

# AGENDA

## OFFICIAL MEETING NOTICE AND AGENDA

A meeting of the MARATHON COUNTY LOCAL EMERGENCY PLANNING COMMITTEE will be held at Marathon County Emergency Management, 1308 West St., Wausau, at 2:00 p.m., on Thursday, January 13<sup>th</sup>, 2022 and virtually at:

Meeting Link:

<https://ccitc.webex.com/ccitc/j.php?MTID=ma4a803a4313adac1c76a876eb20c8973>

Password:

MaraCoLEPC

Join by phone:        1-408-418-9388 United States Toll  
                              Access Code: 2493  
                              Pin: 8486

1. Meeting Called To Order
2. Roll Call
3. Approval of September Meeting Minutes
4. Review and Possible Approval of Off-Site Plans \*
5. EM Office: Review Spill Notification Reports and other updates
6. Public Comments
7. Schedule Next Meeting Date / Time
8. Adjourn

\* Copies of Off-Site Plans are available prior to meeting for members to review.

Any person planning to attend this meeting and may need special accommodation in order to participate should call the County Clerk's office at 715-261-1500 or e-mail [infomarathon@co.marathon.wi.us](mailto:infomarathon@co.marathon.wi.us) one business day before the meeting.

*John Peralta*

John Peralta, Chair

Marathon County Local Emergency Planning Committee

<b>EMAILED TO MEDIA</b>
Date: <u>1-6-21</u>
By: <u>JAMES WILLIAMS</u>

<b>POSTED AT THE MARATHON COUNTY COURTHOUSE:</b>
Date: <u>1-7-21</u>
By: <u>TOSHIA RANALLO</u>

# 1/13/22 MEETING MINUTES

1. Meeting Called To Order
2. Roll Call

	SOSAEH CONNAHVICHNAH
	SCOTT CORBETT / Mike/MARISSA
	<b>DALE GROSSKURTH</b>
X	FRANK HANOUSEK / Bill
	MELEESA JOHNSON / Dave
X	BOB BARTECK
X	SARAH DOWIDAT
	STEVE LEWENS
	JOHN PERALTA
X	SARAH ROTHMEYER
	AARON RUFF

X	SCOTT PARKS / Jason / Sean
X	NATHAN PAULS
X	BILL PENKER / Nick
X	BOB POUND
X	ED RADTKE / Sarah
X	PHILIP RENTMEESTER / James
X	KELLY ZAGRZEBSKI / Don
	KATIE ROSENBERG
X	RYAN BERDAL
	JEREMY KOPP

3. Approval of September Meeting Minutes
  - a. MOTION BY BOB POUND
  - b. SECOND BY LT. BERDAL
  - c. APPROVED
4. Review and Possible Approval of Off-Site Plans
  - a. MOTION TO APPROVE CHIEF BARTEK
  - b. SECOND BY SHERIFF PARKS
  - c. APPROVED BY VOTE
5. EM Office: Review Spill Notification Reports and other updates
  - a. EM OFFICE PROVIDED INFORMATION ON:
    - i. FOREMOST FARMS RELEASE
    - ii. UPCOMING TRAINING MARCH 24 IN WAUSAU IN CONJUNCTION WITH WING
    - iii. MASS FATALITY TRAINING ONLINE IN MARCH
    - iv. UNIVERCITY PROJECT WITH STUDENTS
    - v. INFORMATION PROVIDED ON PPE DISTRIBUTION
    - vi. UPCOMING CLASSES COMING TO THE AREA
    - vii. SPECIAL EVENTS PLANNING
6. Public Comments
  - a. NONE OFFERED
7. Schedule Next Meeting Date / Time
  - a. SCHEDULED FOR MARCH 10<sup>TH</sup> 1400
8. Adjourn
  - a. ADJOURNED BY VICE CHAIR PENKER



You are Here: [Home](#) > [Calendar](#)

## County Calendar

### LEPC - LOCAL EMERGENCY PLANNING COMMITTEE

Start Date/Time: Thursday, January 13, 2022 2:00 P1:1

End Date/Time: Thursday, January 13, 2022 3:30 P1:1

Category: [County Board/Committees](#)

Description:

[The Marathon County Local Emergency Planning Committee \(LEPC\) Agenda for Thursday, January 13, 2022, at 2:00 p.m. is available below.](#)

#### [Agenda](#)

Created by Toshia R. On Friday, January 7, 2022

[Return](#)

[Export](#)



EPCRA HAZARDOUS MATERIALS FACILITY OFF-SITE PLAN  
TRANSMITTAL FORM AND REVIEW GUIDE

COUNTY: Marathon

NEW  UPDATE  FINAL UPDATE

Facility ID No. : 62539

Facility Name: MARATHON COUNTY PARKS DEPARTMENT

Facility Address: 1201 STEWARD AVE. MULTI-PURPOSE BUILDING # 2, WAUSAU, WI 54403 /

**STATEMENT OF PLANNING PROCESS**

This plan has been prepared in accordance with state and local requirements and is ready to be made a part of the County Emergency Operations Plan (EOP) / Emergency Response Plan (ERP) upon Wisconsin Emergency Management (WEM) / State Emergency Response Commission (SERC) acceptance. This plan meets the facility off-site planning guidance as established by WEM / SERC. Acceptance of this plan is for planning purposes and does not verify facility compliance with the requirements of EPCRA.

**FACILITY SIGNATURES:**

I have reviewed the attached plan and to the best of my knowledge, all facility information is true, accurate, and complete. The plan is consistent with facility emergency plans and procedures.

[Signature] Facility Coordinator 12/17/21 Date

**COUNTY SIGNATURES**

I have reviewed the attached plan and to the best of my knowledge, all information is true, accurate, and complete.

[Signature] County Local Emergency Planning Committee Chair 2/22/22 Date

[Signature] County Emergency Management Director 2.23.2022 Date

**WEM / SERC ACCEPTANCE:**

This plan has been reviewed and meets the off-site planning guidance as established by WEM / SERC.

\_\_\_\_\_  
WEM Regional Director Date

NOTE: Facility Off-Site Plan Review Guide attached: Yes  No

**EPCRA HAZARDOUS MATERIALS FACILITY OFF-SITE PLAN  
TRANSMITTAL FORM AND REVIEW GUIDE**

COUNTY: Marathon

NEW  UPDATE  FINAL UPDATE

Facility ID No. : 62539

Facility Name: MARATHON COUNTY PARKS DEPARTMENT

Facility Address: 1201 STEWARD AVE. MULTI-PURPOSE BUILDING # 2, WAUSAU, WI 54403

**FACILITY OFF-SITE PLAN REVIEW GUIDE**

<u>EPCRA Facility Off-Site Plan Elements</u>	<u>Page Number Reference</u>
1) The facility identification with address.	1
2) Facility Coordinator / Alternate Coordinator	1
3) Extremely Hazardous Substances (EHS) chemicals Identified with CAS numbers and maximum amount	2
4) Primary emergency responders identified	2, 3
5) Support and resources available from facility	3
6) General Information / Assumptions (Disclaimer)	4
7) Hazard analysis summary	5
8) Special facilities affected	5
9) Population protection	6
10) Special considerations	6
11) Site Plan / Facility Layout	Attachment 3

**EPCRA HAZARDOUS MATERIALS FACILITY OFF-SITE PLAN  
TRANSMITTAL FORM AND REVIEW GUIDE**

COUNTY: Marathon

NEW  UPDATE  FINAL UPDATE

Facility ID No. : 62539

Facility Name: MARATHON COUNTY PARKS DEPARTMENT

Facility Address: 1201 STEWARD AVE. MULTI-PURPOSE BUILDING # 2, WAUSAU, WI 54403

---

---

- 12) Distribution list: 7
- Facility  
Fire Department of jurisdiction  
Wisconsin Emergency Management- Region Office  
Designated Hazmat team  
County Emergency Management Office  
Adjacent County Emergency Management Office when impacted by vulnerability zone
- 13) Required Attachments
- A. Vulnerability Zone map highlighting special facilities Attachment 2
- B. Safety Data Sheet (SDS) for each EHS Attachment 5
- C. Vulnerability Zone Calculations Attachment 4
- D. Transportation route(s) map Attachment 1

**SECTION I: FACILITY INFORMATION**

<b>Facility Name:</b>	MARATHON COUNTY PARKS DEPT.
<b>Facility Location :</b>	1201 Stewart Ave. Multi-Purpose Bldg. #2 Wausau, WI 54401
<b>Mailing Address :</b>	Attn: Andrew Sims 900 W. Pardee St Wausau, WI 54403
<b>Facility Phone :</b>	715-261-1577
<b>WEM Facility I.D. :</b>	62539

**SECTION II: FACILITY COORDINATOR INFORMATION**

**Facility Coordinator**

<b>Name :</b>	ANDREW SIMS
<b>Position:</b>	Assistant Director - Operations
<b>Work Phone :</b>	715-261-1573
<b>Cell / 24 Hr. Phone :</b>	715-870-1017
<b>E-Mail :</b>	<a href="mailto:andrew.sims@co.marathon.wi.us">andrew.sims@co.marathon.wi.us</a>

**Alternate Coordinator**

<b>Name :</b>	BRADLEY MROCZENSKI
<b>Position:</b>	Operations Manager
<b>Work Phone :</b>	715-261-1577
<b>Cell / 24 Hr. Phone :</b>	715-432-2797
<b>E-Mail :</b>	<a href="mailto:bradley.mroczenki@co.marathon.wi.us">bradley.mroczenki@co.marathon.wi.us</a>



**SECTION III:**

**CHEMICALS ON-SITE: EXTREMELY HAZARDOUS SUBSTANCES**

**Basic Information:**

The intent and purpose of Off-Site Facility Plans is to make the public and local responders aware of the potential hazards that are on-site at these facilities and the impact that affects the surrounding community. A portion of this Off-Site Plan is the development of a 'Worst Case Scenario' for an EHS chemical release.

WEM (Wisconsin Emergency Management) / SERC (State Emergency Response Commission), requires the use of the EPA's TECHNICAL GUIDANCE FOR HAZARD ANALYSIS or computer generated software based on the TECHNICAL GUIDANCE, (CAMEO), for calculating Vulnerability Zones for Off-Site planning purposes.

A vulnerability analysis provides an estimation of the vulnerable zone for each EHS reported, as well as the conditions and assumptions that were used to estimate each vulnerability zone.

A vulnerability zone is defined as an estimated geographical area that may be subject to concentrations of an airborne Extremely Hazardous Substance (EHS) at levels that could cause irreversible acute health effects or death to human populations within the area following an accidental release.

<b>EHS ON-SITE SUBSTANCES</b>					
<b>CAS #</b>	<b>Chemical Name / Trade Name</b>	<b>Quantity (pounds)</b>	<b>Vulnerability Zone (day-time)</b>	<b>Vulnerability Zone (night-time)</b>	<b>Rural / Urban</b>
7664-41-7	Anhydrous Ammonia	Daily Max 2,000 #	.2 Miles D-Class	1.0 Miles F-Class	Urban
A COMPLETE LIST OF CHEMICALS AND CHEMICAL LOCATIONS IS AVAILABLE FROM THE FACILITY COORDINATOR					

**SECTION IV: EMERGENCY RESPONDERS**

**Primary Responders**

Wausau Fire Department	9-1-1 (715) 849-7792
Wausau Police Department	9-1-1 (715) 849-7792
Marathon County Sheriff's Office	9-1-1 (715) 849-7792



**Outside Resources Available**

**CITY OF WAUSAU FIRE DEPARTMENT'S LEVEL "A" REGIONAL  
HAZARDOUS MATERIALS RESPONSE TEAM**

**Telephone: 9-1-1**

(715) 261-7900	City of Wausau Fire Department
(715) 849-7792	Marathon County Communications Center
(800) 943-0003	WEM Toll-Free Emergency Hotline

**DESIGNATED MARATHON COUNTY HAZMAT TEAM:  
WAUSAU FIRE DEPARTMENT**

**Telephone: 9-1-1**

(715) 849-7792      Marathon County Communications Center

**Private Sector Hazardous Materials Response / Clean-Up Contractor:**

**Kuhlman, Inc.**

Company / Contractor Name

---

**N58 W 16865 Ridgewood Dr., Menomonee Falls, WI 53051**

Address

---

**262-252-9400**      (cell – 414-828-6003 – Ryan Kuhlman)

Telephone Number(s)

**SECTION V: SUPPORT AVAILABLE AT FACILITY**

Does This Facility Have An In-House Hazardous Materials Response Team?

\_\_\_ YES       X  NO

Chemical Monitoring Equipment	Personal Protective Equipment	Other Equipment / Supplies
Ammonia Detector	Rubber Gloves Boots Slickers	1/2" and 1" Water Lines

**SECTION VI:****GENERAL INFORMATION AND ASSUMPTIONS (DISCLAIMER)**

The vulnerability zones set forth in this plan are based on the EPA's Technical guidance for Hazards Analysis and are based on a credible worst-case scenario. Daytime (D-Class) and nighttime (F-Class) releases are included in this plan which helps identify the potential area(s) of impact should an airborne release of an EHS chemical occur. Scenarios for a release may be described in Section VII (Hazard Analysis). Attachment 2 of this plan shows the vulnerability zone map(s) highlighting the area(s) that could be impacted by a release. The vulnerability zones are NOT intended to be used as a guide for population protection in fire related incidents.

The Marathon County LEPC (Local Emergency Planning Committee), based on the State's stipulations for modeling guidance, has designated CAMEO Suite (includes CAMEO, MARPLOT and ALOHA) for Vulnerability Zone calculations for Off-Site Plans. Vulnerability zone modeling makes some assumptions concerning the substances released. Guidance from the State of Wisconsin's "Wisconsin EPCRA Guidance and Plan Template" and the EPA's "Technical Guidance for Hazard Analysis" is utilized while creating the Off Site Plans. It should be noted that CAMEO cannot compute zones greater than 10 miles, nor less than 0.1 miles. Thus, results that fall into these situations will be noted as >10 Miles or <.1 Miles.

The field Incident Commander shall determine the actual response to an incident and the affected area may vary from the planning vulnerability zone identified in this plan. The decision to shelter-in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, or larger than the credible worst-case scenario zone identified herein.

The vulnerability zones determined in this plan are for general planning purposes only.

**SECTION VII: HAZARD ANALYSIS SUMMARY**

This facility is a seasonal indoor ice arena that is in operation October through March of each year (161 days). There are 6 employees with 2 shifts, 7:00 a.m. to 3:00 p.m. and 3:00 p.m. to 11:00 midnight.

There are two sheets of ice approximately 85' x 200'. Anhydrous Ammonia is used to cool the calcium chloride brine which is used to cool the concrete floors that sustain the ice sheets. The calcium chloride inhibitor is used as a rust preventive in the cooling piping which is encased in the concrete floor. The refrigeration system is in operation during the seasonal time period. During the summer months, the ammonia is stored in a large indoor tank in the compressor room. The calcium chloride stays in the floor piping.

The main concern for a chemical release would be a broken ammonia line or brine piping. The ammonia is not handled by the employees. There is a contract in place with Kuhlman, Inc., who has personnel that are licensed to handle ammonia.

**SECTION VIII: SPECIAL FACILITIES AFFECTED**

<b>.2 MILE VULNERABILITY ZONE</b>		
Lincoln Elementary School	720 S. 6 <sup>th</sup> Ave., Wausau	261-2650
<b>1.0 MILE VULNERABILITY ZONE The Above Facilities – Plus The Following</b>		
GD Jones Elem School	1018 S. 12 <sup>th</sup> Ave., Wausau	261-2150
John Muir Middle School	1400 W. Stewart Ave., Wausau	261-2400
Montessori School of Wausau	1921 Wegner St., Wausau	842-7917
Trinity Lutheran School	501 Stewart Ave., Wausau	848-0166
UW Dorms	615 Garfield Ave., Wausau	842-5600
UW Marathon County	518 S. 7 <sup>th</sup> Ave., Wausau	261-6100
Island Place Comm. Apartments	400 River Dr., Wausau	848-1369



**SECTION IX: POPULATION PROTECTION**

The decision to shelter-in-place or to evacuate will be made by the on-scene commander as appropriate. The lead time for a hazardous materials incident may be very short. As a result, there may not be much time for safe evacuation, especially when extremely toxic chemical fumes may be exposed to the population. In this case, the decision may be made to shelter-in-place. Preferred areas to shelter would be interior hallways, rooms without windows or exterior doors, enclosed stairways and rooms that are opposite of the chemical threat. Doors, windows and other potential air leaks should be sealed to prevent toxic fumes from entering.

Roles and responsibilities regarding evacuation and sheltering may be found in the Marathon County Emergency Response Plan (ERP), Emergency Support Function (ESF) 6.

**SECTION X: SPECIAL CONSIDERATIONS**

There is a remote possibility of parking problems on a very heavy use day. However, the area is designated as a fire lane and patrolled by the Wausau Fire Department.

**SECTION XI: TRANSPORTATION ROUTE**

If there is a certain route that must be followed for transportation of the EHS(s), please provide that information. Your jurisdiction may only allow certain roads to be used (or not used).

If there are no requirements and all roads to and from your facility may be used for chemical transport, mark 'ok' next to the following statement.

There are no local ordinances in Marathon County that mandate specific routes for vehicles carrying Extremely Hazardous Substances (EHS's). Thus, all chemicals may be transported over any local, state, or federal highway in which weight limits are met.

**SECTION XII: ATTACHMENTS:**

1. Transportation Route Map
2. Vulnerability Zone Map(s)
3. Facility Layout & Photographs
4. CAMEO Vulnerability Zone Calculations
5. SDS For Each EHS



**MARATHON COUNTY PARKS DEPT.**

WEM ID #62539

**Distribution List:**

Facility

Fire Department of Jurisdiction

Police Department of Jurisdiction

Wisconsin Emergency Management (Regional Office)

Designated Hazmat Team

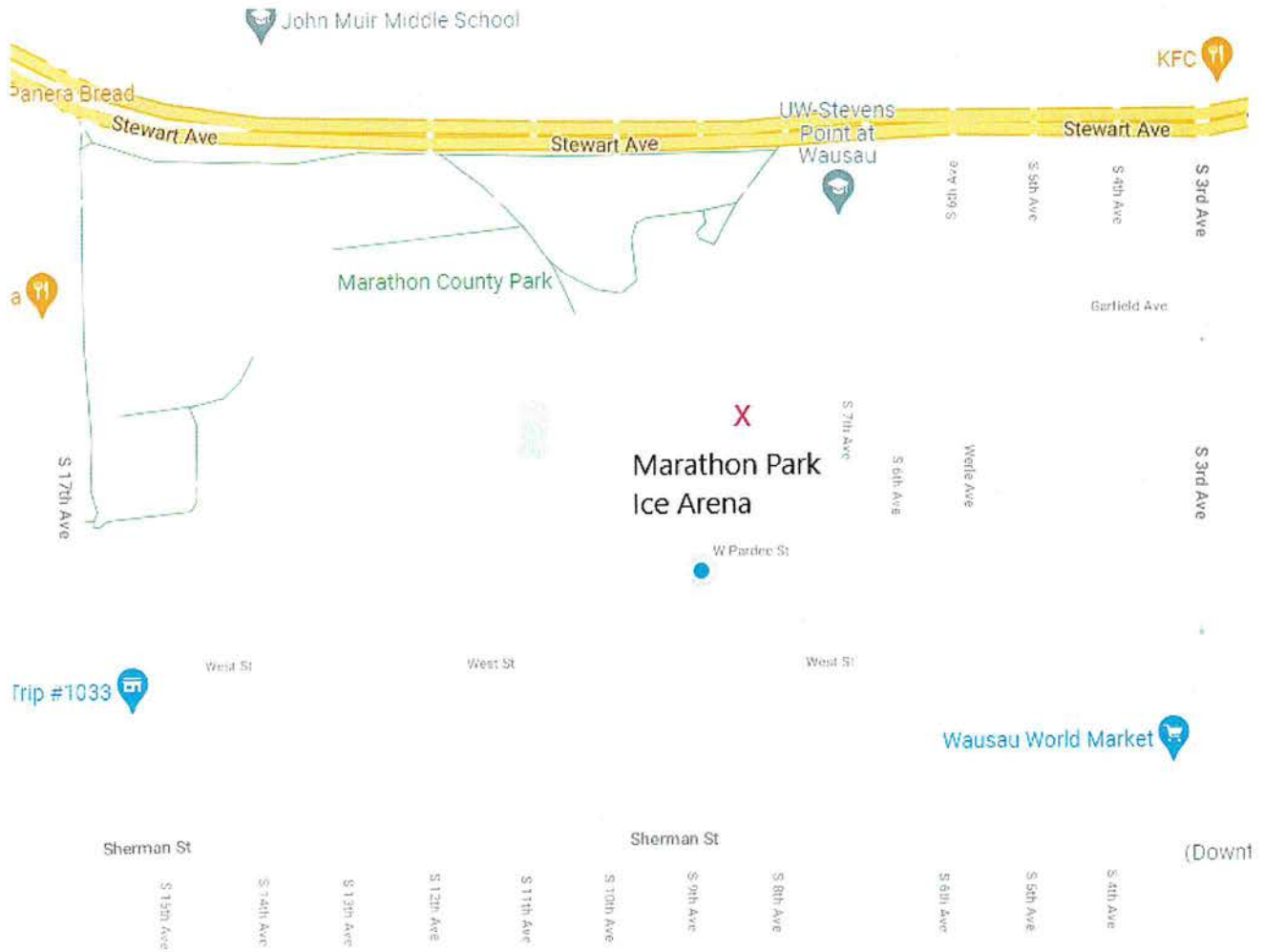
County Emergency Management Office

County Communications Center

Adjacent County Emergency Management Office (when impacted by vulnerability zone)

WHOPRS

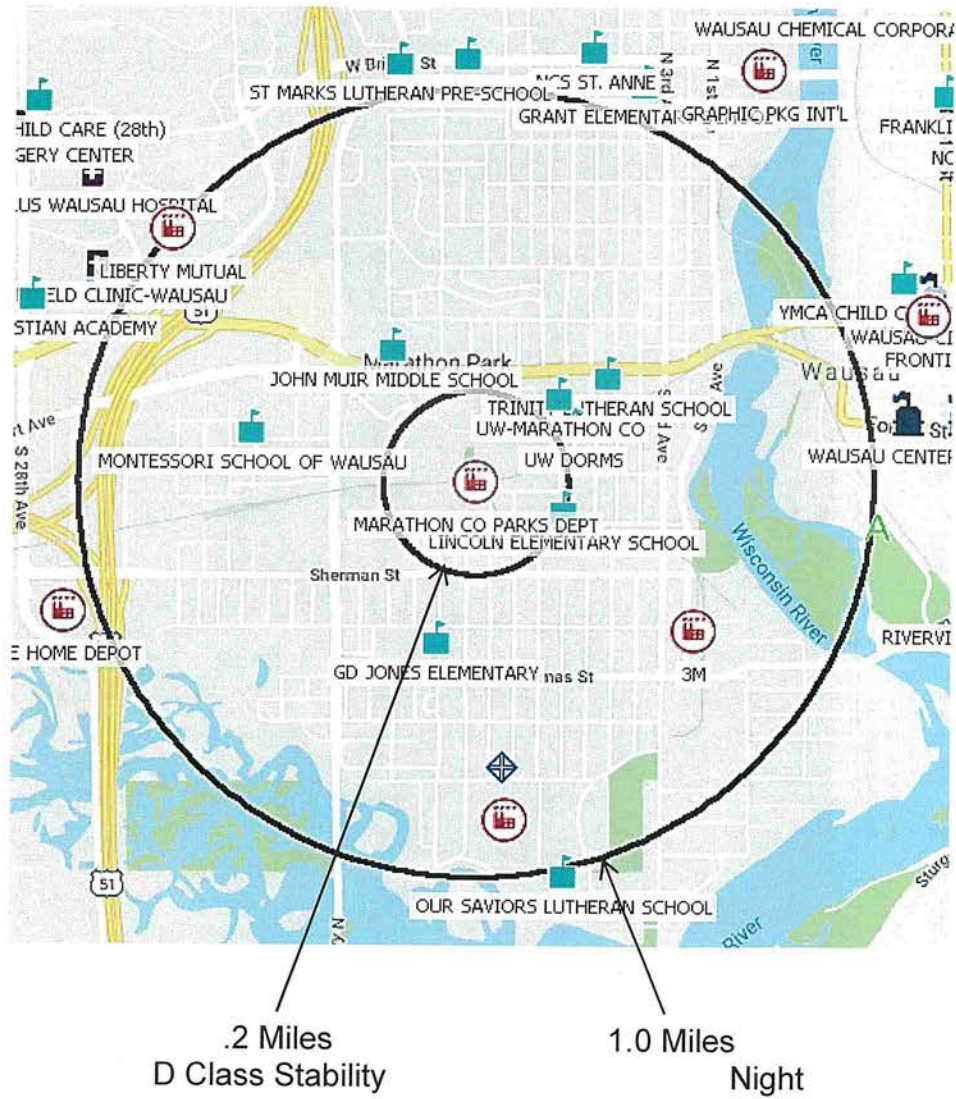
# Transportation Route Map MARATHON COUNTY PARKS DEPT.



**NOTE:** Since there are no specific routes that must be taken, this map shows roads nearby that could be used in the transport of chemicals to and from this facility.

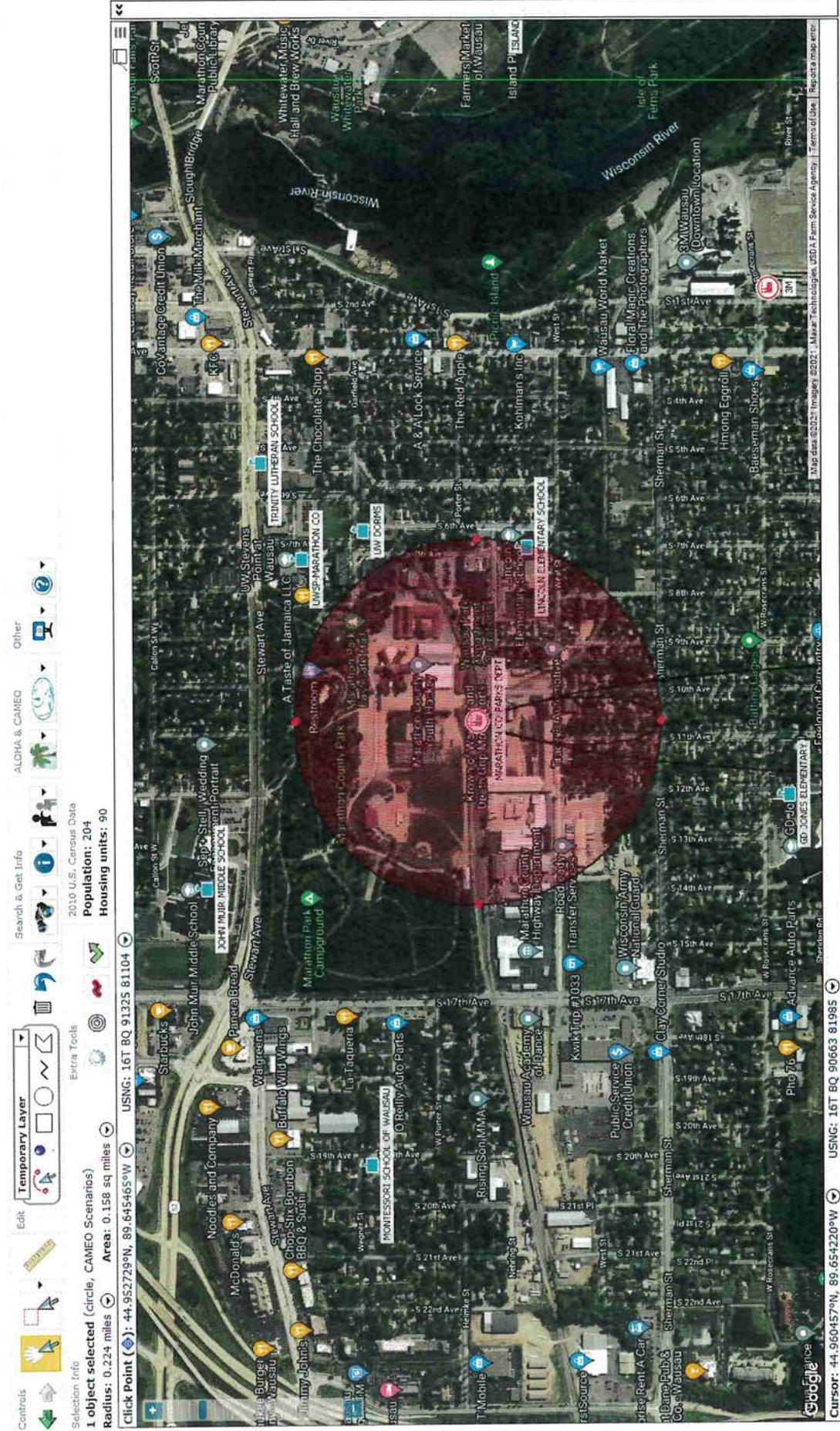
# Vulnerability Zone Map MARATHON COUNTY PARKS DEPT.

## Anhydrous Ammonia





ATTACHMENT 2

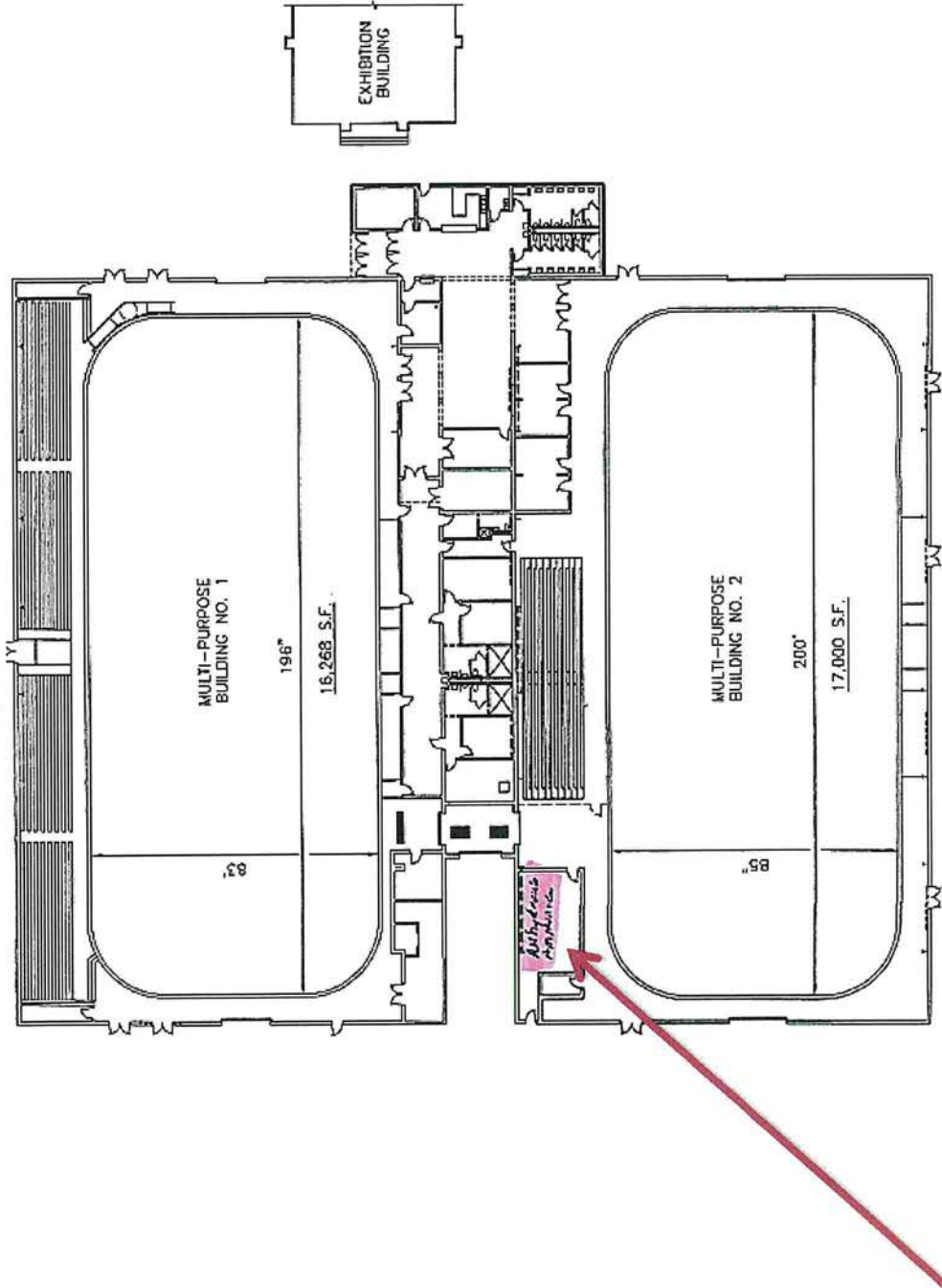


.2 Mile Vulnerability Zone





Facility / EHS Layout



Ammonia



**RESTRICTED AREA  
AUTHORIZED PERSONNEL ONLY**

Refrigerant: Ammonia, Anhydrous (717)  
Capacity: 2,000 pounds

Refrigerant Lubricant:  
Ruman Refrigerant Oil  
(300 SSW)  
Capacity: 15 gallons

Emergency:  
Call 911  
Shut down System  
Turn on Emergency Fan

Maintenance:  
Wausau/Marathon County  
Park Department  
Park Operations  
900 Pardee Street  
Wausau, WI 54401  
715-261-1577





Marathon County





Cameo Worksheets  
MARATHON COUNTY PARKS DEPT.

---

SCREENING/SCENARIO NAME: **MARATHON COUNTY PARKS F CLASS STABILITY 2021**

Facility/Route Name: MARATHON COUNTY PARKS DEPT. OPERATIONS SHOP

[x] In Inventory [ ] In Transit [ ] Shipper

Chemical: AMMONIA (ANHYDROUS) CAS: 7664-41-7

## STORAGE

Amount Released: 2000 pounds

Concentration: 100 as % of weight

Physical State at 20C (68F): gas

Diked Area: 0 sq ft

## RELEASE PARAMETERS

Duration: 10 minutes

Wind Speed: 3.4 mph Wind From: 0 in degrees measured clockwise from zero north.

Ground Roughness: Urban or Forest

Stability Class: F

Atmospheric concentration level of concern: .035 gm/m(3)

LOC Type:

Risk: , Consequences: , Overall risk:

**Threat zone radius: 1.0 miles**SCREENING/SCENARIO NAME: **MARATHON COUNTY PARKS D CLASS STABILITY**

Facility/Route Name: MARATHON COUNTY PARKS DEPT. OPERATIONS SHOP

[x] In Inventory [ ] In Transit [ ] Shipper

Chemical: AMMONIA (ANHYDROUS) CAS: 7664-41-7

## STORAGE

Amount Released: 2000 pounds

Concentration: 100 as % of weight

Physical State at 20C (68F): gas

Diked Area: 0 sq ft

## RELEASE PARAMETERS

Duration: 10 minutes

Wind Speed: 11.9 mph Wind From: 0 in degrees measured clockwise from zero north.

Ground Roughness: Urban or Forest

Stability Class: D

Atmospheric concentration level of concern: .035 gm/m(3)

LOC Type:

Risk: , Consequences: , Overall risk:

**Threat zone radius: 0.2 miles**

**ATTACHMENT 5**



# SAFETY DATA SHEET

**Airgas**

Ammonia

## Section 1. Identification

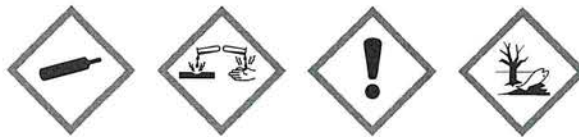
**GHS product identifier** : Ammonia  
**Chemical name** : ammonia, anhydrous  
**Other means of identification** : ammonia; anhydrous ammonia; Aqueous ammonia; Aqua ammonia  
**Product use** : Synthetic/Analytical chemistry.  
**Synonym** : ammonia; anhydrous ammonia; Aqueous ammonia; Aqua ammonia  
**SDS #** : 001003  
**Supplier's details** : Airgas USA, LLC and its affiliates  
259 North Radnor-Chester Road  
Suite 100  
Radnor, PA 19087-5283  
1-610-687-5253  
**24-hour telephone** : 1-866-734-3438

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Classification of the substance or mixture** : FLAMMABLE GASES - Category 2  
GASES UNDER PRESSURE - Liquefied gas  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN CORROSION/IRRITATION - Category 1  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
AQUATIC HAZARD (ACUTE) - Category 1

### GHS label elements

**Hazard pictograms** :



**Signal word** :

Danger

**Hazard statements** :

Flammable gas.  
Contains gas under pressure; may explode if heated.  
May cause frostbite.  
May form explosive mixtures in Air.  
Harmful if inhaled.  
Causes severe skin burns and eye damage.  
Very toxic to aquatic life.

### Precautionary statements

**General** :

Read and follow all Safety Data Sheets (SDS'S) before use. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

**Prevention** :

Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing gas. Wash hands thoroughly after handling.

## Section 2. Hazards identification

- Response** : Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
- Storage** : Store locked up. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : Liquid can cause burns similar to frostbite.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Substance
- Chemical name** : ammonia, anhydrous
- Other means of identification** : ammonia; anhydrous ammonia; Aqueous ammonia; Aqua ammonia

### CAS number/other identifiers

- CAS number** : 7664-41-7
- Product code** : 001003

Ingredient name	%	CAS number
ammonia, anhydrous	100	7664-41-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Continue to rinse for at least 10 minutes. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get



## Section 4. First aid measures

- Ingestion** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Chemical burns must be treated promptly by a physician. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage. Liquid can cause burns similar to frostbite.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes severe burns. Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:, pain, watering, redness, frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:, pain or irritation, redness, blistering may occur, frostbite
- Ingestion** : Adverse symptoms may include the following:, frostbite, stomach pains

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials: nitrogen oxides



## Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Do not breathe gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
ammonia, anhydrous	<p><b>ACGIH TLV (United States, 3/2015).</b>            STEL: 24 mg/m<sup>3</sup> 15 minutes.            STEL: 35 ppm 15 minutes.            TWA: 17 mg/m<sup>3</sup> 8 hours.            TWA: 25 ppm 8 hours.</p> <p><b>NIOSH REL (United States, 10/2013).</b>            STEL: 27 mg/m<sup>3</sup> 15 minutes.            STEL: 35 ppm 15 minutes.            TWA: 18 mg/m<sup>3</sup> 10 hours.            TWA: 25 ppm 10 hours.</p> <p><b>OSHA PEL (United States, 2/2013).</b>            TWA: 35 mg/m<sup>3</sup> 8 hours.            TWA: 50 ppm 8 hours.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>            STEL: 27 mg/m<sup>3</sup> 15 minutes.            STEL: 35 ppm 15 minutes.</p>

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of



## Section 8. Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas. [Liquefied gas]
- Color** : Colorless.
- Molecular weight** : 17.03 g/mole
- Molecular formula** : H<sub>3</sub>-N
- Boiling/condensation point** : -33°C (-27.4°F)
- Melting/freezing point** : -77.7°C (-107.9°F)
- Critical temperature** : 132.85°C (271.1°F)
- Odor** : Pungent.
- Odor threshold** : Not available.
- pH** : Not available.
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: oxidizing materials.
- Lower and upper explosive (flammable) limits** : Lower: 15.4%  
Upper: 25%
- Vapor pressure** : 114.1 (psig)
- Vapor density** : 0.59 (Air = 1)
- Specific Volume (ft<sup>3</sup>/lb)** : 22.7273
- Gas Density (lb/ft<sup>3</sup>)** : 0.044
- Relative density** : Not applicable.
- Solubility** : Not available.
- Solubility in water** : 540 g/l
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : 651°C (1203.8°F)
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not applicable.
- Physical/chemical properties comments** : SPECIFIC GRAVITY (AIR=1): @ 70°F (21.1°C) = 0.59  
PH: Approx. 11.6 for 1 N Sol'n. in water



Ammonia

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Oxidizers
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ammonia, anhydrous	LC50 Inhalation Gas.	Rat	7338 ppm	1 hours

**IDLH** : 300 ppm

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

## Section 11. Toxicological information

- Eye contact** : Causes serious eye damage. Liquid can cause burns similar to frostbite.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes severe burns. Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:, pain, watering, redness, frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:, pain or irritation, redness, blistering may occur, frostbite
- Ingestion** : Adverse symptoms may include the following:, frostbite, stomach pains

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

**Other information** : IDLH : 300 ppm

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
ammonia, anhydrous	Acute EC50 29.2 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Acute LC50 2080 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 0.53 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 300 µg/l Fresh water	Fish - Hypophthalmichthys nobilis	96 hours
	Chronic NOEC 0.204 mg/l Marine water	Fish - Dicentrarchus labrax	62 days

### Persistence and degradability

Not available

## Section 12. Ecological information

### Bioaccumulative potential

Not available.

### Mobility in soil












Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
<b>UN number</b>	UN1005	UN1005	UN1005	UN1005	UN1005
<b>UN proper shipping name</b>	AMMONIA, ANHYDROUS	AMMONIA, ANHYDROUS; OR ANHYDROUS AMMONIA	AMMONIA, ANHYDROUS	AMMONIA, ANHYDROUS	AMMONIA, ANHYDROUS
<b>Transport hazard class(es)</b>	2.2  	2.3 (8)   	2.2 	2.3 (8)   	2.3 (8)  
<b>Packing group</b>	-	-	-	-	-
<b>Environment</b>	No.	No.	No.	Yes.	No.
<b>Additional information</b>	Inhalation hazard  This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.  <u>Reportable quantity</u> 100 lbs / 45.4 kg Package sizes shipped in quantities less than	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark).  The marine pollutant mark is not required when transported by road or rail.  <u>Explosive Limit and Limited Quantity Index</u> 0	-	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.	The environmentally hazardous substance mark may appear if required by other transportation regulations. <u>Passenger and Cargo Aircraft</u> Quantity limitation: 0 Forbidden <u>Cargo Aircraft Only</u> Quantity limitation: Forbidden



## Section 14. Transport information

	to the RQ (reportable quantity) transportation requirements.  <b>Limited quantity</b> Yes.  <b>Packaging instruction</b> <b>Passenger aircraft</b> Quantity limitation: Forbidden.  <b>Cargo aircraft</b> Quantity limitation: Forbidden.  <b>Special provisions</b> 13,T50	<b>Passenger Carrying Ship Index</b> Forbidden  <b>Passenger Carrying Road or Rail Index</b> Forbidden  <b>Special provisions</b>			
--	--	---	--	--	--

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

**Special precautions for user** : **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** This material is listed or exempted.  
**Clean Water Act (CWA) 311:** ammonia, anhydrous  
  
**Clean Air Act (CAA) 112 regulated toxic substances:** ammonia, anhydrous
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed
- Clean Air Act Section 602 Class I Substances** : Not listed
- Clean Air Act Section 602 Class II Substances** : Not listed
- DEA List I Chemicals (Precursor Chemicals)** : Not listed
- DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ammonia, anhydrous	100	Yes.	500	-	100	-

**SARA 304 RQ** : 100 lbs / 45.4 kg

**SARA 311/312**

**Classification** : Fire hazard  
 Sudden release of pressure

## Section 15. Regulatory information

### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
ammonia, anhydrous	100	Yes.	Yes.	No.	Yes.	No.

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	ammonia, anhydrous	7664-41-7	100
Supplier notification	ammonia, anhydrous	7664-41-7	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

- Massachusetts** : This material is listed.  
**New York** : This material is listed.  
**New Jersey** : This material is listed.  
**Pennsylvania** : This material is listed.

### International regulations

#### International lists

#### National inventory

- Australia** : This material is listed or exempted.  
**Canada** : This material is listed or exempted.  
**China** : This material is listed or exempted.  
**Europe** : This material is listed or exempted.  
**Japan** : This material is listed or exempted.  
**Malaysia** : This material is listed or exempted.  
**New Zealand** : This material is listed or exempted.  
**Philippines** : This material is listed or exempted.  
**Republic of Korea** : This material is listed or exempted.  
**Taiwan** : This material is listed or exempted.

### Canada

- WHMIS (Canada)** : Class A: Compressed gas.  
 Class B-1: Flammable gas.  
 Class D-1A: Material causing immediate and serious toxic effects (Very toxic).  
 Class E: Corrosive material  
**CEPA Toxic substances**: This material is listed.  
**Canadian ARET**: This material is not listed.  
**Canadian NPRI**: This material is listed.  
**Alberta Designated Substances**: This material is not listed.  
**Ontario Designated Substances**: This material is not listed.  
**Quebec Designated Substances**: This material is not listed.

## Section 16. Other information

- Canada Label requirements** : Class A: Compressed gas.  
 Class B-1: Flammable gas.  
 Class D-1A: Material causing immediate and serious toxic effects (Very toxic).  
 Class E: Corrosive material



## Section 16. Other information

Health	*	3
Flammability		1
Physical hazards		2

**Caution:** HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Flam. Gas 2, H221	Expert judgment
Press. Gas Liq. Gas, H280	Expert judgment
Acute Tox. 4, H332	Expert judgment
Skin Corr. 1, H314	Expert judgment
Eye Dam. 1, H318	Expert judgment
Aquatic Acute 1, H400	Expert judgment

### History

**Date of printing** : 9/18/2015

**Date of issue/Date of revision** : 9/18/2015

**Date of previous issue** : No previous validation

**Version** : 0.01

**Key to abbreviations** :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

**References** : Not available.

☑ Indicates information that has changed from previously issued version.

### Notice to reader



## **Section 16. Other information**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.