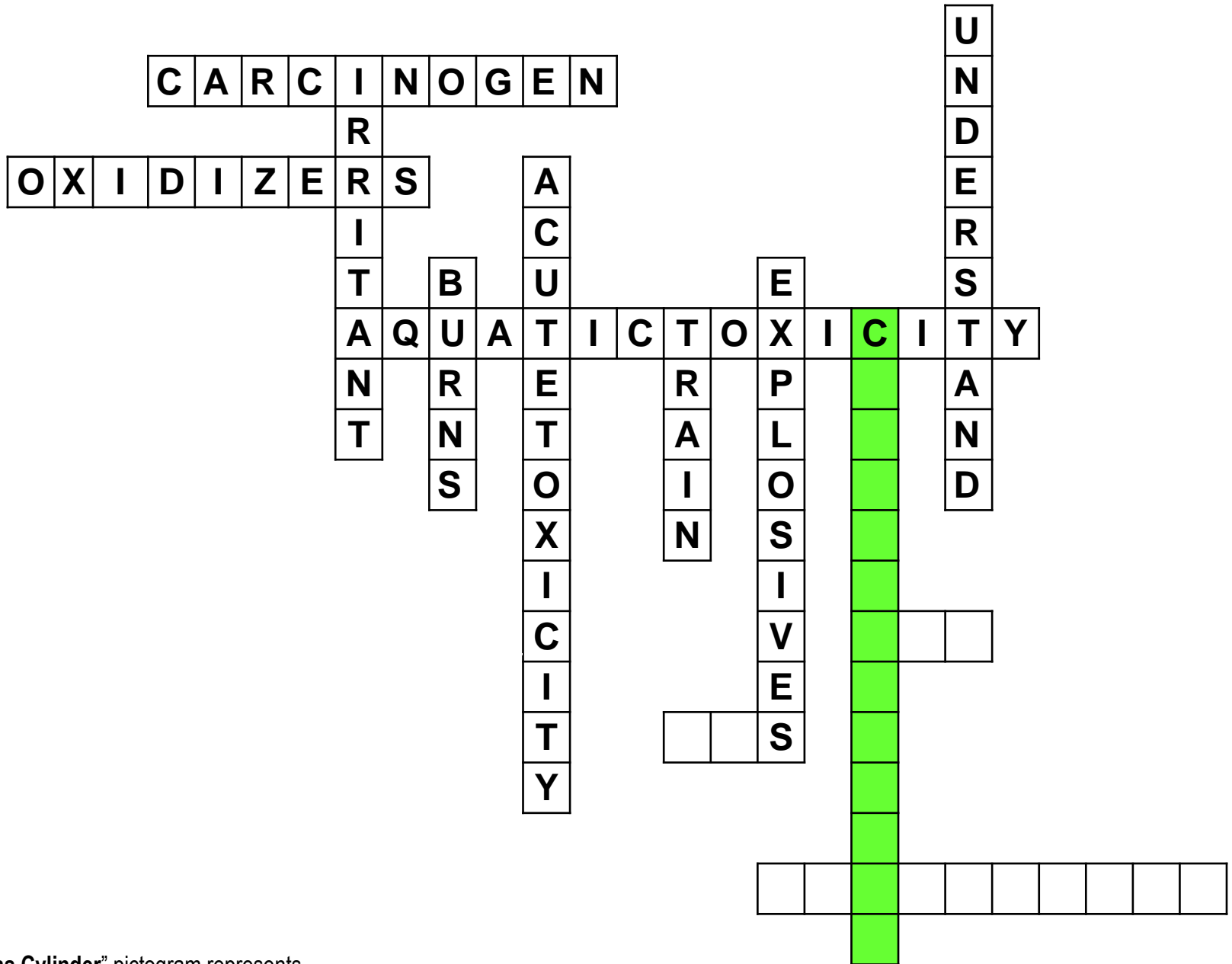
9. Employers must _____ workers by December 1, 2013, on new labels and SDS.



Across

Down

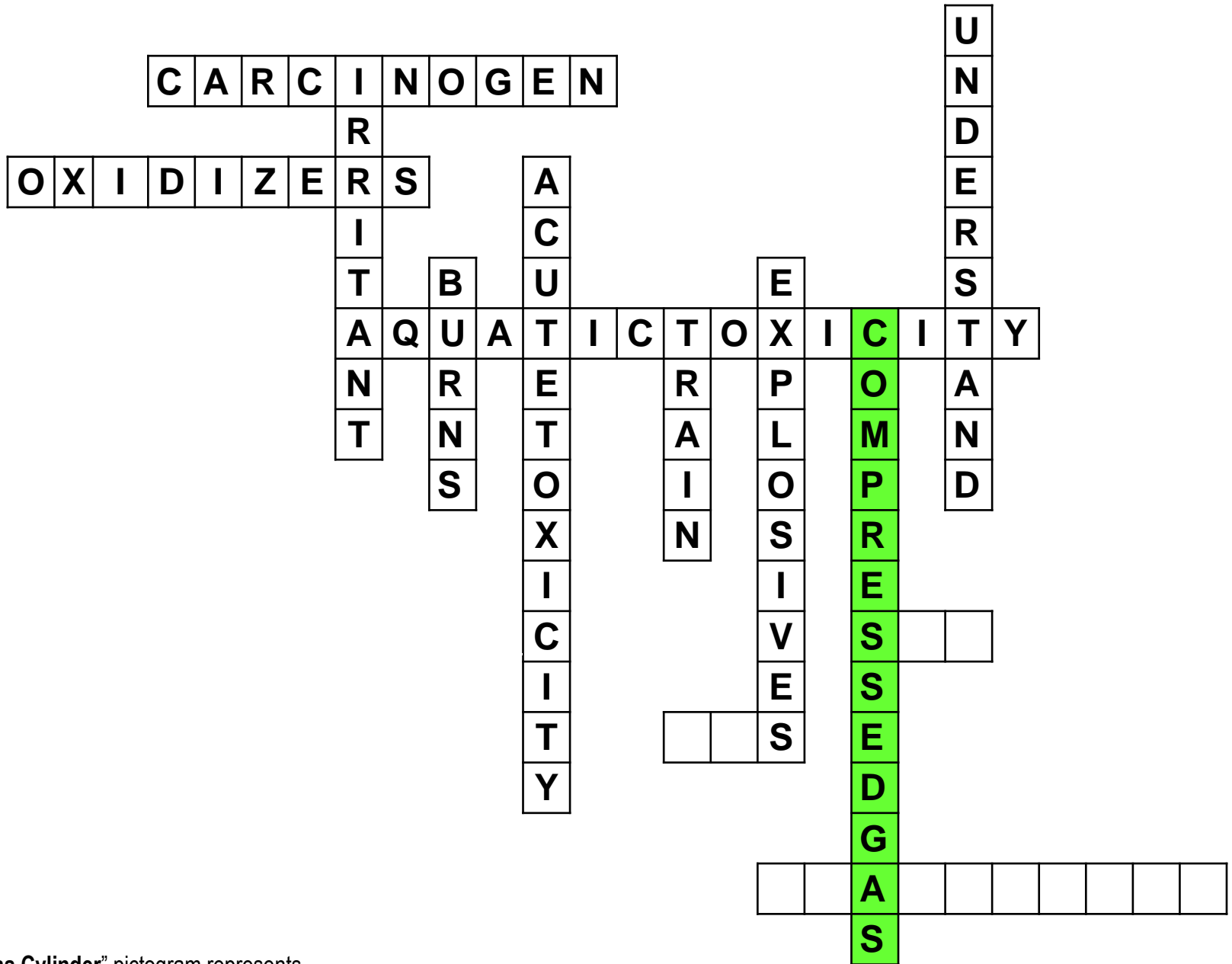
9. Employers must _____ workers by December 1, 2013 on new labels and SDS.



Across

Down

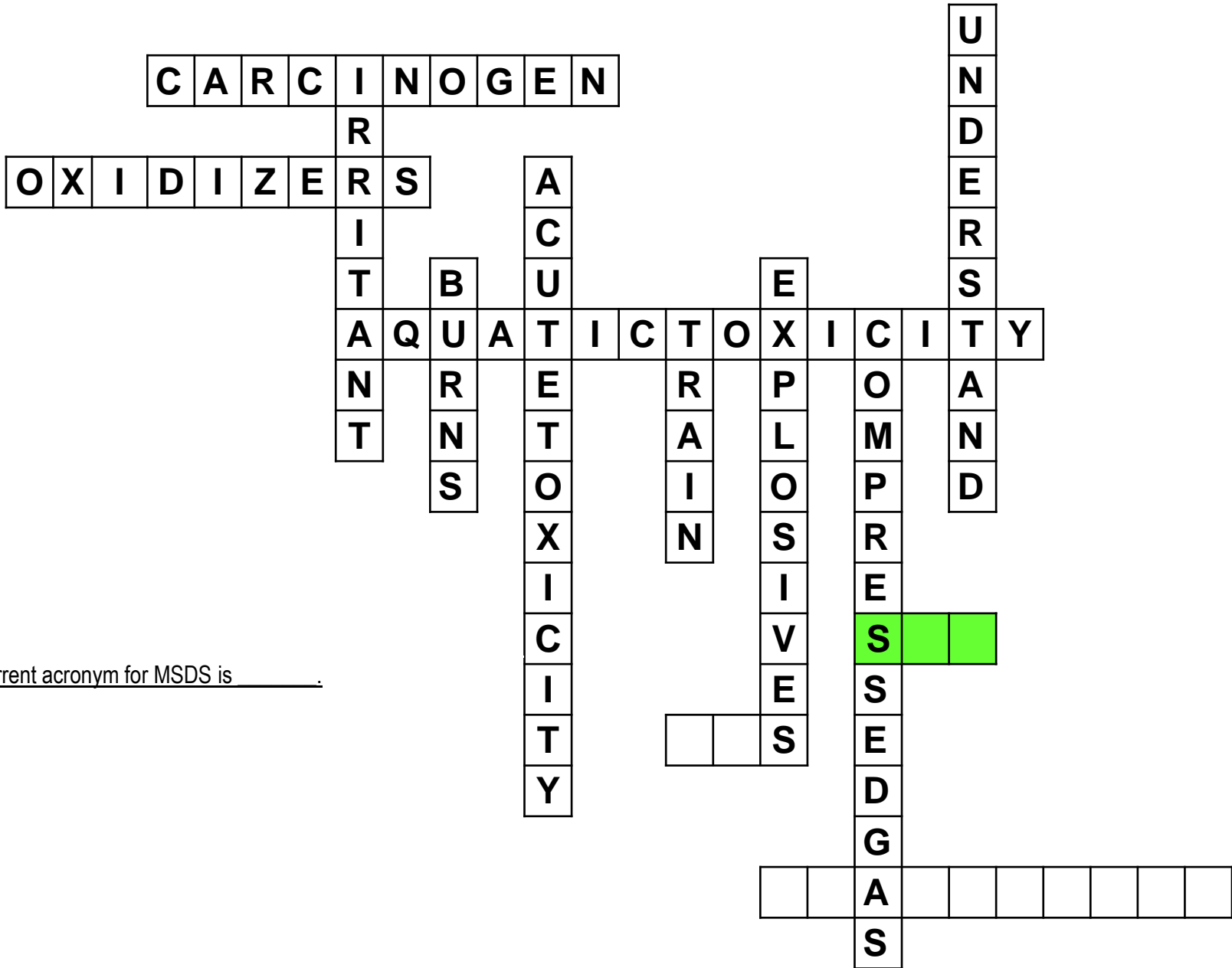
10. "Gas Cylinder" pictogram represents _____.



Across

Down

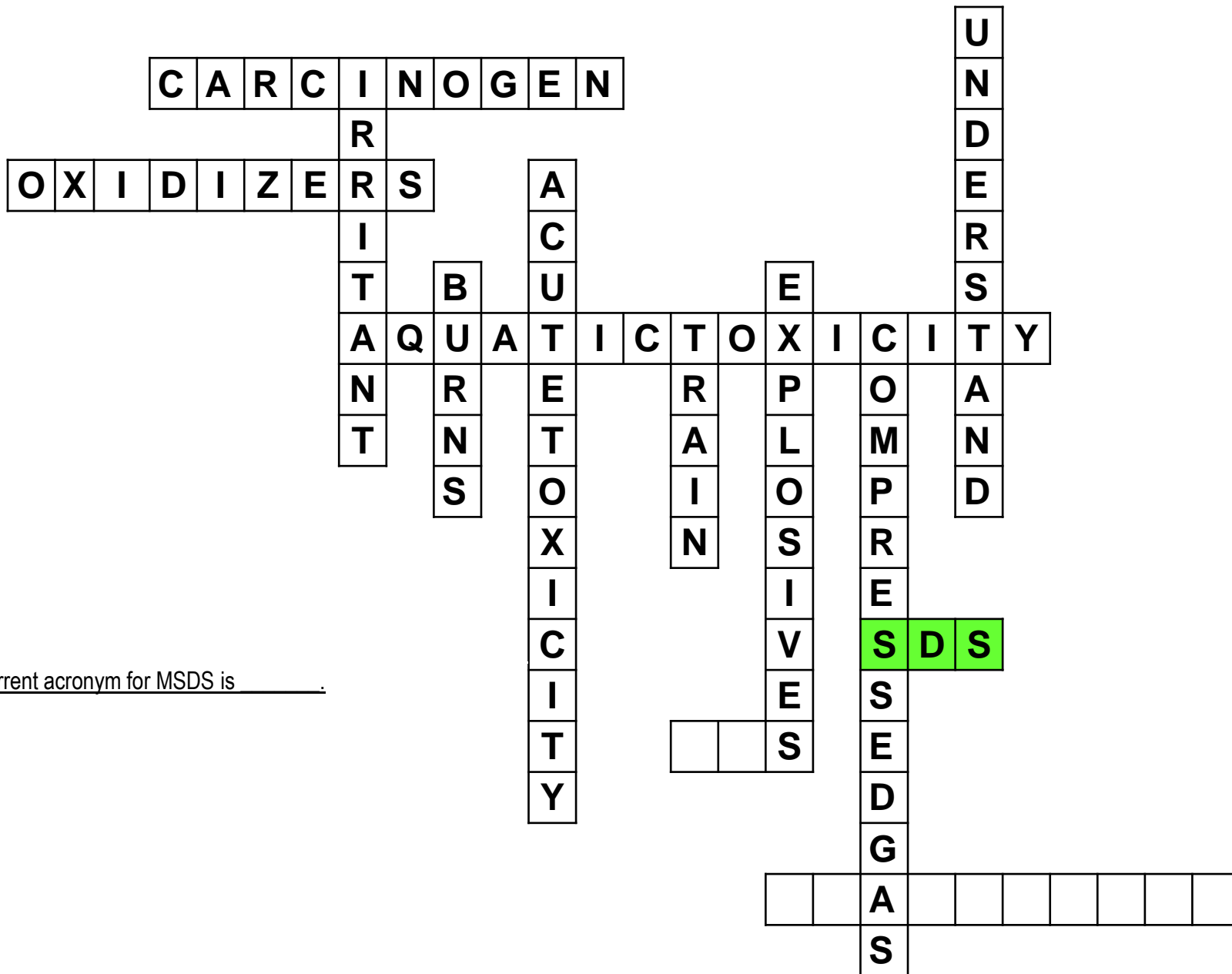
10. "Gas Cylinder" pictogram represents _____.



Across

11. Current acronym for MSDS is _____.

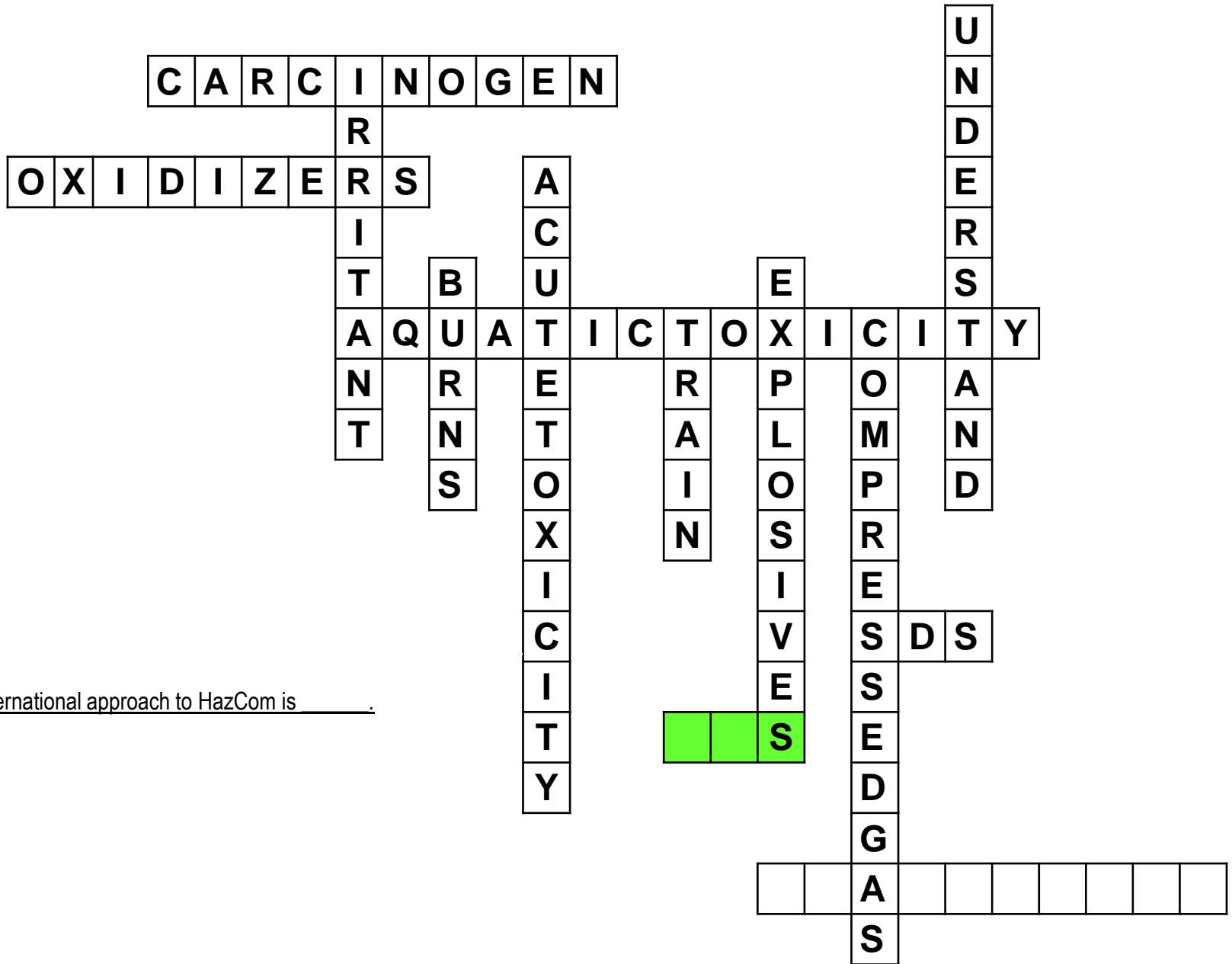
Down



Across

11. Current acronym for MSDS is **MSDS**

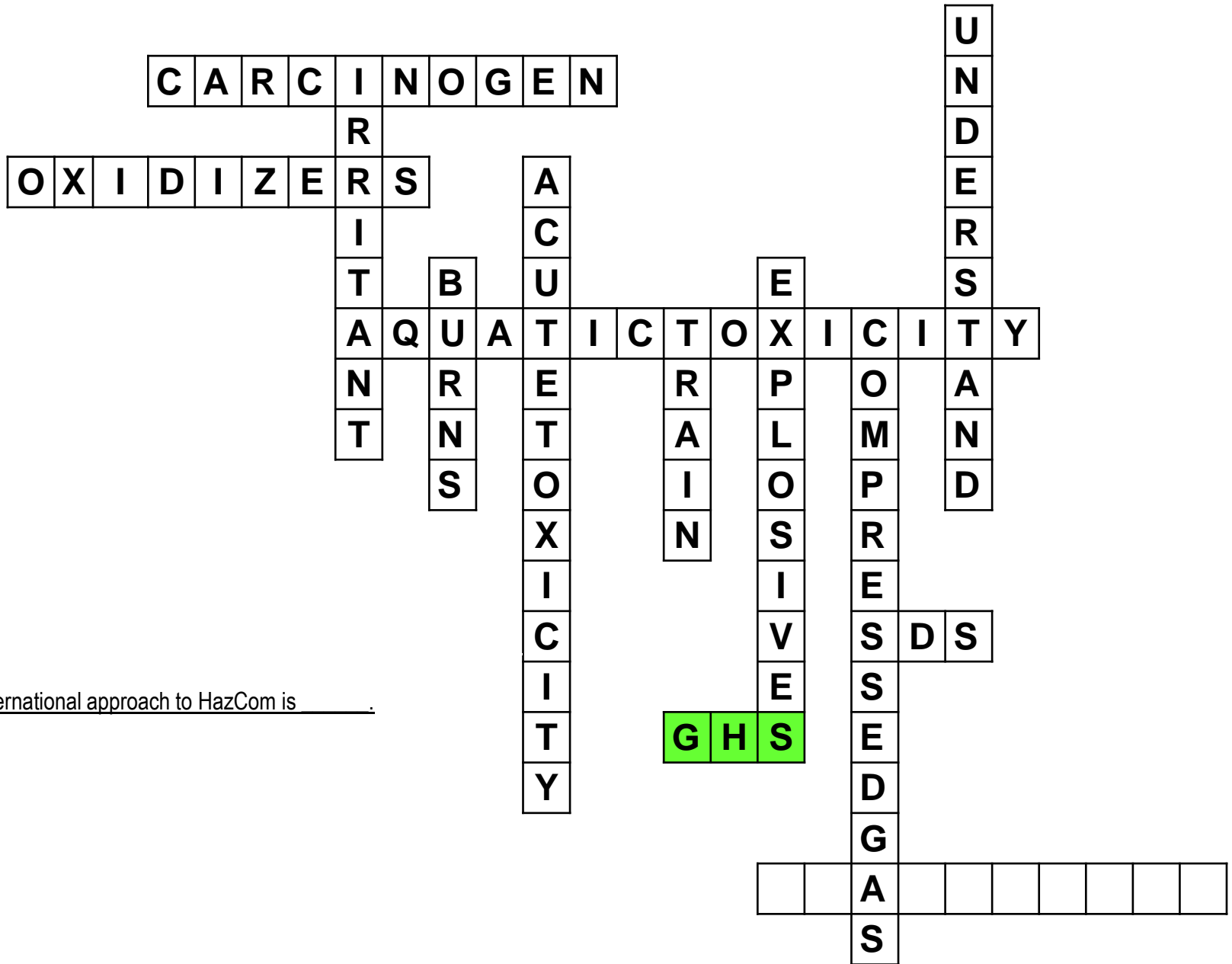
Down



Across

12. International approach to HazCom is _____.

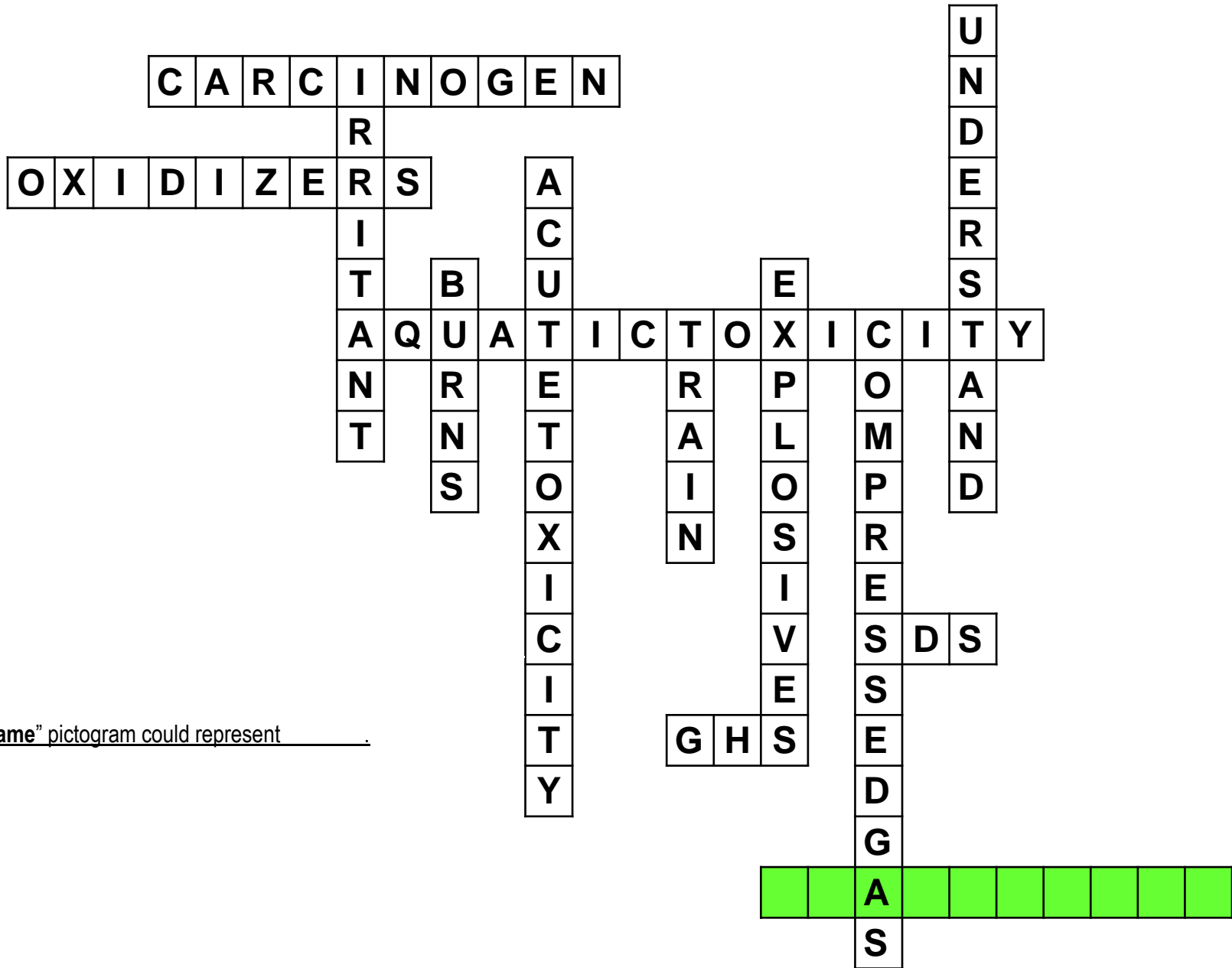
Down



Across

12. International approach to HazCom is _____.

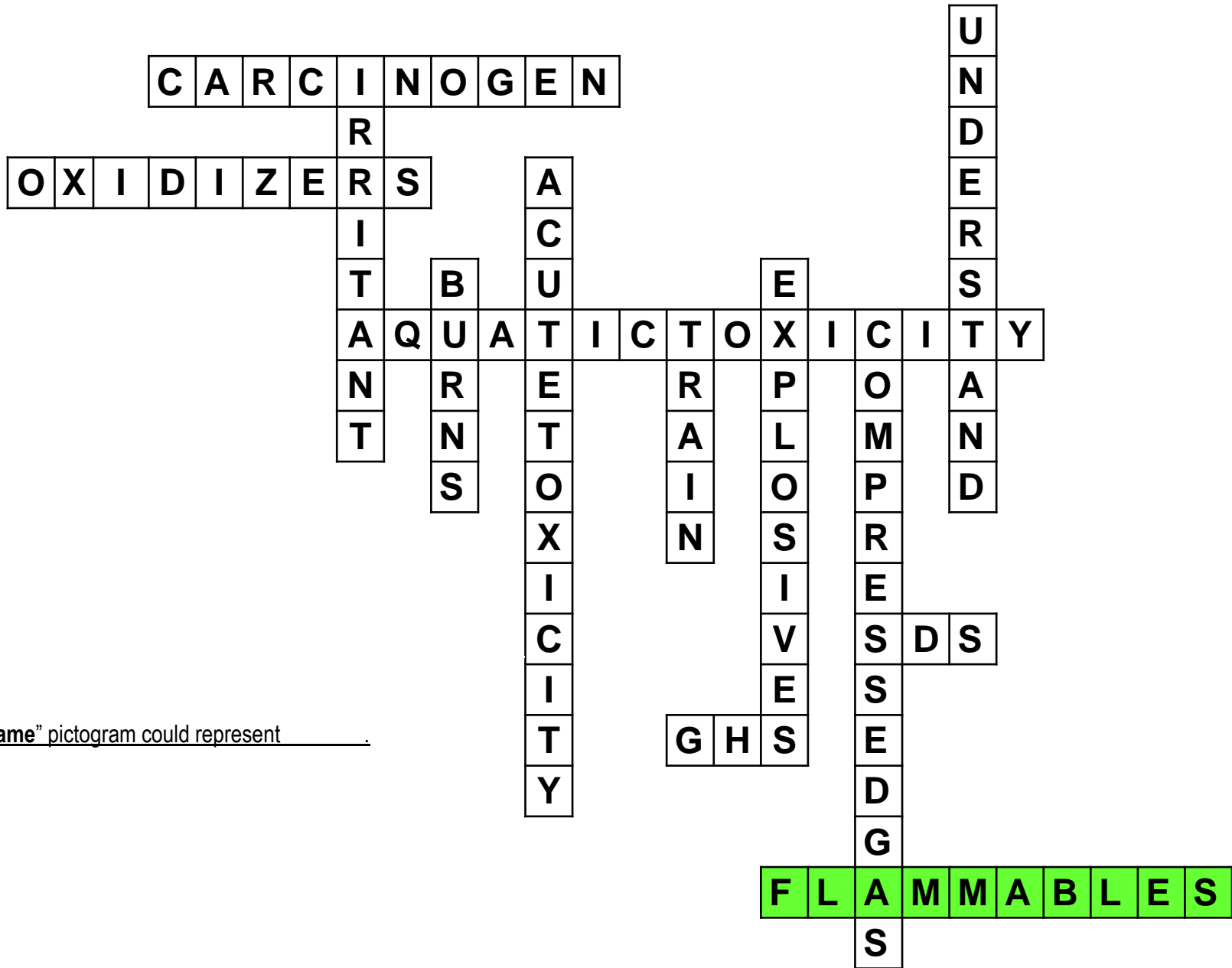
Down



Across

13. "Flame" pictogram could represent _____.

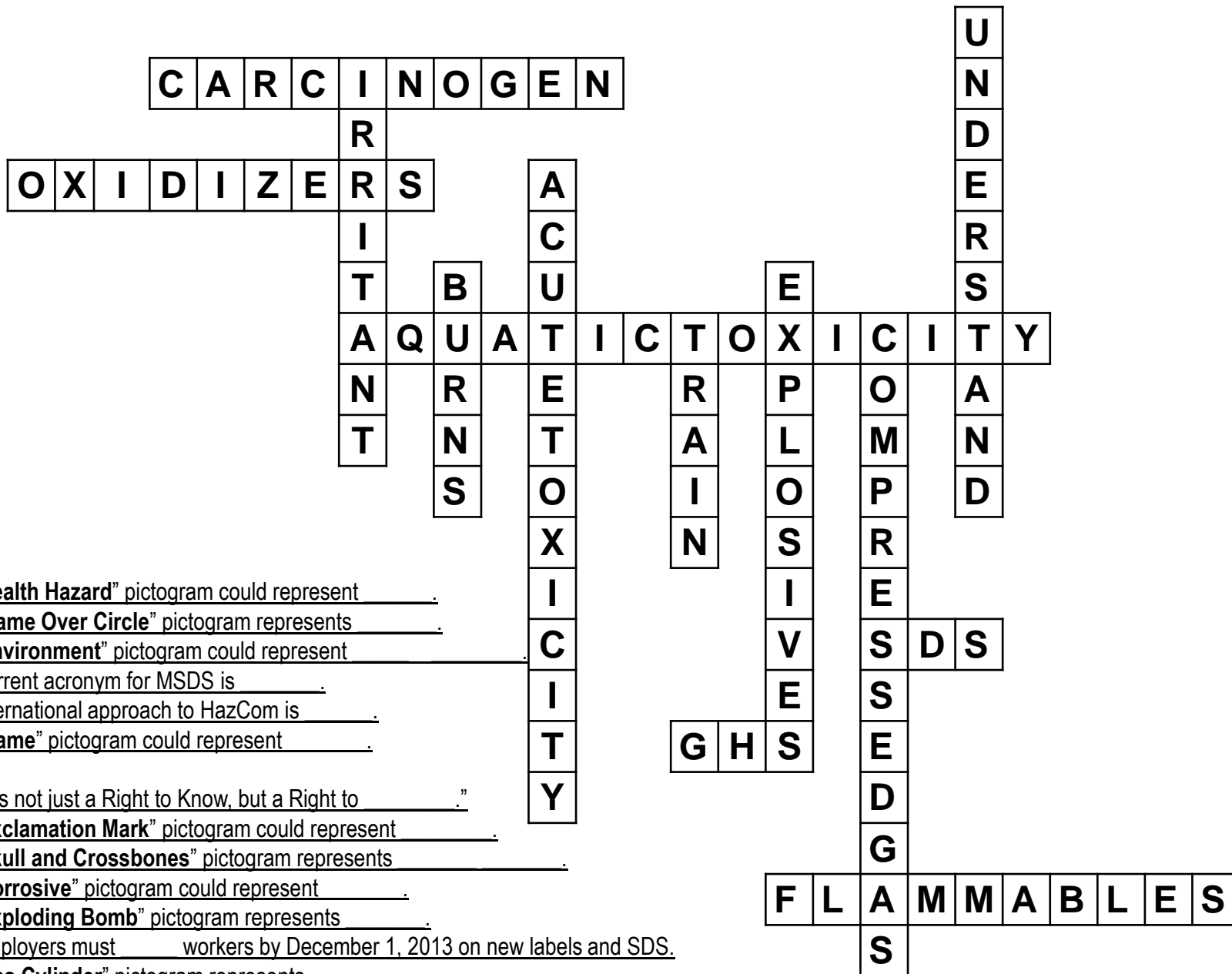
Down



Across

13. "Flame" pictogram could represent _____.

Down



Across

2. "Health Hazard" pictogram could represent _____.
4. "Flame Over Circle" pictogram represents _____.
8. "Environment" pictogram could represent _____.
11. Current acronym for MSDS is _____.
12. International approach to HazCom is _____.
13. "Flame" pictogram could represent _____.

Down

1. "It is not just a Right to Know, but a Right to _____."
3. "Exclamation Mark" pictogram could represent _____.
5. "Skull and Crossbones" pictogram represents _____.
6. "Corrosive" pictogram could represent _____.
7. "Exploding Bomb" pictogram represents _____.
9. Employers must _____ workers by December 1, 2013 on new labels and SDS.
10. "Gas Cylinder" pictogram represents _____.

Safety Data Sheets (SDS):

“The Expanded Label”

**Good Chemical Company
Safety Data Sheet**

Material Name: Diesel Fuel, All Types
Synonyms: Ultra Low Sulfur Diesel, Low Sulfur Diesel, No. 2 Diesel, Motor Vehicle Diesel Fuel, Non-Road Diesel Fuel, Locomotive/Marine Diesel Fuel

***** Section 1 - Product and Company Identification *****

Manufacturer Information
Good Chemical Company
555 Main Street
Goodville, NC 27777

Phone: 919-888-8888
Emergency # 800-424-9300 CHEMTREC

***** Section 2 - Hazards Identification *****

GHS Classification:
Flammable Liquids - Category 3
Skin Corrosion/Irritation - Category 2
Germ Cell Mutagenicity - Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Aspiration Hazard - Category 1
Hazardous to the Aquatic Environment, Acute Hazard - Category 3

GHS LABEL ELEMENTS
Symbol(s)



Signal Word
DANGER

Hazard Statements
Flammable liquid and vapor.
Causes skin irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements
Prevention
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.

Page 1 of 10 Revision Date 8/30/12

SDS (16 Section Format)

1. Identification
2. Hazard(s) Identification
3. Composition/Information on Ingredients
4. First Aid Measures
5. Fire Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls/Personal Protection
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological Information
- 12. Ecological Information***
- 13. Disposal Consideration***
- 14. Transport Information***
- 15. Regulatory Information***
16. Other Information

**Good Chemical Company
Safety Data Sheet**

Material Name: Diesel Fuel, All Types
Synonyms: Ultra Low Sulfur Diesel, Low Sulfur Diesel, No. 2 Diesel, Motor Vehicle Diesel Fuel, Non-Road Diesel Fuel, Locomotive/Marine Diesel Fuel

***** Section 1 - Product and Company Identification *****

Manufacturer Information
Good Chemical Company Phone: 919-888-8888
555 Main Street Emergency # 800-424-9300 CHEMTREC
Goodville, NC 27777

***** Section 2 - Hazards Identification *****

GHS Classification:
Flammable Liquids - Category 3
Skin Corrosion/Irritation - Category 2
Germ Cell Mutagenicity - Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Aspiration Hazard - Category 1
Hazardous to the Aquatic Environment, Acute Hazard - Category 3

GHS LABEL ELEMENTS
Symbol(s)



Signal Word
DANGER

Hazard Statements
Flammable liquid and vapor.
Causes skin irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements
Prevention
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.

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*These sections not regulated by OSHA

SDS Section 1

1910.1200 Appendix D

- Identification
 - Product identifier
 - Other means of identification
 - Recommended use of the chemical and restrictions on use
 - Name, address and telephone number of the chemical manufacturer, importer, or other responsible party
 - Emergency phone number.
-

Diesel Fuel

- Hazard(s) Identification

Danger

- Classification of the chemical
 - Signal word, hazard statement(s), symbol(s) and precautionary statement(s)
 - Describe any hazards not otherwise classified that have been identified
 - Where an ingredient with unknown acute toxicity is used in a mixture at a concentration $\geq 1\%$ and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.
-

SDS Section 3

1910.1200 Appendix D

- Composition/Information on Ingredients
 - For substances
 - For mixtures
 - For all chemicals where a trade secret is claimed



- First Aid Measures

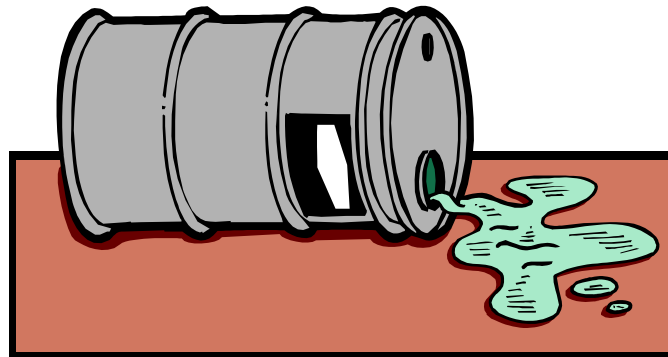
- Description of necessary measures, subdivided according to the different routes of exposure (inhalation, skin/eye contact and ingestion)
- Most important symptoms/effects, acute and delayed
- Indication of immediate medical attention and special treatment needed



- Fire Fighting Measures
 - Suitable (and unsuitable) extinguishing media
 - Specific hazards arising from the chemical (nature of any hazardous combustion products).
 - Special protective equipment and precautions for firefighters.



- Accidental Release Measures
 - Personal precautions, protective equipment and emergency procedures
 - Methods and materials for containment and cleaning up



SDS Section 7

1910.1200 Appendix D

- Handling and Storage
 - Precautions for safe handling
 - Conditions for safe storage, including any incompatibilities

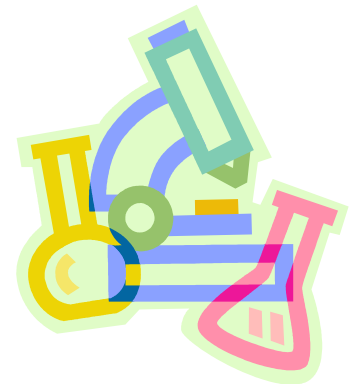


- Exposure Controls/Personal Protection
 - OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
 - Appropriate engineering controls.
 - Individual protection measures, such as personal protective equipment.



● Physical and Chemical Properties

- Appearance (physical state, color)
- Odor
- Odor threshold
- pH
- Melting point/freezing point
- Initial boiling point and boiling range
- Flash point
- Evaporation rate
- Flammability (solid, gas)
- Upper/lower flammability or explosive limits
- Vapor pressure
- Vapor density
- Relative density
- Solubility(ies)
- Partition coefficient: n-octanol/water
- Auto-ignition temperature
- Decomposition temperature
- Viscosity



SDS Section 10

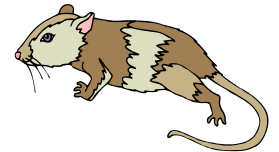
1910.1200 Appendix D

- Stability and Reactivity
 - Reactivity
 - Chemical stability
 - Possibility of hazardous reactions
 - Conditions to avoid (e.g., static discharge, shock, or vibration)
 - Incompatible materials
 - Hazardous decomposition products.
-



- Toxicological Information

- Likely routes of exposure (inhalation, ingestion, skin and eye contact)
- Symptoms related to the physical, chemical and toxicological characteristics
- Delayed and immediate effects and also chronic effects from short- and long-term exposure
- Numerical measures of toxicity (such as acute toxicity estimates)
- Is the chemical identified as a carcinogen?



- Ecological Information
 - Ecotoxicity (aquatic and terrestrial)
 - Persistence and degradability
 - Bioaccumulative potential
 - Mobility in soil
 - Other adverse effects (such as hazardous to the ozone layer).



- Disposal Considerations
 - Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging



SDS Section 14

1910.1200 Appendix D

- Transport Information
 - UN number
 - UN proper shipping name
 - Transport hazard class(es)
 - Packing group
 - Environmental hazards
 - Transport in bulk
 - Special precautions



SDS Section 15

1910.1200 Appendix D

- Regulatory Information
 - Safety, health and environmental regulations specific for the product in question



SDS Section 16

1910.1200 Appendix D

- Other Information
 - The date of preparation of the SDS or the last change to it



SDS Activity

An employee wants to transfer diesel from a forklift to a fuel can, but ingests some diesel fuel while siphoning the fuel by mouth. What first aid should be provided?

SDS Activity

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

SDS Activity

What are the potential short- or long-term health effects from overexposure to diesel fuel?

SDS Activity

- ✓ **Skin irritation**
 - ✓ **Genetic defects**
 - ✓ **Cancer**
 - ✓ **Respiratory irritation**
 - ✓ **Drowsiness or dizziness**
 - ✓ **May be fatal if swallowed and enters airways**
-

SDS Activity

An employee is running a diesel powered forklift in a small warehouse. From the SDS, what is our primary safety concern in regard to inhalation hazards?

SDS Activity

Potential Health Effects: Inhalation

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation and death.

SDS Activity

What type of protective gloves are indicated to protect the hands from direct exposure to diesel fuel?

SDS Activity

Personal Protective Equipment: Hands
Gloves constructed of nitrile, neoprene, or PVC are recommended.

SDS Activity

There is a small fire involving diesel fuel. If an employee chooses to fight it with an extinguisher, what type of extinguisher should be used?

SDS Activity

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam and other gaseous agents.

SDS Activity

Per the SDS, what is the flash point for diesel fuel?

SDS Activity

Flash Point:

>125 F (>52 C) minimum

SDS Activity

What are the HMIS hazard rating numbers for health, fire and reactivity?

SDS Activity

- ✓ **Health – 1*** **Slight (Chronic)**
 - ✓ **Fire – 2** **Moderate**
 - ✓ **Reactivity – 0** **Minimal**
-

SDS Activity

What is the GHS signal word for diesel fuel?

What hazard statement elevated the signal word risk from “WARNING” to “DANGER”?

SDS Activity

What is the GHS Signal Word for Diesel Fuel?

DANGER

What hazard statement elevated the signal word risk from “WARNING” to “DANGER”? *May be fatal if swallowed and enters airways.*

Summary

We have covered:

- Manufacturer/distributor/importer label elements
- SDS format
- Crossword and SDS activities



Thank You For Attending!

Final Questions?

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