

car Maintenance checklist



Car Care for Clean Air



motor

Vehicles—
part of the air quality
pollution problem

In Maryland, about 1/3 of all ozone air pollution comes from on-road vehicle emissions. You can help make a real contribution to clean air by proper driving and maintenance of your vehicle.

Start now

by taking this action:

1. **Maintain your car properly** by following the guidance in your vehicle owner's manual. Seek regular maintenance by a skilled technician. Check tire pressure and wear regularly. Periodically replace air filters, belts, coolant hoses, fluids, oil and oil filters.
2. **Pay attention** to your vehicle's warning lights. They can tell you when there are problems. The Check Engine light will alert you to potential emissions problems.
3. **Consider** having your vehicle repairs performed at a facility that participates in Maryland's voluntary Certified Emissions Repair Facility (CERF) program. Each CERF employs qualified personnel and possesses diagnostic equipment to perform effective repairs on vehicles that fail the emissions test.
4. **Drive wisely...**
5. **Avoid unnecessary driving...**



four

Good Reasons

To perform preventive maintenance on your vehicle

one
A well-maintained vehicle **saves you hundreds of dollars each year** by avoiding major repairs in the future.

three
A well-maintained vehicle **helps protect you and your family** because it is safer to drive. About 5% of all motor vehicle accidents are caused by vehicle neglect.

two
A well-maintained vehicle with 50,000 miles on it **pollutes only 40% as much as the same vehicle** when poorly maintained.

four
A well-maintained vehicle is **less likely to break down** on the highway.

car Maintenance Checklist

Oil Change

Most important preventive measure.

- **Change oil every six months or 6,000 miles** under normal use.
- **Change oil every three months or 3,000 miles** under severe use; see Severe Driving Conditions on page 13.



brakes

Visually inspect **brake linings** once a year or every 12,000 miles. A rupture of a brake line will result in a loss of over 50% braking power.

- When replacing **brake linings or disk brakes**, replace in pairs (both front or both rear) to avoid uneven braking and sideways pulling.

hydraulic system: Signs of impending brake failure are:

- **Hard scraping or grinding sound** when breaks are applied.
- **Brake light comes on.** Go to service station immediately. Hydraulic system may be about to fail.

tires

Keep tires properly inflated because:

- **Both underinflation and overinflation** can cause more frequent tire failure or flats.
- **Tire pressure drops** 1 psi for every 10 degrees in temperature.
- A **10% underinflation** of all four tires may decrease gas mileage by 10%.
- A **rhythmic thumping sound** while driving may signal that one or more tires is out of balance.
- **Tread** should be at least 1 1/6" on two adjacent tread lines.
- **Tendency to hydroplane** on very wet roads increases as tread depth decreases.
- Keep wheels **properly aligned**.



Coolant

hoses

Coolant hoses (upper radiator hose, bypass hose, and heater hose) should be changed every four years. **External appearance of hoses** does not indicate overall condition.

To check condition of hoses:

- **Engine must be cold.**
- **Check clamps**
- **Use finger and thumb**, not whole hand, to check for weakness.
- **Squeeze** area of hose **near connectors**.
- **Squeeze** area near **middle of hose**.
- **If ends are soft and feel mushy** compared to middle of hose, it may be time to replace hoses.
- **Oil spilled on hoses** will weaken them.

Cooling

systems

Warning signs of a leaking, clogged or corroded radiator, or leaking hose, are:

- Temperature gauge runs high.
- Coolant on pavement or floor of passenger compartment.
- Poor A/C or heater performance.

WIT



tune-up

Older Car

Adjust:

Curb idle
Fast idle
Timing

Check:

Carburetor
Distributor
Cap and rotor
Ignition timing

Replace every 15,000 miles:

Air filter

Replace every 25,000 miles:

Transmission fluid
and filter
PCV valve and filter

Replace every 30,000 miles:

Distributor points
and condensers
Spark plugs

Newer Car

Does not have
distributor cap,
rotor or carburetor.

Check at 30,000 miles:

Spark plug wires;
newer cars run
hotter.
Exhaust gas recirculation
system (EGR)

Replace:

Oxygen sensor
wires:
at 60,000 to
100,000 miles;
Double platinum
spark plugs after
50,000 miles.

Timing belts

Not all cars have timing belts.

If car is equipped with timing belt, **replace it every 60,000 miles or manufacturer's recommendation.** Failure to do so could result in **timing belt breakage** and expensive engine rebuild or repair to cylinders, valves, and pistons.

Replacing

belts

Old cars have **separate belts** that run the A/C, alternator, radiator fan, power steering motor, and water pump. New cars have only **one belt** called a "serpentine" belt.

- Replace **single belts** at **60,000 miles.**
- Replace **serpentine belts** every **two years or at 30,000 miles.**



Winterizing

Before winter turns cold, **check:**

Battery:
check corrosion
around terminals
and clean with
baking soda solution.

Brakes:
see brakes page

Engine oil:
check for proper
viscosity.

Exterior lights

Heater operation
Radiator
Tire pressure
including spare: Keep at
proper pressure. Tires
deflate as

temperature drops.

Shock absorbers
Windshield wipers
and fluid.

Items to **store in car** during winter:

**Blankets/extra
winter clothing:**
including hat, gloves.

Flashlight:
with fresh batteries.

Jumper cables.

**Flares or bright-
colored cones.**

Sand or cat litter.

**Roll of paper
towels.**

Ice scraper/brush.

Small shovel.

Severe

Driving Conditions

More than 15,000 miles a year
under one or more of the following
conditions:

- **Stop-and-go traffic.**
- **On snow or ice.**
- **On hilly terrain.**
- **With a trailer/boat in tow.**
- **In extreme cold and/or heat**

Power Steering

fluid

Check power steering fluid and power
steering fluid **hoses** for leaks. **Significant
loss of fluid** can cause the steering to fail;
serious accidents have resulted.

- Replace **power steering fluid every
24,000 miles.**



a/t

Automatic Transmission

Most A/T failures are caused by overheating.

- **The A/T can overheat**, even in winter, if you rock your car between drive and reverse when you're stuck in snow.
- **If the A/T fluid turns brown** or has a burnt odor, change fluid and A/T filter immediately.
- **For severe driving conditions**, change your transmission fluid and filter every 15,000 miles.

a/c

Air Conditioner

Always use manufacturer-recommended refrigerants. Older cars use R-12 (also known as Freon). New cars use R-134a.

- **Do not use** R-12 substitutes, such as propane or butane, due to their EXTREME flammability.
- **Never mix refrigerants.**

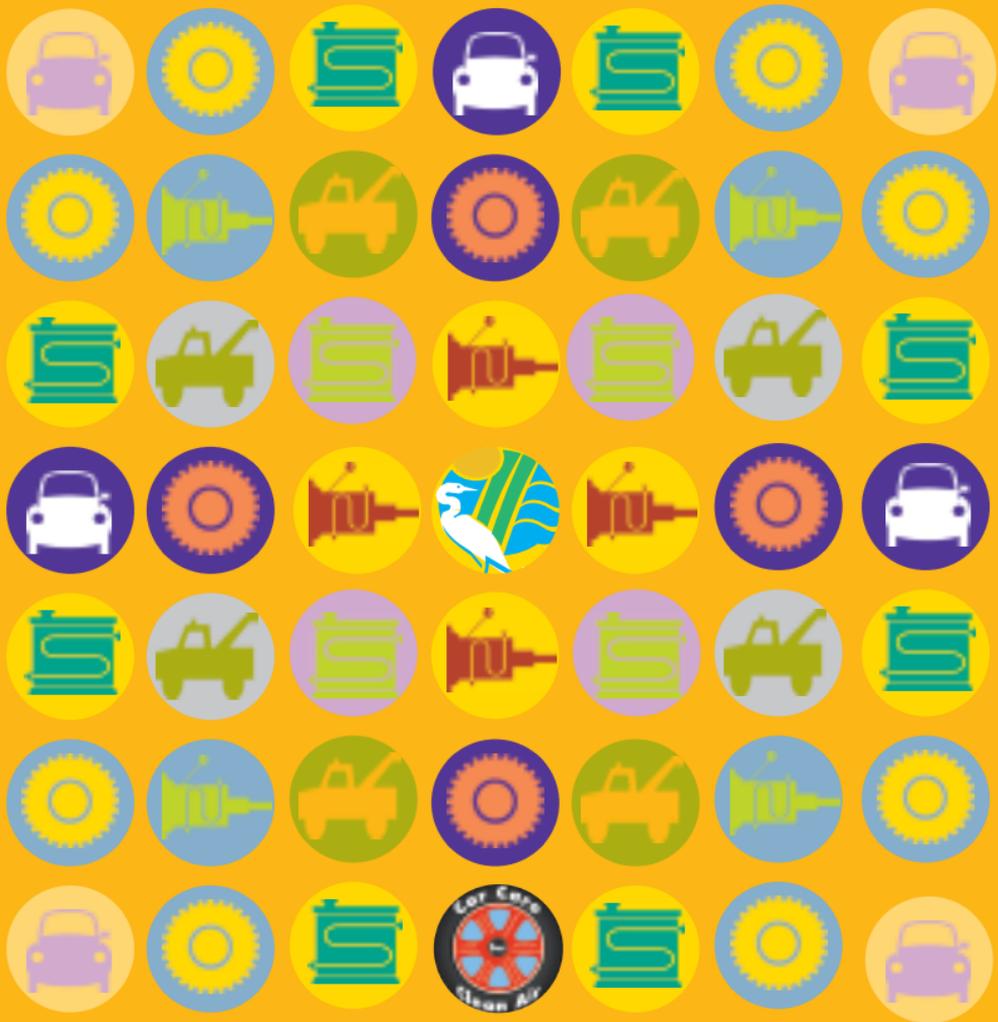


For information about motor vehicles and air pollution, call Maryland Department of the Environment,
 Mobile Sources Control Program at:
1-800-633-6101 ext. 3270
 (toll free in Maryland)
 or (410) 537-3270
www.mde.state.md.us

For questions about the
 Vehicle Emissions Inspection Program, call:
1-800-638-VEIP (8347)

Robert L. Ehrlich, Jr., Governor, Michael S. Steele, Lt. Governor
Kendall P. Phillbrick, Secretary
Jonas A. Jacobson, Deputy Secretary

Information was provided by the following companies and organizations with their permission:
 Car Care Council
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 VCA Net, Inc.



Car Care for Clean Air seeks innovative and voluntary approaches to achieve air quality improvements by reducing air pollution from mobile sources. As an owner of a motor vehicle, you can contribute to clean air by properly maintaining and using your vehicle. This fact sheet provides simple tips that will help you take action now.

(2005)