Minnesota Pollution Control Agency

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Facts about Air-Quality Requirements for Automotive Repair Shops

Air quality regulations require every business to look at the kinds and amounts of materials that are, or potentially could be, emitted to the air. Businesses with emissions of air pollutants above certain levels must apply for permits from the Minnesota Pollution Control Agency (MPCA).

MPCA staff have already calculated emissions from many sources and have determined them to be "insignificant sources" of air pollution. If you **only** conduct activities that are considered insignificant sources of emissions, you are not required to obtain a permit.

If you have other emission sources, you must consider whether you need a permit, based on those emissions, but you will not need to consider the insignificant sources. The following activities often found in automotive repair shops are considered insignificant sources of air pollution by the MPCA.

- Small, hanging space heaters fueled by kerosene, natural gas, or propane. (Space heaters are not connected to piping or ducting.)
- Fuel-burning equipment of less than 500,000 Btu/hour capacity (includes used-oil burners). If you have several burning devices and the total of all exceeds 2,000,000 Btu/hour, call the number listed at the end of this fact sheet for help.
- Routine housekeeping and building maintenance such as painting (includes spray-painting buildings), retarring roofs and paving parking lots. Does not include spray-painting for fleet maintenance.
- Processes that emit dust and fine particles such as brake work and other equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, and surface grinding, provided the emissions from the equipment are vented inside the building 100 percent of the time (whether or not they are filtered through an air filtering system).
- Gasoline storage tanks with a combined tank capacity of 10,000 gallons or less.
- Above and below ground fuel-oil and used-oil storage tanks with a combined tank capacity of less than 100,000 gallons.
- Radiator-repair operations and other alkaline/phosphate and associated cleaners and burners.
- Operation of mobile sources such as forklifts.
- A business that uses less than 200 gallons of volatile organic compounds (VOCs) for any consecutive 12-month period. This includes any hazardous air pollutants which are also VOCs.

  To determine the gallons of VOCs, multiply the percent of VOCs contained in a material times the number of gallons of VOC-containing material. Any recycled

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VOCs may be subtracted from the total if the amount recycled is documented. Keep records.

- Brazing, soldering, or welding equipment.
- Non-asbestos equipment used exclusively for binding lining to brake shoes.
- Aerosols, brake cleaners and other individual emissions units used at your business location that each have a potential to emit less than 4,000 pounds/year of carbon monoxide or less than 2,000 pounds/year of each of the following: NO_x, SO_2, PM, PM_{10}, VOCs and ozone. This is approximately equivalent to:

  - five one-pound aerosol cans per day, every day, for a year;

  - windshield wiper fluid usage less than 5450 gallons in a year;

  - antifreeze usage less than 390 gallons in a year.

- MPCA staff are reviewing potential emissions from gas pumps and may need to include them as a significant source at a later date.

Businesses that use 200 gallons or more of VOCs for any consecutive 12-month period or who use more than five one-pound aerosol spray cans per day must do the following calculations to determine whether or not they need a permit.

If the combined amount of parts-washer solvent, antifreeze and windshield-washer fluid you used in the last calendar year is 200 gallons or more, do calculations #1-#3 on the following pages. If you used more than the equivalent of five one-pound aerosol cans per day, do calculation #4.

VOCs are contained in solvent-based parts washers and antifreeze. Water-based parts-cleaning solutions do not contain VOCs.

Capacity Factor

Before you can do the calculations, you will need to determine the capacity factor for your business. The capacity factor is an estimate of the capacity at which the facility could operate compared to the capacity at which it is operating. Using the capacity factor in the calculations will allow you to increase the number of employees and the number of hours worked per week without having to recalculate for each change. NOTE: Your capacity factor should be one or more.

Example #1: Business A has employed 3 people but has room and equipment for 4. It operates 12 hours a day for 6 days, a total of 72 hours per week. To calculate the capacity factor, multiply everything above the horizontal line and divide by everything below:

# of employees Business A has space and equipment for ⇓	# of hours in a week ⇓		
4	168		
3	72	= 3.1	(capacity factor)
⇑ # of employees Business A has now	⇑ # of hours Business A is open each week		

Example #2: Business B has 3 full-time and 1 half-time employees but has room and equipment to employ 5. It operates 56 hours a week. To calculate the capacity factor:

# of employees Business B has space and equipment for ⇓	# of hours in a week ⇓		
5	168		
3.5	56	= 4.3	(capacity factor)
⇑ # of employees Business B has now	⇑ # of hours Business B is open each week		

Now calculate the capacity factor for your business:

# of employees you have space and equipment for ⇓	# of hours in a week ⇓
⇑ # of employees you have now	⇑ # of hours you are open each week

= _____ (capacity factor)

You are now ready to calculate the VOCs emitted each year from parts washers and antifreeze. Remember, you need to do calculations #1-#3 only if the parts-washer solvent and antifreeze you used in the last calendar year totaled more than 200 gallons. Do calculation #4 if you used more than five one-pound aerosol cans a day. Superscripts refer to the notes in the right-hand column.

1. **For each parts-washer unit**, write in the correct numbers. Then multiply everything on the top of the horizontal line and divide by everything on the bottom.

gallons used per year ⇓		Your capacity factor[b] ⇓	density in lb/gal (see MSDS)	
	0.5[a]		6.4[c]	= ____ ton/yr of VOCs
1	1	1	2,000 lb/ton	

2. **For antifreeze**, write in the correct numbers. Then multiply everything on the top of the horizontal line and divide by everything on the bottom.

gallons used per year ⇓		Your capacity factor[b] ⇓	density in lb/gal (see MSDS)	
	0.1[a]		9.4[d]	= ____ ton/yr of VOCs
1	1	1	2,000 lb/ton	

Notes:

[a] Portion assumed to be lost to spillage and evaporation. This number is purposely estimated high.

[b] Your capacity factor, calculated above.

[c] Density of parts-washer solvent in pounds per gallon. You can find this number on the Material Safety Data Sheet. The density for petroleum naphtha is 6.4 lb/gal.

[d] Density of ethylene glycol. Most antifreeze is ethylene glycol.

3. **For aerosol cans**, write in the correct numbers. Then multiply everything on the top of the horizontal line and divide by everything on the bottom.[e]

gallons used per year ⇓		Your capacity factor[b] ⇓	density in lb/gal (see MSDS)		
	0.1[a]		8.0[g]	= ____	ton/yr of VOCs
1	8[f]	1	2,000 lb/ton		

Notes

[e] To simplify this calculation, we assumed that 1) everything in all aerosol cans was emitted and was all the same hazardous air pollutant; 2) that all cans are 16 ounces; and that 3) all contents have a density of 8 lb/gal or less.

[f] Mathematical factor showing a 16 oz. can contains 1/8 of a gallon.

[g] Assumed density of aerosols. If most of your aerosols have a higher density, please change this number to the correct density.

Now, add things up.

1.	Parts washer #1 _____ Parts washer #2 _____ Parts washer #3 _____	• If your answer for either 2 or 3 is 10 or more or the sum of 2 and 3 is 25 or more, you may need to submit a permit application. Call the MPCA Small Business Assistance Program at (651) 282-6143 or (800) 657-3938
2.	Antifreeze _____	
3.	Aerosol cans _____	• If the sum of 1-3 is more than 100, contact the MPCA Small Business Assistance Program at (651) 282-6143 or (800) 657-3938. You will need to do additional calculations to determine whether you need a permit.
	TOTAL _____	

from consumers.