



Filter Knowledge, Unfiltered

## Technical Service Bulletin 00-1R2

### Cabin Air Filters – Purpose, Design and Function

When the vehicle is in motion, or when the ventilation system is in use, all impurities that are present in the outside air are sucked into the cabin like a vacuum. Unfiltered air is not only unpleasant; it can also lead to allergic reactions. This creates a need for the filtration of the outside air which is particularly important for the passengers in the vehicle.

Although not all vehicles have them, most vehicles manufactured today are equipped with a Cabin Air Filter (CAF). This important filter, located in the fresh air intake system, is also known as a passenger compartment filter, pollen filter or dust filter.

Initially the CAF was designed to remove solid contaminants such as dust and soot. Typically CAFs capture more than 95 percent of all particles 3 micron and greater. In addition, a high percentage of contaminants below 3 micron should be removed at an acceptable pressure drop. Particulate in this range includes: pollen, exhaust soot, bacteria, insecticides and mold spore, the common cause of that stale musty smell emitted from the vehicle air vents. It is noteworthy that the majority of particulate matter below 1 micron in size is manmade: exhaust gas particulate, industrial dust, carbon black, cigarette smoke, etc.

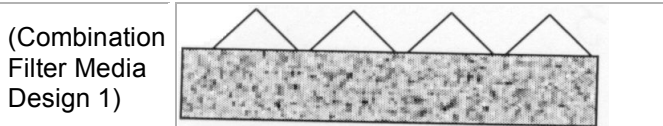
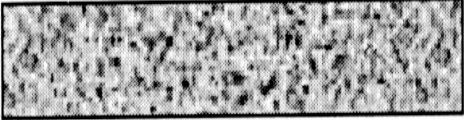
#### Design and Function of Cabin Air Filters:

The Particle Filter removes solid particles such as dust, soot, spores and pollen. The media in this type of filter is a special type of paper or non-woven material (micro-fiber fleece). Additionally, the filter media could be charged electrostatically. The combination of electrostatic and mechanical filtering results in high filter efficiency.

(Particle Filter Media Design)



The Combination Filter or Two Stage Filter combines absorption media with the particle media in one filter. The particle filtration media captures the small particles such as dust, pollen, soot and spores. The absorptive media is activated by highly porous charcoal and filters toxic gases and odors.



**Change interval:**

A CAF should be changed on a regular basis according to the vehicle manufacturers' recommendations. If a cabin filter is NOT changed regularly the performance of the fresh air intake system will be diminished.

For additional information, contact:

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