FROM :SKC DEBBIE FAX NO. :2813733502 Mar. 18 2003 09:49AM P1

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To: MSHA Office of Standards, Regulations, and Variances
Re: Comments on the Information Collection Requirements *30* CFR parts 70, 75, and 90 (Federal Register 6 March 2003)

3 pages total being submitted

18 March 2003

I am pleased to respond to your request for comments in the Federal Register, Vol. 68. No. 44 in the MSHA Proposed Rules published 6 March 2003. I wish to comment on the approach of approving sampling devices. Specifically, I wish to comment on page 10806 af the above-mentioned document, where it states "MSHA also solicits comments on an alternative approach based on the International Standards Organization (ISO) definition of respirable dust."

I strongly urge MSHA to adopt the definition of a respirable dust sampler put forth by ISO. The ISO definition has also been adapted by *the* European Standardization Committee (CEN), the UK Health and Safety Executive (HSE) the American Conference of Governmental industrial Hygienists (ACGIH) and US National Institute for Occupational Safety and Health (NIOSH). The adoption of this international definition of respirable dust samplers by MSHA will go a long way in bridging the global disconnect in respirable sampling methodologies.

As a US governmental agency, I urge MSHA to follow the lead of US NIOSH in characterizing respirable dust samplers far silica in line with the ISO definition. In the NIOSH Manual of Analytical Methods, 4th edition, NIOSH specifies the definition of respirable dust to be "aerosol collected by a sampler with a 4 um median cut point" (See Method 0600 for Particulates Not Otherwise Regulated, Respirable.) In this method and all methods for respirable dust, NIOSH gives a choice of cyclones at various flow rates designed to achieve the ISO definition of respirable dust samplers i.e. a 4 um median cut point:

- 10-mm nylon cyclone at 1.7 L/min (currently used by US MSHA)
- Higgins-Dewell cyclone at 2.2L/min
- Aluminum cyclone at 2.5 L/min
- Or equivalent

This approach is desirable for many reasons:

1. Adopting the ISO definition would bring MSHA into alignment with health and safety professionals in most of the rest of the world,
2. Adopting the ISO definition, would allow for the comparison of exposure data and the comparison of health effects throughout the world.

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3. Adopting the ISO definition would bring MSHA into alignment with specifications of US NIOSH.
4. Having a performance based standard, allows new technology to be introduced and to be used by government and employers, This would include technology that collects a sample for subsequent analysis such as a cyclone sampler of a direct-reading instrument. The manufacturer of the sampler or direct-reading instrument could supply test data to the Secretary for verification that the sampler/monitor meets the performance requirements set forth in the ISO definition of respirable dust samplers.

Thank you for considering my comments.

Sincerely,

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PARTICULATES NOT OTHERWISE REGULATED, RESPIRABLE 0600

DEFINITION: aerosol collected by sampler with 4-µm median cut point

CAS: None RTECS: None

METHOD: 0600, Issue 3 EVALUATION FULL Issue 1: 15 February 1984 Issue 3: 16 January 1998

OSHA: 5 mg/m³
NIOSH: no REL
ACGIH: 3 mg/m³

PROPERTIES: contains no asbestos and quartz less than 1%; penetrates non-ciliated portions of respiratory system

SYNONYMS: nuisance dusts; particulates not otherwise classified

SAMPLING

SAMPLER:	CYCLONE + FILTER (10-mm nylon cyclone, Higgins-Dewell [HD] cyclone, or Aluminum cyclone + tared 5-µm PVC membrane)
FLOW RATE:	nylon cyclone: 1.7 L/min HD cyclone: 2.2 L/min Al cyclone: 2.5 L/min
VOL-MIN:	20 L @ 5 mg/m³
-MAX:	400 L
SHIPMENT:	routine
SAMPLE STABILITY:	stable
BLANKS:	a to 10 field blanks per set

ACCURACY

RANGE STUDIED:	0.5 to 10 mg/m³ (lab and field)
BIAS:	dependent on dust size distribution [1]
OVERALL PRECISION ($\hat{S}_{rT}$):	dependent on size distribution [1,2]
ACCURACY:	dependent on size distribution [1]

MEASUREMENT

TECHNIQUE:	GRAVIMETRIC (FILTER WEIGHT)
ANALYTE:	mass of respirable dust fraction
BALANCE:	0.001 mg sensitivity; use same balance before and after sample collection
CALIBRATION:	National Institute of Standards and Technology Class S-1.1 or ASTM Class 1 weights
RANGE:	0.1 to 2 mg per sample
ESTIMATED LOD:	0.03 mg per sample
PRECISION:	<10 µg with 0.001 mg sensitivity balance; <70 µg with 0.01 mg sensitivity balance [3]

APPLICABILITY: The working range is 0.5 to 10 mg/m³ for a 200-L air sample. The method measures the mass concentration of any non-volatile respirable dust. In addition to inert dusts [4], the method has been recommended for respirable coal dust. The method is biased in light of the recently adopted international definition of respirable dust, e.g., ≈ +7% bias for non-diesel, coal mine dust [5].

INTERFERENCES: Larger than respirable particles (over 10 µm) have been found in some cases by microscopic analysis of cyclone filters. Over-sited particles in samples are known to be caused by inverting the cyclone assembly. Heavy dust loadings, fibers, and water-saturated dusts also interfere with the cyclone's size-selective properties. The use of conductive samplers is recommended to minimize particle charge effects.

OTHER METHODS: This method is based on and replaces Sampling Data Sheet #29.02 [6].