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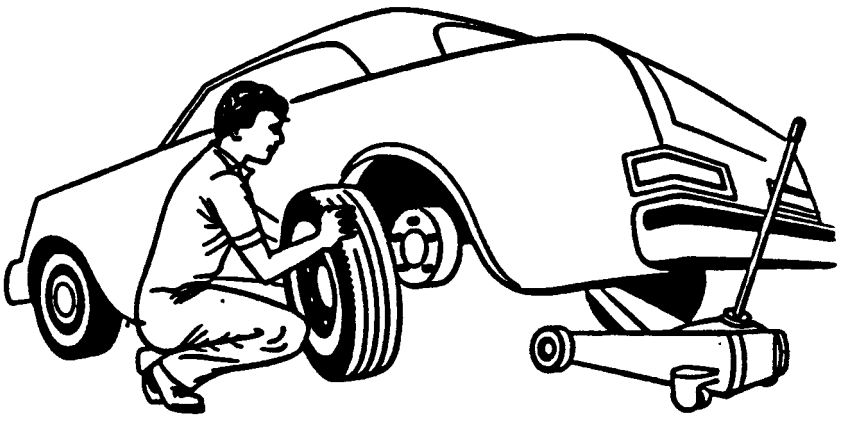
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Asbestos Action Program

EPA

Controlling Brake Dust to Protect Your Health

...What Every Auto Mechanic Should Know



PLAINTIFF'S EXHIBIT
TN-RS

CONTROLLING BRAKE DUST TO PROTECT YOUR HEALTH

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 particles 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 way 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 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 this is now 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.

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 instructions.
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.

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

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.

Machining and Bevelling. Use pre-ground, ready-to-install parts. If a brake lining must be drilled, grooved, cut, bevelled, or lathe-turned, low speeds should always be used to keep down the amount of dust created. All machinery should have an adequate, "HEPA"-equipped local exhaust dust collection system 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 you smoke, you should get help to stop smoking. 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

This fact sheet was prepared by the Federal Brake Mechanic Education Program at the U.S. Environmental Protection Agency. Other free materials include a poster and a technical guidance document. A videotape is also available.

For copies of these materials or additional free information on asbestos, call or write to the EPA office in your region or:

U.S. EPA
TSCA Assistance Office, TS-799
401 M Street, S.W.
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 Institute for
Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, Ohio 45226
(513) 533-8323

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.

DO stop smoking.

DON'Ts

DON'T clean with:

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

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.