



Test Report

J1456-02 Issue 1

NIOSH 42CFR Part 84.207
Gas/Vapor Cartridge Bench Tests

Avon Technical Products
DPF12 Gas-Particulate Chemical Cartridges
(Part # 045124)

18 February 2002

Authorized by:

Prepared by:

Dale B. Pfriem
President

Mike Savarin
Technical Manager

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ICS Laboratories, Inc. • 1072 Industrial Parkway North • Brunswick, Ohio 44212 USA
Phone: 330.220.0515 Fax: 330.220.0516

Client: Avon Technical Products
Hampton Park West,
Melksham, Wiltshire,
SN12 6NB
United Kingdom

Date: 20 February 2002
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Objectives:

Contract NIOSH Testing of Avon Technical Products-supplied DPF12 (Part # 045124), Gas-Particulate chemical cartridges, to the requirements of NIOSH 42 CFR Part 84.181; P100 Efficiency.
Contract NIOSH Testing of Avon Technical Products-supplied DPF12 (Part # 045124), Gas-Particulate chemical cartridges, to the requirements of NIOSH 42 CFR Part 84.122; Airflow Resistance.

Materials:

Date provided by the Client:	23 January 2002
Date Testing Authorized:	23 January 2002
Dates of tests:	28 January 2002
Drawing (s):	Not provided
Batch /Lot #:	Not provided
Manufacturer(s) / Supplier:	Scott Health & Safety
ICS Sample ID:	A-X

Seventy-two, (72) DPF12 (Part # 045124) Gas-Particulate chemical cartridges

Equipment:

TSI 8130 Filter Test Bench configured for Di-Octyl Phthalate (DOP) Testing
Tenney Engineering Programmable Environmental Conditioning Chamber

Procedures:

Testing protocols in accord with good laboratory practice were employed for all tests.
Equipment and instrument calibrations were verified current and within specification prior to usage.
Materials for assessment were inventoried, numbered (if needed) and logged upon receipt (re: Materials). All fixtures, tubing, and couplings were cleaned prior to the start of each test sequence to guard against possible cross contamination.

The oil generator used for this testing work, generated a DOP aerosol, with a mass mean diameter = 0.33 μ m, a count median diameter = 0.185 μ m and a geometric standard deviation < 1.6. Dual solid-state forward light-scattering laser photometers were utilized to determine the aerosol mass concentration and particle size distribution. The photometers are capable of measuring the aerosol concentration in the range of 50-200 μ g/liter (mg/m³). The accuracy of the laser photometers over the seven-decade resolution (i.e. 0.001% to 100% of the aerosol test cloud) was +/- 2%.

Filters were challenged to a Boltzmann equilibrium state neutralized DOP aerosol at 25°C +/-5°C at 85 LPM as the individual airflow through each filter. In accord with standard NIOSH protocol, a minimum of three respirators, were fixtured to create sealed assemblies. These were then assessed to full loading conditions (200mg) at a flow rate of 85 LPM for determination of the performance characterization profile. Flow rate was monitored every 5-6 minutes on average and adjusted to maintain a flow rate of 85 LPM +/- 4 LPM.

Following the determination of a **Type I**, filter characterization profile, (constant filtration efficiency with loading) subsequent filter media were assessed for initial penetration only. Data is provided on the following pages.

Summary:

Based on the above data, the DPF12 (Part # 045124) Gas-Particulate chemical cartridges as sampled, **successfully met the requirements** as found in 42 CFR Part 84.181 (P100 Efficiency), for a **Type I** filter characterization, with a penetration **less than 0.03%**. The respirators as sampled, **did conform** to the requirements for initial inhalation resistance as found in 42 CFR Part 84.122 (Airflow resistance), with a resistance of **less than 65 mm water gauge**. Data is presented on the following pages:

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