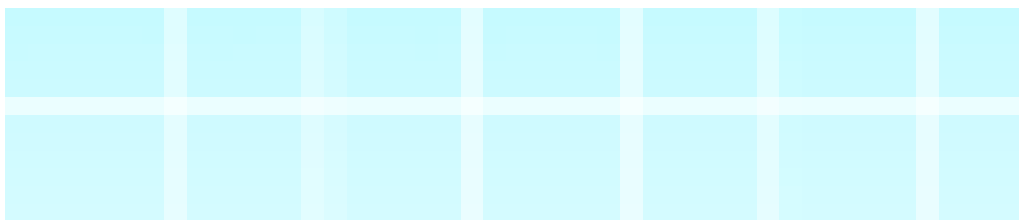


Container Management For Cylinders and Cans





Introduction

Great Lakes Chemical Corporation has designed "Container Management for Cylinders and Cans" as a supplement to Great Lakes' product labels for safely and efficiently storing, handling, returning, and in the case of cans, disposing of our packages. The information presented is brief and contains several pictures and illustrations to describe the points in each section. In the event of inconsistencies, label instructions always take precedence over this booklet.

Use the table of contents beginning on page 3 to quickly locate page numbers for your topic of interest. Through this booklet, we hope to promote safer use of our products, answer many commonly asked questions, and provide a quick reference guide for anyone purchasing Great Lakes' Meth-O-Gas[®] 100, Meth-O-Gas[®] Q, Brom-O-Gas[®], Terr-O-Gas[®] and Chlor-O-Pic[®] fumigant products.

Comments and suggestions are welcome, and should be directed to the Agricultural Products Department, Great Lakes Chemical Corporation, P.O. Box 2200, West Lafayette, IN 47996, telephone 765-497-6100.

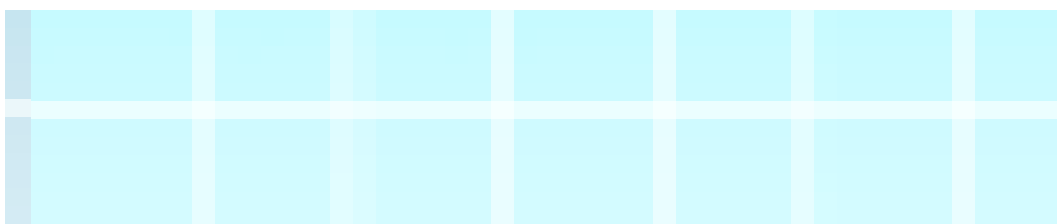


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Container Management

Cylinders

Great Lakes' Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, Terr-O-Gas® and Chlor-O-Pic® products are available in a wide variety of cylinder sizes from 50 to 1500 pounds. These rugged, returnable containers are a safe and efficient package when stored and handled according to the following guidelines.



Storage

- Under no circumstances should cylinders be stored in an enclosed area where humans or domestic animals may be present.



- The storage area should be monitored periodically (preferably weekly) with an approved monitoring device to verify that excessive levels of methyl bromide or chloropicrin are not present. If methyl bromide levels above 5 ppm and/or chloropicrin levels above 0.1 ppm are measured, contain and/or evacuate the area and notify your distributor immediately.
- Cylinders should be stored in a well ventilated, controlled access area, preferably protected from the weather and secured upright to a rack or wall to prevent tipping. Extended unprotected storage may cause labels to fade or detach from the cylinder.



Handling

- Cylinders should not be subjected to rough handling or mechanical shock, such as:
 - dropping
 - bumping
 - dragging
 - sliding



- Do not use ropes, slings, hooks, tongs, or similar devices to unload cylinders.
- Transport cylinders using a hand truck, forklift, or other device to which the cylinders can be firmly secured.



- Do not remove the valve protection bonnet and safety cap until immediately before use.



- Replace safety cap and valve protection bonnet when cylinders are not in use.



Return

- Great Lakes Chemical Corporation cylinders are not single use or disposable cylinders. When the cylinder is empty, close the valve, screw the safety cap tightly onto the cylinder outlet, and replace the cylinder bonnet before returning to the shipper.



- When the cylinder is prepared for its return shipment, contact the Great Lakes Chemical Corporation Customer Service Department at 1-800-892-9448 to receive details on how to return the cylinders. Return partial cylinders only after consulting with Great Lakes Chemical Corporation Customer Service.
- Only the registrant or designee is authorized to refill cylinders. Do not use cylinders for any other purpose.

Container Management

Cans

Great Lakes' Meth-O-Gas® 100 and Brom-O-Gas® products are available in 1.5 pound single use cans. The cans are packed 6 cans per six pack, 4 six packs per case: 36 pounds net, approximately 42.5 pounds gross per case, 40 cases per pallet. DOT regulations prohibit the transport of individual loose cans. The six pack case, shipping case or other approved DOT approved package must be used. The Meth-O-Gas® 100 and Brom-O-Gas® cans are a safe and efficient package when stored and handled according to the following guidelines.



Storage

- Under no circumstances should cans be stored in an enclosed area where humans or animals maybe present. Such areas include: house cellars, home/business workshops, garages.



- Prolonged exposure to high humidity and temperatures over 100°F should be avoided.
- The storage area should be monitored periodically (preferably weekly) with an approved monitoring device to verify that excessive levels of methyl bromide or chloropicrin are not present. If methyl bromide levels above 5 ppm and/or chloropicrin levels above 0.1 ppm are measured, or if rusting or empty cans are discovered, contain and/or evacuate the area. Move the cans to an isolated area and notify your distributor.
- Cans should be stored in a protected, well ventilated, secure area.



- Cans must never be transported or stored in the passenger compartment or trunk of a vehicle.



- Cans of Great Lakes' methyl bromide products are individually marked with lot numbers and "Use By" dates. Dates are also indicated on cases. Products should be stored so that the oldest stock is accessible and can be used first. If product cannot be used by the indicated "Use By" date, Great Lakes Chemical Corporation or your distributor should be notified immediately for instructions.



Handling

- Cans and cases should not be subjected to rough handling or mechanical shock, such as:
 - dropping
 - bumping
 - sliding
- Transport cases using a hand truck, forklift or other device to which the cases can be securely attached.



Disposal

- Empty cans can be recycled in some recycling centers. Otherwise, dispose of the empty cans in a sanitary landfill, or by other procedures approved by state and local authorities.
- Contact Great Lakes Chemical Corporation (800-892-9448) for assistance in the disposal of leaking or damaged cans.

Container Management

Department Of Transportation

This section of the Container Management Booklet for Cylinders and Cans is intended to help users and shippers of Great Lakes Agricultural Products comply with federal Department of Transportation (DOT) regulations governing the classification, identification and shipping of hazardous material. To ensure compliance for shipments of Great Lakes Chemical fumigants** with methyl bromide as an active ingredient, please read this information carefully.

Professionals using Meth-O-Gas® 100 brand fumigants or other Great Lakes Chemical methyl bromide based fumigants must meet the basic DOT requirements in this booklet. Additional DOT requirements must be met if your company:

- Transports a combined package greater than 1,000 pounds gross weight of any Hazardous Material (see Terms and Definitions on page 19).
- Operates vehicles *placarded* for Hazardous Materials.
- Operates vehicles across state lines having a gross vehicle weight of 10,001 pounds or more.

If any of the above three conditions apply, contact your state DOT enforcement agency for more information on necessary actions.

** Great Lakes Chemical methyl bromide fumigants include Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, and Terr-O-Gas® formulations.



Benefits of DOT Regulations

DOT laws are complex but necessary. Radioactive material, jet fuel, biomedical material, industrial chemicals, military ordnance and many other hazardous materials are shipped every day by rail, truck, aircraft and ship. To protect workers, emergency response personnel, and the public, DOT regulations require proper packaging, identification, storage, shipment, and handling of hazardous materials.

Most pesticides are covered under DOT regulations. Awareness and compliance with constantly changing regulations is a must.

DOT Compliance Checklist

The Department Of Transportation (DOT) is continually expanding and revising the regulations for transporting of hazardous materials. The following ten activities impact shipment of hazardous materials:

- (1) Classification
- (2) Product Name
- (3) Packaging
- (4) Marking/labeling
- (5) Shipping papers
- (6) Placards
- (7) Loading/moving/unloading
- (8) Incidents/emergencies
- (9) Reliefs/exemptions
- (10) Changes

These regulations are published in the Code of Federal Regulations (CFR), Title 49. It is the responsibility of the shipper to see that each of these items are completed properly. Hazardous materials characteristics of Great Lakes Chemical methyl bromide based fumigants are listed on the federal Hazardous Materials Table (49 C.F.R. 172.101).

If further assistance is needed with understanding the Hazardous Materials Table, contact your distributor, the manufacturer, the federal DOT, your state DOT agencies, or check a current product

Material Safety Data Sheet (MSDS).

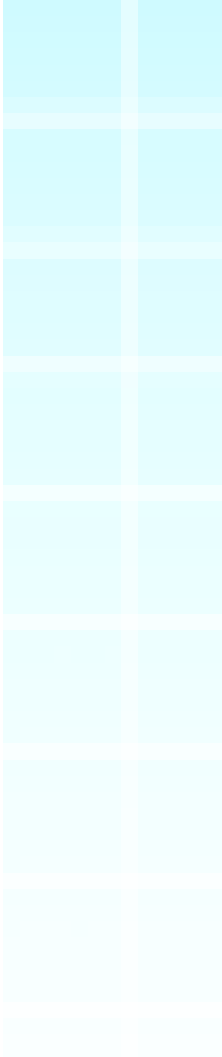
Following are DOT compliance guidelines for Great Lakes branded fumigants including Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, and Terr-O-Gas® formulations.

1. Shipping Papers (Vehicle Manifests)

Each vehicle operator must have a Shipping Paper (Vehicle Manifest) readily available at all times. It must log the Hazardous Materials originally loaded on board the vehicle. The Shipping Paper (Vehicle Manifest) (see example on page 23) must be in hand's reach from the driving position with the seat belt fastened and must be in sight (not in the glove compartment, under the seat, etc.). NOTE: DOT *does not* require the driver to update the Shipping Paper (Vehicle Manifest) throughout the day to reflect delivery or partial off-loading.

No specific form is required by DOT. However, a specific order of the information is required. A sample Shipping Paper (Vehicle Manifest) form is included in this guide. Some companies laminate the form to allow for daily updates with a grease pencil. Whatever type of Shipping Paper (Vehicle Manifest) you use, it must contain the following information:

- ☐ HAZMAT Column should identify the Hazardous Materials with an "RQ" (For "Reportable Quantity") if over one thousand pounds of methyl bromide; or an "X" if under one thousand pounds of methyl bromide. For methyl bromide brand products (Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, and Terr-O-Gas®) the RQ is one thousand pounds or more of active ingredient.
- ☐ Proper shipping name of the material from DOT Hazardous Materials Table.
- ☐ Hazard class or division number.
- ☐ The four-digit UN or NA identification number.
- ☐ Packing group number in Roman numerals.
- ☐ The quantity of material on board by weight or volume.

- 
- ☐ The total number of containers and type or size.
 - ☐ Product/name/content (NOTE: Although not a DOT requirement, the product name will aid identification in the event of an emergency).
 - ☐ A 24-hour emergency response telephone number or a manned number (manufacturer, CHEMTREC, etc.) during all time that hazardous materials are being transported.

Drivers are also required to have some emergency response information accompanying the shipment in the vehicle.

The DOT Emergency Response Guidebook will fulfill this requirement.

- ☐ General information, such as company name, company contact person, company address, vehicle ID number and the date may also be of importance.

2. Shipping Paper (Vehicle Manifest), Container Labeling, And Marking Requirements

Following are directions for complying with federal DOT requirements when transporting Great Lakes brand (Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, and Terr-O-Gas®) fumigants.

GREAT LAKES BRAND (Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, and Terr-O-Gas®) FUMIGANTS SHIPPED AND STORED

- ☐ Fill out a Shipping Paper (Vehicle Manifest) for any brand of fumigant.
- ☐ All products are required to have proper DOT labeling and markings.

Classification of Products

- Methyl bromide/chloropicrin products (chloropicrin < 2%) Methyl Bromide, 2.3 UN1062 Inhalation Hazard Zone C.



DOT has classified methyl bromide as a poison (toxic) gas with a class number of 2.3. Additionally methyl bromide is labeled as an Inhalation Hazard, Zone C. The DOT does not differentiate between 100% methyl bromide and a methyl bromide/chloropicrin mixture if the amount of chloropicrin is not greater than 2%.

- Methyl bromide/chloropicrin products (chloropicrin > 2%) Chloropicrin and Methyl Bromide Mixtures, 2.3, UN1581, Inhalation Hazard Zone B.



DOT classifies any mixture of methyl bromide and chloropicrin with more than 2% chloropicrin as a poison (toxic) gas with a class number of 2.3. Additionally, this mixture is labeled as an inhalation hazard, Zone B.

Cylinder return shipping requirements

The regulations (49 CFR Part 173.29(a)) require that an empty returnable package be shipped for return in the same manner as if it were full. A recommended description to be used on the shipping paper when returning empty cylinders is located below.

ATTENTION SHIPPERS!		FREIGHT CHARGES ARE PREPAID ON THIS BILL OF LADING UNLESS MARKED COLLECT.		SHIPPER'S NO.	
STRAIGHT BILL OF LADING				CARRIER NO.	
ORIGINAL NOT NEGOTIABLE				DATE	
Page 1 of 1		CARRIER NAME		Date XX/XX/XX	
(Name of carrier)		(SSAC)			
TO: GREAT LAKES CHEMICAL CORPORATION		FROM: ABC COMPANY			
2226 HAYNESVILLE HWY		123 ANY STREET			
EL DORADO AR 71791		JULY 1986		Show IN also Code 12345	
In Emergency Contact Tel. No. 1-800-424-9300					
HAZARD		HAZARD DESCRIPTION		TOTAL QUANTITY	
No. of Units	Container Type	Proper Shipping Name & Hazard Class	Weight, Volume, or Measure	Quantity in Containers	HAZARD
10 CYL	X	RESIDUE: LAST CONTAINED METHYL BROMIDE, 2.3, UN1062, POISON-INHALATION HAZARD, ZONE C, ETA REG. NO. 5785-11-AA, (METH-O-GAS 100), ERG#123, (NMFC 85900 SUB 3) NMFC-85900	564 LBS		
10 CYL	X	RESIDUE: LAST CONTAINED METHYL BROMIDE, 2.3, UN1062, POISON-INHALATION HAZARD, ZONE C, ETA REG. NO. 5785-11, (METH-O-GAS 0), ERG#123, (NMFC 85900 SUB 3) NMFC-85900	564 LBS		
10 CYL	X	RESIDUE: LAST CONTAINED CHLOROPICRIN, 6.1, UN1580, PG I, POISON-INHALATION HAZARD, ZONE B, EPA REG. NO. 5785-17, (CHLOR-O-PIC), ERG#154 NMFC-43960	500 LBS		
PLACARDS TENDERED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>					
<p>NOTE: A bill of lading for hazardous materials must be accompanied by a shipping paper containing the following information: (1) Proper shipping name, hazard class, and identification number; (2) Quantity; (3) Weight, volume, or measure; (4) Container type and number; (5) Date of shipment; (6) Shipper's name and address; (7) Receiver's name and address; (8) Emergency contact information; (9) Any other information required by the regulations.</p>		<p>NOTE: A bill of lading for hazardous materials must be accompanied by a shipping paper containing the following information: (1) Proper shipping name, hazard class, and identification number; (2) Quantity; (3) Weight, volume, or measure; (4) Container type and number; (5) Date of shipment; (6) Shipper's name and address; (7) Receiver's name and address; (8) Emergency contact information; (9) Any other information required by the regulations.</p>			
SHIPPER'S NO. ABC COMPANY		CARRIER NAME		DATE	
FFY		PLT		DATE	
<p>SHIPPING PAPER FOR HAZARDOUS MATERIALS</p> <p>THIS BILL OF LADING IS VALID FOR THE TRANSPORTATION OF HAZARDOUS MATERIALS BY AIR, SEA, AND RAIL.</p> <p>IT IS THE SHIPPER'S RESPONSIBILITY TO ENSURE THAT THE SHIPPING PAPER IS ACCURATE AND COMPLETE.</p> <p>IT IS THE CARRIER'S RESPONSIBILITY TO ENSURE THAT THE SHIPPING PAPER IS ACCURATE AND COMPLETE.</p>					

Terms and Definitions

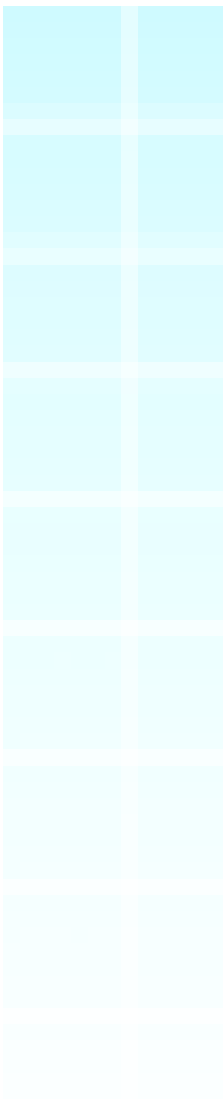
CARGO TANK: A bulk package which is permanently attached to a motor vehicle or which, because of size, design, or attachment, is filled and emptied without being removed from the vehicle.

COMMON PRODUCT NAME: The name by which the material is sold or promoted. Meth-O-Gas® 100, Meth-O-Gas® Q, Brom-O-Gas®, Terr-O-Gas® and Chlor-O-Pic® are all Common Product Names and trademarks of Great Lakes Chemical. Although not a DOT requirement, the Common Product Name should be included on the Shipping Paper (Vehicle Manifest).

IDENTIFICATION NUMBER: The number assigned the material for easy and accurate identification. Hazardous Materials may be assigned a United Nations (UN) and/or a North America (NA) number which is the two-letter prefix followed by a four-digit number. The Identification Number for methyl bromide, for example, is UN 1062. The identification Number must appear on the container marking and/or placarding, and on the Shipping Paper (Vehicle Manifest).

HAZARD CLASS OR DIVISION: The category of hazard assigned to the material, such as explosive, compressed gases, flammable liquid, flammable solids, etc. The Hazard Classification must be indicated on the container's DOT primary label and on the Shipping Paper (Vehicle Manifest).

HAZARDOUS MATERIAL: A substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety and property when transported in commerce, and which has been so designated (49 C.F.R. 171.8).



DOT LABELING: The graphic, diamond-shaped display prescribed by DOT to show transportation hazards which (1) may be applied as a label or pre-printed or made part of the company product label, and which (2) bears a symbol for the class and for the class and/or division number for the DOT hazard. As long as a product remains in the original manufacturer packaging or box, it should be properly labeled for DOT purposes.

DOT MARKING: Applying the descriptive name that must be affixed to containers, such as tanks or cylinders, to identify the contents.

PACKING GROUP: Specifies one or more packing groups for the material based on the hazard significance: great (I), medium (II) or minor (III).

REPORTABLE QUANTITY (RQ): The threshold amount of the material which must be reported if spilled. RQ levels are set by EPA using a range of criteria such as, but not limited to, aquatic toxicity and the oral, dermal, and inhalation LD₅₀.

PROPER SHIPPING NAME: The name of the material as it appears in the DOT Hazardous Materials Table. The Proper Shipping Name will appear on the product packaging and must also be used on the Shipping Paper (Vehicle Manifest).

SHIPPING PAPER: Documentation of the Hazardous Materials being carried on the vehicle at the time. Information must include Shipping Name, Classification, ID Number, Packing Group and Reportable Quantity (when applicable).

Questions and Answers

Q: Who enforces DOT compliance?

A: Each state has one or more agencies that are charged with enforcement. In several states it is the State Highway Patrol. In others, state hazardous materials regulators or other officials handle this responsibility.

Q: What is a “Hazardous Material”?

A: Hazardous Materials (HM) are defined by the Secretary of Transportation as substances capable of posing an unreasonable risk to health, safety or property when transported by land, air or sea in commerce. Hazardous Materials are defined in the Code of Federal Regulations (49 C.F.R. §172.101 and Part 173). The Hazardous Material Table §172.101 describes materials by name, hazard classification, identification numbers and more. Appendix A to the Hazardous Materials Table lists Hazardous Substances. Some common classes of Hazardous Materials include explosives, poisons, corrosives, radioactive materials, flammable materials and gases.

Q: Is placarding vehicles necessary with methyl bromide fumigants ?

A: YES. Under DOT regulations, placards are required on vehicles transporting any quantity of fumigants containing methyl bromide or empty cylinders containing fumigant residues.

Q: What is a Reportable Quantity (RQ) and why is there an RQ for methyl bromide?

A: An EPA federal law, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requires that releases involving a Reportable Quantity (RQ) of a hazardous material listed in 40CFR 302.4, Table 302.4, be reported to the National Response Center (NRC). The law is designed to prevent chemical dumping, provide an immediate corrective response, and protect the environment.

DOT hazardous materials which are subject to EPA CERCLA reporting are listed in Appendix A, Table 1 of the 49 CFR part

172.101. The DOT table is equivalent to the EPA Table 302.4.

Methyl bromide is defined as a hazardous material and is listed in both the EPA and DOT tables and has an RQ of 1000 pounds. This means that if 1000 pounds of methyl bromide (either as 100% or as a formulation) is released (e.g. spilled, leaked, etc.) the release is reportable.

DOT has additional requirements for shipping descriptions for hazardous materials having an EPA CERCLA reportable quantity listed in Appendix A, Table 1 of 49 CFR part 172.101. The hazardous chemical, such as methyl bromide, must be designated as an RQ chemical in the HM section of the shipping paper when the quantity shipped meets or exceeds the RQ. Instead of putting an X in the HM column preceding the proper shipping name, the letters RQ must be entered. See 49 CFR part 172.200-203.

Note: Chloropicrin is not on the CERCLA hazardous materials list and is not subject to CERCLA release reporting.

Q: What is required if a spill is above the RQ?

A: By federal law, spills at or above the RQ level must be reported immediately to the National Response Center (NRC) at 1-800-424-8802 (in the Washington, D.C., area call 202-267-2675). The NRC, operated by the Coast Guard, serves as the central contact point for all federal agencies having specific responsibilities for responding to hazardous materials incidents. In some states, the spill must be reported to state and/or local authorities.

Emergency assistance for any chemical spill can be requested by calling CHEMTREC at 1-800-424-9300 (in the Washington, D.C. area call 483-7616). CHEMTREC is a service of the Chemical Manufacturers Association (CMA) designed to provide immediate advice for responding authorities. For Emergency Assistance for Great Lakes Chemical products call 800-949-5167.

Q: What driver's license is required for transporting methyl bromide fumigants?

A: A Commercial Driver's License (CDL) with Hazmat Endorsement is required.

For More Information

About DOT Regulations

DOT Hazardous Materials regulations are found in the Code of Federal Regulations (CFR) title 49, subtitle B, chapter 1, subchapter C, parts 171 through 180. Some states have additional requirements, so contact the DOT enforcement agencies in each state where you do business to learn about specific state requirements.

Contact: U.S. Department of Transportation
202-366-4488 or 202-366-2301
Hazardous Material is available online at:

<http://hazmat.dot.gov/>

ATTENTION SHIPPERS! FREIGHT CHARGES ARE PREPAID ON THIS BILL OF LADING UNLESS MARKED COLLECT.

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

Shipper No. _____
Carrier No. _____

Page 1 of 2 CARRIER NAME _____ Date XX/XX/XX
(Name of carrier) (SCAC)

To: ABC COMPANY FROM: GREAT LAKES CHEMICAL CORPORATION
City: SODENWIERE State: IN Zip Code: 12345 City: WEST LAFAYETTE State: IN Zip Code: 47906
24 Hr. Emergency Contact No. 1-800-424-9300

No. of Units & Container Type	HM	BASIC DESCRIPTION (Proper Shipping Name, Hazard Class, Identification Number (UN or NA), Packing Group, see 172.101, 172.202)	TOTAL QUANTITY (Gross Weight, Volume, etc.)	WEIGHT (Gross Weight, Volume, etc.)	RATE	CHARGES (For Carrier Use Only)
10 CYL	X	METHYL BROMIDE, 2.3, UN1062, POISON-INHALATION HAZARD, ZONE C, EPA REG.NO.5785-11, (METH-O-GAS Q), ERG#123, (NMFC 85900 SUB 3) NMFC=85900	2000 LBS	2564 LBS		
10 CYL	X	METHYL BROMIDE, 2.3, UN1062, POISON-INHALATION HAZARD, ZONE C, EPA REG.NO.5785-11-AA, (METH-O-GAS 100), ERG#123, (NMFC 85900 SUB 3) NMFC=85900	2000 LBS	2564 LBS		
10 CYL	X	CELOPORICIN, 6.1, UN1580, PG I, POISON-INHALATION HAZARD, ZONE B, EPA REG.NO.5785-17, (CHLOR-O-PIC), ERG#154 NMFC=43980	2000 LBS	2500 LBS		

PLACARDS TENDERED: YES ☐ NO ☐

SHIPPER: GREAT LAKES CHEMICAL CORPORATION CARRIER: CARRIER NAME
FCR PER
DATE

Permittee of goods-shipping activities of origin (AHS 1307) STYLE 1105-3 Lubbock: An American Lubbock Co., Chicago IL 60646 800-671-5803

Shipping Paper (Bill of Lading) for a shipment of fumigant products.

Read product label completely and follow all instructions before using these products. For additional information refer to the Agricultural Products Business Information and Stewardship Manual.



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West Lafayette, IN 47906

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fax: 765-497-5493
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