



## ***Facts about* Controlling Brake Dust to Protect Your Health ...what every mechanic should know**

Mechanics and anyone else in a garage where brake and clutch work are done may be exposed to asbestos dust. Some brake dust can be seen when a brake drum is removed from a car, truck, or other equipment. But there are also many very small dust particles that can't be seen with the naked eye.

These invisible particles may be asbestos or other brake lining materials. Breathing these particulates can damage your health. Many years after breathing them, they may cause shortness of breath, lung disease, or cancer.

Asbestos is only one of many materials used in brake linings today. The only sure way to know what is in the dust from a particular brake is to test it in a laboratory. Since some newer brake lining materials are still being tested, caution is necessary.

*The only practical way to protect your health and that of those around you is to control the release of brake dust in your garage to the lowest level possible.*

### **Cleaning Methods that Release Brake Dust into the Air**

**Air Hose – DON'T BLOW BRAKE DUST!!  
NEVER USE AN AIR HOSE FOR**

**CLEANING.** This blows brake dust into the air of your garage, it is one of the worst things you can do, and it is illegal.

When brakes are cleaned with an air hose, invisible particles of brake dust can stay in the air long after a brake job is done. Any activity in the brake work area can stir up the particles that have settled.

**Other Methods that Release Brake Dust into the Air** – Also not recommended are cleaning with a dry brush or rag, wet brush or rag, garden hose, liquid squirt bottle, solvent spray, or ordinary shop-vac. These methods will also stir up visible and invisible brake dust. Many of these dust particles are so small that they can pass through the filter bag of an ordinary vacuum cleaner and spread throughout a garage.

### **Controlling Brake Dust**

**Vacuum/Enclosure Method** – A vacuum/enclosure system has a special box with clear plastic walls or windows, which fits tightly around a brake assembly. Some boxes can even fit over a brake drum. Good brake cleaning can be done without exposing mechanics or contaminating a garage. A special air gun inside the box is used for cleaning. An exhaust hose goes from the box or drum to a special HEPA\* asbestos vacuum cleaner, which draws out and stores the brake dust.

\* HEPA stands for an extremely fine high-efficiency particulate aerosol filtration system

The manufacturer's instructions should be carefully followed when using this system and changing the filters or collection bags. Improper changing can release dangerous amounts of asbestos into the air.

Steps for using this type of equipment on drum brakes are simple:

1. Check that the hose is securely fastened to the HEPA vacuum container and to the brake enclosure. Also check that the vacuum container seals and clips are in proper functioning order according to the manufacturer's instruction.
2. Remove the wheel.
3. Turn on the asbestos vacuum cleaner.
4. Place the enclosure over the drum, being sure it forms a tight seal behind the backing plate.
5. Place hands into the attached rubber gloves, if the enclosure is equipped with them.
6. Remove the brake drum. Some equipment allows use of a hammer or other tools when needed inside the enclosure for drums that are hard to remove.
7. Blow dust off the drum and brake assembly using the air gun attachment inside the enclosure.
8. Clean all the inside surfaces of the enclosure towards the vacuum exit using the air gun attachment inside the enclosure.
9. Remove the enclosure and turn off the vacuum cleaner.

**Wet Methods** – Using specially designed low-pressure spray equipment that wets down brake

dust and properly catches the run-off may prevent some asbestos from spreading around a garage. Be sure to use only the liquid recommended by the manufacturer.

**Waste** – All waste that contains brake dust must be carefully disposed of according to Federal and local regulations for asbestos materials.\*

Asbestos waste should be placed in a specially marked heavy plastic bag, double tied, and stored in a leakproof, air-tight container designated for asbestos waste. The waste should be brought to a landfill approved for asbestos disposal.

**Machining and Beveling** – Use pre-ground, ready-to-install parts. If a brake lining must be drilled, grooved, cut, beveled, or lathe-turned, low speeds should always be used to keep down the amount of dust created. All machinery should have adequate HEPA-equipped, local exhaust-dust collection systems to prevent asbestos exposures and shop contamination.

**BRAKE LININGS SHOULD NEVER BE GROUND** because this makes a lot of dust. Slow lathe-turning will get the same job done with much less dust.

**Special Areas for Brake Work** – Where practical, brake work should be done in a special area set apart from other work areas. No one should eat, drink, or smoke in an area where brake work is done. Smokers who are exposed to asbestos, even while they are not smoking, are at specially high risk of getting lung cancer. If possible, work clothes should be laundered at special facilities equipped to wash clothing contaminated with asbestos.

\* OSHA asbestos waste disposal regulations are covered under 29 CFR 1910(j)(2). Transport and disposal of asbestos waste should be done only by individuals familiar with procedures for handling asbestos waste in accordance with EPA's waste disposal guidance (EPA/530-SW-85-007)

## ADDITIONAL INFORMATION

### DO's

**DO** clean brakes and drums with special "HEPA" vacuum cleaners.

**DO** use pre-ground, ready-to-install parts when possible.

**DO** lathe-turn brake blocks at a low speed with proper HEPA-equipped exhaust ventilation.

**DO** dispose of asbestos waste according to federal and local regulations.

**DO** wash thoroughly before eating or going home.

**DO** change into clean clothes before going home.

### DON'Ts

**DON'T** clean with:

- air hose
- liquid squirt bottle
- dry brush or rag
- wet brush or rag
- solvent spray
- ordinary shop-vac
- garden hose

**DON'T** grind brake blocks.

**DON'T** lathe, bevel, drill, or cut brake blocks without proper exhaust ventilation.

**DON'T** take work clothing home.

**DON'T** eat, drink, or smoke in work areas.

For copies or additional free information on asbestos, contact the EPA office in your region or:

Minnesota Pollution Control Agency or  
Special Pollutants Program  
520 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-7300 or 1 (800) 657-3864

U.S. EPA  
TSCA Assistance Office, TS-799  
401 M Street SW  
Washington, D.C. 20460  
(202) 554-1404

Additional occupational information on asbestos is available from:

OSHA Office of Information and Consumer  
Affairs, Room N-3637  
200 Constitution Avenue N.W.  
Washington, D.C. 20210 (202) 523-8151

National Inst. for Occupational Safety and Health  
OSHA Division  
4676 Columbia Parkway  
Cincinnati, Ohio 45226 (513) 533-8323

Minnesota Department of Health  
P.O. Box 64975  
St. Paul, Minnesota 55164-0973 (651) 215-0903

Minnesota Department of Labor and Industry  
443 Lafayette Road  
St. Paul, Minnesota 55155 (651) 296-2116

This fact sheet was recreated for distribution from a Federal Brake Mechanic Education Program fact sheet (EPA document: EPA-560/OPTS-86-003, generated in September 1986). Other materials include a poster, a technical guidance document, and a videotape.



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