



Certificate No. FM 22786
ISO 9001:2015

Ref.: FACTORS EFFECTING THE WORKING LIFE OF A GAS FILTER

To whom it may concern

Monday, 26th March 2019

The assessment of how long a combination gas filter will last is a difficult question to answer, a multitude factors will contribute to the working life of a filter or filter pair. Certified filters for respiratory protective devices are tested against specific conditions during the certification process that will not necessarily reflect the workplace environment in which they are utilised or how they are used.

Working Life of a Gas Filter

A gas filter adsorbs gaseous airborne contaminants and has a certain capacity to do so, once a filter has reached capacity it becomes saturated. Once a filter has become saturated the filter no longer works effectively. Factors that affect the working life of a gas filter are (but are not limited to):

- **Concentration** – Filters used in environments with higher concentrations of gaseous containment will become more saturated more quickly than filters used in environments with lower concentrations of gaseous containment.
- **Temperature and Humidity** – These environmental conditions can often affect when a gas filter reaches saturation typically increased temperature and humidity will reduce the time it takes a filter to become saturated.
- **Specific Contaminants** – Filters of a given class are tested against a specific gas with a specific time a filter must last under certain conditions (also known as the breakthrough time). Not all organic gases for instance will be filtered in the same way, some chemicals will be adsorbed to the filtering medium better than others. Some contaminants may saturate a filter slower or faster than would be expected.
- **The user** – The individual end user has significant influence on the working life a filter, users with naturally higher breathing rates may saturate a filter quicker than users with lower breathing rates. Also users performing more active work will saturate a filter quicker than users performing sedentary work.

Changing a Gas Filter

- A gas filter will need changing once breakthrough has been detected. The user will be able to notice breakthrough once they begin to detect an increase in concentration of contaminant via taste or smell.
- It should be noted that the following filter classifications are single use only and must be changed after a single shift regardless as to whether or not breakthrough has been reached: AX, AXP3.
- With frequent use, a gas filter should not be used more than one week or five working days from first use.
- With infrequent use a gas filter should not be used more than twenty eight days from first use.

Yours faithfully

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