

Respirator Fit Testing for Fumigation Law Compliance



R. David Myers
Senior Agent
myersrd@umd.edu

Respirator Fit Testing for Fumigation Law Compliance

R. David Myers
Senior Agent, Agriculture
University of Maryland Extension
myersrd@umd.edu

I. Fumigation Law Update

Methyl Bromide Status

- ✓ In 1992 Methyl Bromide was added to the Montreal Protocol: An International treaty that regulates Ozone Depleting Substances.
- ✓ In the U.S. Methyl Bromide phase out began in 1998 based upon 1991 baseline use rates.
- ✓ Production of Methyl Bromide, except for exempt uses, has been prohibited since 2005.
- ✓ Currently, approved exempted use rates of Methyl Bromide are at 26% of the 1991 baseline.
- ✓ In 2009 EPA rendered a final decision on the Methyl Bromide "2006 Reregistration Eligibility Decision" (RED).
- ✓ Methyl Bromide 2006 RED required phased in label changes include: 1) Fumigation Management Plans; 2) Applicator Education; 3) Buffer Zones; and 4) Neighbor Notification

2011 Fumigant Application Requirements

- ✓ Effective 12/01/2010, EPA requires that all fumigant applications include: 1) Fumigation Management Plans; 2) Applicator Education; 3) Buffer Zones; and 4) Neighbor Notification.
- ✓ Effective 12/01/2010, EPA requires that at least two individuals from each farm applying fumigants be **respirator fit tested** and **medically cleared** for respirator usage.
- ✓ EPA developed an on-line "Soil Fumigant Tool Box" to facilitate compliance at: http://www.epa.gov/opp00001/reregistration/soil_fumigants/index.htm

Welcome to the Soil Fumigant Toolbox which provides training, outreach, and other resource materials for applicators and handlers, communities, state and local agencies, and others interested in understanding and implementing the current requirements for safe use of soil fumigants. Learn what's new in the [toolbox](#).



Soil Fumigant Management Plans

Soil fumigations are complex processes that require specialized equipment and practices to properly apply volatile and toxic pesticides. EPA's risk mitigation allows for site-specific decisions to address the conditions where the fumigant is applied. To address this complexity and flexibility, EPA is requiring that fumigant users prepare a written, site-specific fumigant management plan (FMP) before fumigations

begin. Written plans and procedures for safe and effective applications will help prevent accidents and misuse and will capture emergency response plans and steps to take in case an accident occurs.

Fact Sheets

- ✓ [2010 Site-Specific Fumigant Management Plans and Post-Application Summaries \(PDF\)](#) (5 pp, 260k)
- ✓ **Chloropicrin and Iodomethane [FMP Template](#)** (18 pp, 203k)
 This file includes templates that may be filled-in by hand for the **2010 Fumigant Management Plan, 2010 Post-Application Summary Report, and related forms (Air Monitoring, Breathing Zone Monitoring, Handler Information, Respirator Cartridge Replacement, Drip-Application Monitoring, and Occupied Structures).**

Current Labeled Fumigant Buffer Zone Requirements

- ✓ **Buffer Zone determination for MIDAS 50:50 (50% Iodomethane & 50% Chloropicrin) label excerpt:**

Determining Buffer Zone Distance

- Determine the size of the buffer zone using the following Buffer Zone Table.
- The size of the buffer zone will be dependant on the following three factors:
 - The number of field acres that are being treated with MIDAS 50:50.
 - The pounds of MIDAS 50:50 that are being applied per treated acre.
 - Buffer zone reduction credits.

Buffer Zone Table

MIDAS 50:50 Application Rate (Lbs per Treated Acre) ¹	SIZE OF FIELD IN ACRES (Buffer zone distance in feet) ^{1, 2}							
	Up to 5 Acres	6-10 Acres	11-15 Acres	16-20 Acres	21-25 Acres	26-30 Acres	31-35 Acres	36-40 ³ Acres
125	25	40	75	110	130	145	165	180
150	25	45	90	130	155	175	195	215
175	25	50	100	150	175	200	225	250
200	30	60	120	175	205	235	265	290
210	30	60	120	180	210	240	270	300
240	35	70	140	210	245	280	315	345
300	45	90	175	260	305	345	390	430
350	50	100	200	300	350	400	450	500

¹ For rates not listed on this table, use the buffer zone for the next highest rate, or use the following calculation to determine the exact buffer zone:

$$\text{Buffer Zone for Application Rate Not Listed} = \frac{\text{Known Buffer Zone on Table X Application Rate Not Listed}}{\text{Rate of Application for Known Buffer Zone}}$$

RESTRICTED USE PESTICIDE
 USE TO AVOID TOXICITY
 For small scale and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Midas 50:50

FOR SALE AND USE IN STATES OTHER THAN FLORIDA

Only for Pre-Plant Fumigations of Fields Intended for Commercial Production of Listed Crops and Field-Grown Unmarketable, for the Control of Soil-Borne Pests Including Weed Seeds, Nematodes, Insects, and Diseases

ACTIVE INGREDIENTS:
 Iodomethane 49.00%
 Chloropicrin 49.00%
OTHER INGREDIENTS: 0.20%
TOTAL: 100.00%
 Net Content (weight): 16.5 pounds (7.5 kg) per gallon (3.785 liters)

KEEP OUT OF REACH OF CHILDREN
ANGER / PELIGRO
 Evades all methods to detect, measure, capture, or remove fumigant from the air. Do not breathe the gas. Do not ingest. Do not get on skin or clothes. Do not get in eyes.

FIRST AID	
If in eyes:	• Hold eye open and flush copiously and gently with water for 15-20 min. • If both contact lenses, if present, after the first 5 minutes, and then continue flushing. • Call a poison control center or doctor for treatment advice.
If on skin or clothing:	• Flush with water for 15 min. Call a poison control center or doctor for treatment advice.
If inhaled:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably from a pocket mask if available. • Call a poison control center or doctor for further treatment advice.
If swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Give person a glass of water to drink if conscious. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to eat or drink unless told to do so.
SEEK MEDICAL ATTENTION	
Have the product container or label with you when seeking medical attention or if hospitalized. Refer to the following information for the product name and active ingredients. FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE CALL: 1-800-368-5852 or 1-801-332-0905	
NOTE TO FUMIGATOR	
Provide personal protective equipment for the use of pesticide. Systemic pesticide damage may contribute to the use of pesticide. Systemic pesticide damage may contribute to the use of pesticide. Systemic pesticide damage may contribute to the use of pesticide.	

II. How to Conduct a Respirator Fit Test

- 1) Effective 12/01/2010, EPA requires that at least two individuals from each farm applying fumigants be respirator fit tested and medically cleared for respirator usage.
- 2) Have test subject bring their own respirator NIOSH approved for pesticide usage, fitted with an organic vapor cartridge.
- 3) OSHA requires a clean shaven face at the face piece sealing surface. A full face or helmet type respirator sealed below the neck may be required for bearded individuals to be respirator fit certified.
- 4) After passing the respirator fit test a respirator fit test certification card will provided with an annual expiration date of December 31st.
- 5) OSHA Medical clearance forms will be provided at the respirator fit testing. The OSHA medical form needs to be filled out by each respirator fitted individual and then reviewed by their physician for duty release.

Effective 12/1/2010, EPA requires that at least two individuals per farm using fumigants have **medical clearance** and **respirator fit testing**.

Respirator Fit Testing!

The OSHA respiratory protection standard (29 CFR 1910.134) prohibits fit testing of employees if there is any hair growth between the skin and facepiece sealing surface, such as stubble beard growth, beard, moustache, or sideburns which cross the respirator sealing surface (Appendix A.I.A.9.).

Respirator Fit Test Wallet Card

RESPIRATOR FIT TEST RECORD

Name	Signature	Expiration Date	Respirator Type	Respirator Model	Respirator Size	Respirator Color

Respirator Fit Testing!

- ✓ Medical Clearance Form
- ✓ Physicians Release

UNIVERSITY OF MARYLAND EXTENSION

Respirator Fit Testing Procedure

- ✓ Ask subject about any breathing difficulties prior to fit testing.
- ✓ Perform a sensitivity test.
- ✓ Fit respirator and perform a User Seal Check.
- ✓ Ask individual to close eyes while the irritant smoke is delivered to inhalation and seal points on the respirator.
- ✓ Ask the individual to breath normal and move head during the test.
- ✓ No irritation or detection indicates a successful respirator fit.

Respirator Fit Test Attachments:

A. OSHA Appendix C

Appendix C to § 1910.134: OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

B. Respirator Fit Test Record Form

C. Respirator FIT Test Wallet Card

Resource Links:

Northern Safety & Industrial

<http://www.northernsafety.com/>

Zefon International Inc.

<http://www.zefon.com/>

<http://www.zefon.com/store/respirator-fit-testing/>

3M

http://solutions.3m.com/wps/portal/3M/en_US/Health/Safety/Products/Two/

OSHA

<http://www.osha.gov/>

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9783