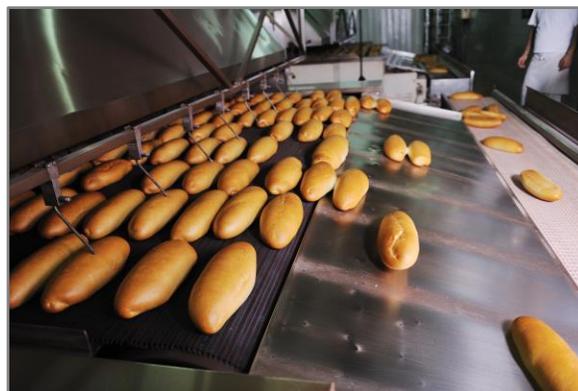


## Air Pollution Requirements for Bakeries

### What type of air pollution is emitted from bakeries?

A bakery can have air pollution emissions from several different processes (including gas combustion). The primary emission source at a bakery is the oven, which produces major contaminants of concern known as volatile organic compounds (VOCs). The main VOC emitted from bakery operations is ethanol.

In yeast-leavened breads, the yeast metabolizes sugar and produces carbon dioxide gas bubbles in the dough which causes the bread to rise. The ethanol produced by yeast metabolism is generally a liquid at temperatures below 77°C (170°F), and is not emitted in large amounts until the dough is exposed to high temperatures around 240°C (464°F). Therefore, the bakery oven is the main source of ethanol. Ethanol and other VOCs combine in the atmosphere to form smog.



### Do I need a permit?

Bakery ovens are considered air pollution sources. Ohio EPA requires air pollution permits for some ovens located at commercial bakeries.

An air permit is required for a bakery oven if all of the following conditions are true:

- The oven is located at a commercial bakery;
- The oven bakes yeast-type products; and
- The total maximum production rate of yeast dough, bread, buns and rolls exceeds one thousand pounds per hour.

A commercial bakery is an establishment that primarily manufactures fresh or frozen bread, bread-type rolls and “dry” bakery products (e.g., biscuits, crackers and cookies). This does not include bakeries that produce products primarily for direct sale on the premises to household consumers.

Air permits are not required for bakery ovens that bake:

- chemically-leavened products (such as those used in “quick” breads, cakes, etc.);
- yeast dough products that are not located at a commercial bakery;
- biscuits, crackers, cookies and other similar nonleavened products.

### How do I get my permit?

If you determine a permit is required, you must complete a permit application and submit it to Ohio EPA’s district office or local air agency covering your area. See the map in this fact sheet to determine your local contacts. You can get permit applications from your Ohio EPA district office or local air agency, or through the Division of Air Pollution Control (DAPC) website at

#### **IMPORTANT**

If you are already operating your business and discover that you need an air permit, you must still complete and submit permit applications.

## Air Pollution Requirements for Bakeries

[epa.ohio.gov/dapc/permits/permits.aspx](http://epa.ohio.gov/dapc/permits/permits.aspx). Air permits will be issued for each source and will usually include emission limits, monitoring, record keeping, and reporting requirements. **Once you get the permit(s), it is very important that you read and understand the terms and conditions.**

### What information is required in the permit application?

The permit-to-install and operate (PTIO) application requires information that is simple (company name and address) and more complex (VOC emission rates). The VOC emissions from the oven can be estimated for each yeast-leavened product by using the following equation:

#### Bakery Oven Emission Estimating Equation

$$\text{VOC}_{\text{ton/year}} = \text{VOC}_{\text{EF}} \times \text{BP} \times (1-F) \times 0.0005$$

where:

$\text{VOC}_{\text{ton/year}}$  = VOC emissions in tons per year;

$\text{VOC}_{\text{EF}}$  = emission factor in pounds of uncontrolled VOC emissions per ton of bread, or other yeast-leavened products, produced (*see calculation below*);

BP = bread or other yeast leavened product production, in tons per year; and

F = fraction of VOC emissions being reduced by a control device (e.g. a 98 percent efficient control device for VOC has an F value of 0.98). For no control device, F=0.

**The value of  $\text{VOC}_{\text{EF}}$  can be estimated for each yeast-leavened product by the following equation:**

$$\text{VOC}_{\text{EF}} = 0.95Y_i + 0.195t_i - 0.51S - 0.86t_s + 1.90$$

where:

$Y_i$  = initial baker's percent of yeast to the nearest tenth of a percent;

$t_i$  = total yeast action time (fermentation time) of the initial yeast in hours to the nearest tenth of an hour;

S = final (spiking) baker's percent of yeast to the nearest tenth of a percent; and

$t_s$  = spiking yeast action time in hours to the nearest tenth of an hour.

The emissions resulting from fuel combustion (gas or oil) can also be calculated once the annual fuel consumption is known. Fuel usage data is needed for permit applications.

If the application is not complete, it will take you longer to get your permit. Make sure you have submitted a complete permit application.

### Where do I send my permit application?

Ohio EPA has district and local offices throughout the state that handle the permitting process for the businesses in their jurisdiction. To find the office that handles air permitting for your area, refer to the map and contact information at the end of this fact sheet or call Ohio EPA, DAPC at (614) 644-2270.

# Air Pollution Requirements for Bakeries

## How long does it take to get a permit?

In general, a PTIO takes anywhere from two to six months to process depending on the complexity of the air pollution source and workloads of the district and central offices. General permits can be processed within 45 days. When submitting your permit application, discuss processing time with your local district office permitting staff.

It is a good idea to arrange a pre-application meeting with your district office to discuss your project. They can ensure you complete the proper forms and can address any concerns you have with construction/installation deadlines.

## How much will my permit cost?

There are no permit application fees. When you receive your PTIO, a one-time fee is charged. You must also pay an annual emissions fee based on the total amount of air pollution emitted by the facility. For a current listing of fees, ask your district office or visit [epa.ohio.gov/dapc/permits/permits.aspx](http://epa.ohio.gov/dapc/permits/permits.aspx) and click on the “Fees” tab.

## Where can I get help?

Ohio EPA’s Office of Compliance Assistance and Pollution Prevention (OCAPP) is a non-regulatory office with a goal to help small businesses comply with air pollution regulations and permitting requirements. If you are operating a small business with fewer than 100 employees and your business is not subject to Title V permitting, we can help you!

We can come to your business to determine exactly what you need to do to comply with air permitting regulations. We can calculate emissions and help you document any permit exemptions for which you may qualify. We can help you complete air permit application forms.

Ohio EPA recommends that all businesses investigate ways to reduce pollution and conserve energy. This can save you money and may reduce the regulations you are required to comply with. Contact OCAPP for help in identifying pollution prevention (P2) strategies for your business.

All information and services are free. OCAPP does not share information with Ohio EPA inspection and enforcement staff and all air permitting-related information is confidential. For more information, contact OCAPP at 800-329-7518, or visit our website at [epa.ohio.gov/ocapp](http://epa.ohio.gov/ocapp).

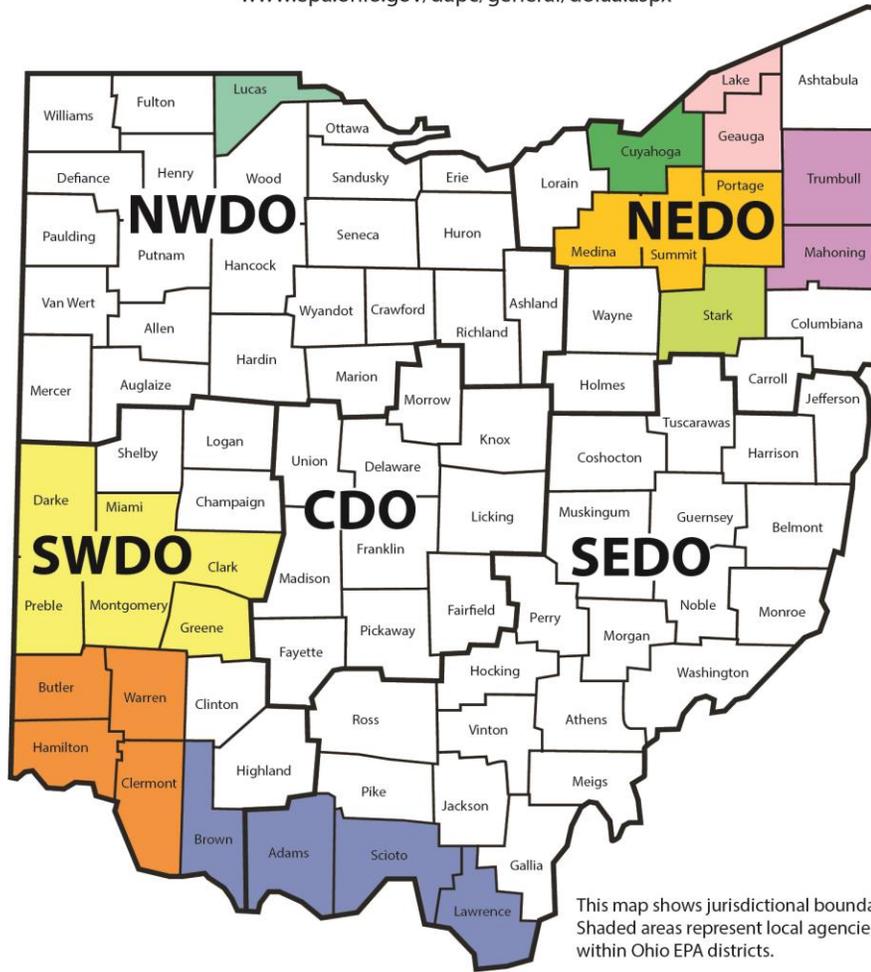
## Need More Help?

You can also contact your local Ohio EPA district office that oversees the county in which your business is located. A district office map and contact information is available at the end of this factsheet.

# Air Pollution Requirements for Bakeries

## Local Air Pollution Control Agencies

Division of Air Pollution Control  
Ohio EPA, Central Office  
(614) 644-2270  
[www.epa.ohio.gov/dapc/general/dolaa.aspx](http://www.epa.ohio.gov/dapc/general/dolaa.aspx)



This map shows jurisdictional boundaries. Shaded areas represent local agencies within Ohio EPA districts.



- CDO** Central District Office  
01 50 West Town Street, Suite 700  
Columbus, OH 43215  
(614) 728-3778 FAX (614) 728-3898  
[www.epa.ohio.gov/cdo/](http://www.epa.ohio.gov/cdo/)
- SEDO** Southeast District Office  
06 2195 Front St.  
Logan, OH 43138  
(740) 385-8501 FAX (740) 385-6490  
[www.epa.ohio.gov/sedo/](http://www.epa.ohio.gov/sedo/)
- NEDO** Northeast District Office  
02 2110 E. Aurora Rd,  
Twinsburg, OH 44087  
(330) 963-1161 FAX (330) 487-0769  
[www.epa.ohio.gov/nedo/](http://www.epa.ohio.gov/nedo/)
- NWDO** Northwest District Office  
03 347 North Dunbridge Rd.  
Bowling Green, OH 43402  
(419) 352-8461 FAX (419) 352-8468  
[www.epa.ohio.gov/nwdo/](http://www.epa.ohio.gov/nwdo/)
- SWDO** Southwest District Office  
05 401 E. Fifth St.  
Dayton, OH 45402-2911  
(937) 285-6357 FAX (937) 285-6249  
[www.epa.ohio.gov/swdo/](http://www.epa.ohio.gov/swdo/)

**16** Akron Regional Air Quality Management District  
Fairway Center, 1867 W Market St  
Akron, OH 44313  
(330) 375-2480 FAX (330) 375-2402  
[www.araqmd.org/](http://www.araqmd.org/)

**13** Cleveland Dept. of Public Health  
Division of Air Quality  
75 Erieview Plaza, 2nd Floor  
Cleveland, OH 44114  
(216) 664-2297 FAX (216) 420-8047  
[www.clevelandhealth.org/](http://www.clevelandhealth.org/)

**07** Portsmouth Local Air Agency  
605 Washington St., Third Floor  
Portsmouth, OH 45662  
(740) 353-5156 FAX (740) 353-3638  
[www.portsmouthoh.org/health/air-division](http://www.portsmouthoh.org/health/air-division)

**15** Air Pollution Control Division  
Canton City Health Dept.  
420 Market Ave., North  
Canton, OH 44702-1544  
(330) 489-3385 FAX (330) 489-3335  
[www.cantonhealth.org/](http://www.cantonhealth.org/)

**08** Regional Air Pollution Control Agency  
Public Health Dayton & Montgomery Cnty.  
117 South Main St.  
Dayton, OH 45422-1280  
(937) 225-4435 FAX (937) 225-3486  
[www.rapca.org/](http://www.rapca.org/)

**04** City of Toledo  
Division of Environmental Services  
348 South Erie Street  
Toledo, OH 43604  
(419) 936-3015 FAX (419) 936-3959  
[www.toledo.oh.gov/services/public-utilities/environmental-services/](http://www.toledo.oh.gov/services/public-utilities/environmental-services/)

**14** Southwest Ohio Air Quality Agency  
250 William Howard Taft Road  
Cincinnati, OH 45219-2660  
(513) 946-7777 FAX (513) 946-7778  
[www.southwestohioair.org/](http://www.southwestohioair.org/)

**20** Lake County General Health District  
Air Pollution Control \*  
33 Mill Street  
Painesville, OH 44077  
(440) 350-2543 FAX (440) 350-2548  
[www.lcghd.org](http://www.lcghd.org)

**21** Mahoning-Trumbull APC Agency \*  
345 Oak Hill Ave., Suite 200  
Youngstown, OH 44502  
(330) 743-3333 FAX (330) 744-1928  
[www.ychd.com/services/airpollution.aspx](http://www.ychd.com/services/airpollution.aspx)

\*Facilities located within these jurisdictions should file air permit applications with Ohio EPA's Northeast District Office (NEDO).