



Pacific Northwest Pollution Prevention Resource Center
Practical Solutions for Economic and Environmental Vitality.

Safer Alternatives for Auto Repair Shops: Aerosol Brake Cleaners, Engine Degreasers & Fuel Injectors

Many auto repair shops use aerosol and non-aerosol solvent-based cleaners because they are effective at quickly dissolving oil, grease, dirt, tars, grime, burnt-on carbon, and heavy lubricants. But due to known environmental and health effects related to their use, several solvents commonly used in auto repair shops may be subject to hazardous waste regulations in the federal level (**CFR Title 40, Parts 260-299**) and in the state level (**WAC 173-303-070**).

Overexposure to Solvent-Based Aersols

Depending on the type of solvent, overexposure to solvent-based aerosol cleaners in an auto repair shop can have a detrimental effect on your health. More specifically, solvents can affect the nervous system (the brain) and can cause nausea, dizziness, clumsiness, and drowsiness. Overexposure for months or years can have more serious long-lasting effects, or possibly permanent damage to the nervous system, particularly in your hands, arms, legs, and feet. Examples include, but are not limited to: 1) fatigue, 2) sleeplessness, 3) loss of short-term memory, 4) difficulty in concentrating, or 5) poor coordination. Contact with the skin can cause dermatitis, damage to the reproductive system, and even cancer.

Know the Chemicals You Use

Solvents Commonly Found in Aerosol Automotive Cleaners	
<i>SOLVENT</i>	<i>CAS No.</i>
1. Acetone	1. 67-64-1
2. Toluene	2. 108-88-3
3. Xylene	3. 1330-20-7
4. Heptane	4. 142-82-5
5. Methanol	5. 67-56-1
6. Ethylbenzene	6. 100-41-4

Your shop uses either non-solvent or solvent-based cleaners. To confirm whether the cleaners you are using contain solvents, ask to see the Material Safety Data Sheet (MSDS), which will inform you, in Section 2 (Chemical Abstract Service (CAS) number), what types of solvents, if any, are contained in the cleaners. Here is a list of common solvents:

Common Automotive Cleaners that Contain Solvents	
1.	CRC Brakleen Brake Parts Cleaner
2.	CRC Clean R Carb™ Carb Cleaner
3.	Radiator Speciality Carb Clean, Environmentally Responsible
4.	Johnsens Non-Chlorinated Brake Parts Cleaner
5.	Non-Chlorinated Brake & Parts Cleaner
6.	Brake-Clean Earth Friendly Brake Parts Cleaner
7.	Moc Throttle Body & Air Intake Cleaner
8.	3M™ Throttle Plate & Carb Cleaner

**It is important to note that this list of solvents is only an example of some of the chemicals that can be found in automotive cleaners. Only through information contained in the MSDS can you identify and confirm what solvents are found in your cleaner.*

General Uses of Automotive Cleaners

Aerosol automotive cleaners are commonly used as:

- Brake Cleaners
- Engine Degreasers
- Fuel Injection and Carburetor Cleaners
- General Purpose Degreasers

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Aqueous Soy-Based Cleaners

Preferred Safer Alternatives

- * Ace Coating, Enviro-Power Grease & Tar Remover
- * Brulin & Co, Aquavantage 3800B
- * Brulin & Co, New Terragreen Degreaser
- * Armick Chemicals, Navsolve
- * Clea Degreaser CL46540, Clea Care Essentials
- * DeltaGreen, Inc., Delta Green



Use With Caution

Other Common Solvents

- * Acetone
 - * Heptane
- These solvents are used to clean metal parts and are good (particularly acetone) for dissolving other substances, such as paint, marker, or glues.



Extreme Caution

Common Petroleum Hydrocarbons

- * Mineral Spirits
 - * Toluene
 - * Xylene
 - * Ethylbenzene
- Petroleum hydrocarbons are the primary constituents in oil, gasoline, diesel, and a variety of solvents and penetrating oils. As such, petroleum hydrocarbons can adversely affect human health via inhalation, dermal, and oral routes. Acute exposure can lead to central nervous system depression resulting in lack of coordination, slowed reactions, and kidney and liver damage.



Totally AVOID!

Common Chlorinated Solvents

The following Chlorinated Solvents are all **CARCINOGENS**:

- * Trichloroethylene (TCE)
- * Methylene Chloride

Chlorinated solvents are a large family of chemical compounds that contain chlorine and are used for a wide variety of commercial and industrial purposes, including degreasers and metal cleaning. Solvent exposure can lead to short-term or long-term health effects, depending on the manner by which they entered your body and the amount of exposure. Short-term side effects may include dizziness, fatigue, headaches, and/or skin rashes. Long-term side effects may include chronic skin problems, and/or damage to the nervous system, kidneys, or liver. Some chlorinated solvents are also known to cause cancer, in both humans and animals.

Additional information for safer alternatives for auto repair solvents (aerosol) can be found at:

1. South Coast Air Quality Management District (California) -- Certified Clean Air Solvent Products and Companies List:

Find more technical assistance resources on www.pprc.org