OSHA SAMPLING DATA SHEET #7a

Substance:

Vinyl chloride.

Standard: 29 CFR 1910.93q, permanent standard of October 4, 1974

1. Limits of exposure:

a.	8 hour time weighted average (TWA)	1 ppm
b.	15 minute ceiling average	5 ppm
c.	15 minute ceiling for those electing not to wear respirators	25 ppm

2. Action level: 8 hour TWA 0.5 ppm

Sampling Equipment:

A calibrated personal sampling pump whose flow rate at 50 ml/min is accurate within ± 5% and activated coconut shell tubes containing two sections of 20/40 mesh activated charcoal separated by a 2-mm portion of urethane foam.

Qualifications:

Samples shall be collected only by or under the direction of Compliance Safety and Health Officers (CSHOs) who are Industrial Hygienists.

Sampling Rate:

50 ml/min for all samples

Sample Size:

1. TWA samples:

   a. 5 liter maximum at concentrations below 200 ppm; maximum duration 100 min.

   b. 2 liter maximum at concentrations above 200 ppm; maximum duration 40 minutes.

   NOTE: In some cases it may be necessary to estimate the vinyl chloride concentration with a portable direct reading instrument to determine the proper volume of air to sample.

2. Ceiling average samples:

750 milliliters; 15 min. duration
There should be no variation from 15 minutes unless the variation is justifiable.

Sampling Procedure:

(1) Employee exposures are determined by collecting air samples from a worker's breathing zone using personal samplers.

(2) TWA 8-hour average exposures are determined by collecting a series of consecutive personal air samples that completely cover the duration of exposure in the 8-hours.

(3) Fifteen minute ceiling average exposures are determined by collecting full 15 minute period personal air samples.

(4) Which employee exposures to measure may be determined by screening the concentration of vinyl chloride in the workplace area with a direct reading instrument.

(5) Immediately before sampling, both ends of two charcoal tubes are broken so as to provide openings at least one-half the internal diameter of the tubes.

(6) The first charcoal tube is positioned in the tube holder with the smaller backup section of charcoal being positioned nearest the pump. The second charcoal tube serves as a breakthrough indicator and is connected with a small, i.e 0.5 inch, piece of Tygon tubing to the outlet of the plastic charcoal tube holder with the smaller section of charcoal being positioned nearest the pump and connected to the main sample line leading to the pump. Both tubes must be in a vertical position during sampling to avoid channeling and subsequent premature breakthrough of vinyl chloride.

(7) Air being sampled must not be passed through any hose or tubing before entering the first charcoal tube.

(8) Set the flow rate at approximately 50 ml/min and record the initial counter number. Sample for an appropriate amount of time and record the final counter number. The sample volume is obtained by multiplying the number of counter strokes times the cc/stroke factor. Record the date, location, temperature, pressure and the tube number.

(9) Immediately after sample collection separate the sample tube from the backup tube and cap the tubes with the supplied plastic caps. Put a sample seal on each tube and label the tubes with matching numbers. Designate the sample tube by the letter "S" and the backup tube by the letters "BU". For example, the tubes used to collect the first sample of the day would be labeled 1-S and 1-BU.

(10) Include one blank charcoal tube with every 20 samples (or one with each lot of samples if less than 20 samples are taken). Handle the blank in the same fashion as the others with the exception that no sample is collected on it. The ends are broken and the tube is immediately capped and prepared for shipping. Label the tube as a blank. The backup tubes are not to be considered as blanks.

Analytical Procedure:

Vinyl chloride is desorbed from activated coconut shell charcoal with carbon disulfide and analyzed using a gas chromatograph with a flame ionization detector. The primary charcoal tube is analyzed as the sample (both front and back sections together) and the backup charcoal tube is analyzed as the breakthrough indicator.

Minimum to be Reported:

0.25 ppm

NOTE: Lesser concentrations will be reported as less than 0.25 ppm, except where none is detected it will be reported as "none detected".

Special Considerations:

(1) Do not ship bulk samples of polyvinyl chloride or copolymers of vinyl chloride to the laboratory for VC analysis. Our procedure deals with airborne VC.

(2) Where two or more compounds are known or suspected to be present in the air, transmit this information, including their suspected identities, with the sample to the laboratory.

(3) The sampling places a heavy load on the sampling pump due to the high resistance of two charcoal tubes in series. Therefore, do not operate the pumps more than 8 hours continuously without fully recharging the battery.

CUMULATIVE SUPPLEMENT TO

JULY 1974 EDITION OF

NIOSH CERTIFIED PERSONAL PROTECTIVE EQUIPMENT

Single copies are available from:

Office of Technical Publications
National Institute for Occupational Safety and Health
Post Office Building
Cincinnati, Ohio 45202

Please include a self-addressed mailing label to assist us.

JANUARY 1975

Gas Masks

3. MSA® part numbers 461481, 461482, 461483, 461484, 461485, and 461486 gas masks (with part number 461480 canister) for respiratory protection against vinyl chloride. Approval TC-14G-84, issued to Mine Safety Appliances Co., December 30, 1974.

4. Scott part numbers 601211-17 and 601221-17 gas masks (with part number 084-VCL canister) for respiratory protection against vinyl chloride. Approval TC-14G-85, issued to Scott Aviation, December 30, 1974.

5. Welsh part numbers 7820, 7820S, 7829, and 7829S gas masks (with part number 7800-2VC(TC-14G-91) canister) for respiratory protection against vinyl chloride. Approval TC-14G-91, issued to Welsh, A Textron Company, January 17, 1975.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Center for Disease Control
National Institute for Occupational Safety and Health
Morgantown, West Virginia 26505

The following respiratory protective devices have been approved by the U.S. Department of the Interior, Mining Enforcement and Safety Administration, and the U.S. Department of Health, Education, and Welfare, National Institute for Occupational Safety and Health, since July 19, 1974.

Applicable Approval Regulations

FEDERAL REGISTER, VOL. 39, NO. 227—FRIDAY, NOVEMBER 22, 1974

Title 30—Mineral Resources

CHAPTER I—MINING ENFORCEMENT AND SAFETY ADMINISTRATION, DEPARTMENT OF THE INTERIOR

SUBCHAPTER B—RESPIRATORY PROTECTIVE APPARATUS; TESTS FOR PERMISSIBILITY; FEES

PART 11—RESPIRATORY PROTECTIVE DEVICES; TESTS FOR PERMISSIBILITY; FEES

Deadline Extension

The Secretary of the Interior, through the Mining Enforcement and Safety Administration (MESA) and the Secretary of Health, Education, and Welfare, through the National Institute for Occupational Safety and Health (NIOSH), conduct a testing and approval program for respirators used in hazardous atmospheres pursuant to the regulations contained in 30 CFR Part 11 issued jointly by the Secretaries (37 FR 6244).

On April 9, 1974, following a public hearing on the issue, Part 11 was amended (39 FR 12864) to provide that until September 30, 1974 respirators approved under Part 11 or a Bureau of Mines respirator schedule would be approved for use in hazardous atmospheres.

The amendments provided that after September 30, 1974, only respirators approved under Part 11 or manufactured pursuant to a quality control plan approved under Part 11 would be approved for such use except that if a respirator was purchased before September 30, 1974 and at the time of purchase was approved for use under a Bureau of Mines respirator schedule, it would be approved for use until the dates specified in the regulation. The amendment further provided that after March 31, 1975 only respirators approved under Part 11 would be approved for use except that if a respirator was purchased before March 31 and at that time was approved under a Bureau of Mines respirator schedule and manufactured pursuant to an approved quality control plan, it would be approved for use until the dates specified in the regulation.

Following adoption of the April 9 amendments, respirator manufacturers submitted quality control plans for NIOSH review and approval. While some plans were submitted in a timely manner, a number was not received until after July 1974, and a substantial number has not yet been received. Due to the complexity of the plans and the shortage of qualified manpower to review these detailed plans, there are devices for which a quality control plan has been submitted but not reviewed and approved. The result is that, unless the regulations are amended, after September 30 these devices will no longer be permitted to be sold as approved equipment. Moreover, it is anticipated that a similar situation will develop with respect to the March 31, 1975 deadline.

The purpose of these amendments is to eliminate September 30, 1974 as a deadline date and to extend the March 31, 1975 date described above to June 30, 1975. By that time NIOSH will have had an opportunity to review all of the quality control plans previously submitted as well as those anticipated to be received.

Respiratory equipment already in the possession of industrial users or acquired on or before June 30, 1975 and previously approved under Bureau of Mines respirator approval schedules will continue to be approved for use in accordance with the dates adopted in the April 9, 1974 amendments (39 FR 12864).

Finally, since the requirements for the approval and certification of gas masks are under revision, the deadline date for the approval of those devices has not been established and those devices have been excepted from the June 30, 1975 deadline date. A deadline date for approval and certification of gas masks under Part 11 will be adopted in the future.

Since it is essential that approved respiratory protective devices remain available to industrial users, the Departments find that good cause exists for omitting notice of proposed rulemaking and postponement of the effective date in the issuance of the amendments to Part 11. Accordingly, these amendments, as set forth below, will be effective on September 30, 1974.

Part 11 of Title 30, Code of Federal Regulations is amended and revised as set forth below.

Dated: November 12, 1974.

JACK W. CARLSON,
Assistant Secretary of the Interior

Dated: November 13, 1974.

CASPAR W. WEINBERGER,
Secretary of Health, Education, and Welfare.

In Part 11, a new § 11.2–1 is added and § 11.2 is revised to read as follows:

§ 11.2 Approved respirators other than gas masks.

(a) Until June 30, 1975, respirators or combinations of respirators other than gas masks shall be approved for use in hazardous atmospheres where such respirators or combinations of respirators are maintained in an approved condition and are the same in all respects as those respirators:

(1) For which a certificate of approval has been issued under this part; or

(2) Fabricated, assembled or built under any approval or any modification thereof issued by the U.S. Bureau of Mines, Department of the Interior, in accordance with the schedules set forth in this paragraph:

(i) Self-contained Breathing Apparatus, Bureau of Mines Schedules 13, March 5, 1919; 13A, January 21, 1930; 13B, August 12, 1935; 13c, July 9, 1945; 13D, September 22, 1956, and 13E, July 19, 1968.

(ii) Supplied-air Respirators, Bureau of Mines Schedule 19B, April 19, 1955.

(iii) Filter-type Dust, Fume, and Mist Respirators, Bureau of Mines Schedule 21B, January 19, 1965.

(iv) Nonemergency Gas Respirators, Bureau of Mines Schedule 23B, August 4, 1959.

(b) After June 30, 1975, respirators or combinations of respirators other than gas masks shall be approved for use in hazardous atmospheres where such respirators or combinations of respirators are maintained in an approved condition and are the same in all respects as those respirators for which a certificate has been issued under this part: *Provided*, That if a respirator is purchased on or before June 30, 1975 and at the time of purchase was the same in all respects as a respirator approved under a Bureau of Mines Schedule, it shall be approved for use until the following dates:

Until March 31, 1979, for self-contained breathing apparatus approved under Bureau of Mines Schedules 13–13E.

Until March 31, 1980, for supplied-air respirators approved under Bureau of Mines Schedule 19B.

Until March 31, 1978, for filter-type dust, fume, and mist respirators approved under Bureau of Mines Schedule 21B and for nonemergency gas respirators approved under Bureau of Mines Schedule 23B.

§ 11.2–1 Approved gas masks.

Gas masks shall be approved for use in hazardous atmospheres where such gas masks are maintained in an approved condition and are the same in all respects as those gas masks:

(a) For which a certificate of approval has been issued under this part; or

(b) Fabricated, assembled or built under any approval or any modification thereof issued by the U.S. Bureau of Mines, Department of the Interior in accordance with Bureau of Mines Schedule 14F, April 23, 1955.

(Secs. 202(b), 204, 508, 83 Stat. 763, 764, 803 (30 U.S.C. 812(b), 844, 957); secs. 2, 3, 5, 38 Stat. 370, as amended 77 Stat. 681 (30 U.S.C. 3, 5, 7); sec. 8(g), 84 Stat. 1600 (29 U.S.C. 657(g)))

[FR Doc.74-27363 Filed 11-21-74;8:45 am]

Title 30—Mineral Resources

CHAPTER I—MINING ENFORCEMENT AND SAFETY ADMINISTRATION, DEPARTMENT OF THE INTERIOR

PART 11—RESPIRATORY PROTECTIVE DEVICES; TESTS FOR PERMISSIBILITY; FEES

Respiratory Protection Against Exposure to Vinyl Chloride

The Secretary of the Interior, through the Mining Enforcement and Safety Administration, and the Secretary of Health, Education, and Welfare, through the National Institute for Occupational Safety and Health, conduct a testing and approval program for respirators used in occupationally hazardous atmospheres pursuant to regulation contained in this part.

On October 4, 1974, the Occupational Safety and Health Administration, following a public hearing on the matter, promulgated a standard for the control of employee exposure to vinyl chloride. The standard provides that respiratory protection shall be provided at the request of employees exposed to 25 ppm or less vinyl chloride and requires that respirators shall be selected from those approved under Part 11. Specifically, the standard requires, among other things, that where the atmospheric concentration of vinyl chloride is not over 25 ppm, any gas mask with front- or back-mounted canister or powered air-purifying respirator with canister which provides a service life of at least four hours may be used, and where the concentration is not over 10 ppm, any chemical cartridge respirator with an organic vapor cartridge which provides a service life of at least one hour may be used. The standard further requires a program to assure timely replacement of canisters or cartridges.

The purpose of the amendments set forth below is to establish special procedures for testing vinyl chloride respirators and to adopt a requirement that any canister or cartridge used to protect employees against exposure to vinyl chloride, have an end-of-service-life indicator. Unlike many other gases, vinyl chloride has no inherent warning properties. Where a gas has an odor and where a canister or cartridge is nearing or is at the end of its useful life, the worker is aware because he can smell the gas. Vinyl chloride is odorless and colorless. Thus, with due regard for the wearer's health, any cartridge or canister should possess an end-of-service-life indicator. Section 11.205 provides that after June 30, 1975, each canister or cartridge submitted for approval must have an end-of-service-life indicator. The delay in this requirement is to give the Institute an opportunity to test the effectiveness of the indicators. Section 11.205 further provides that after December 31, 1975—when respiratory protection at 25 ppm or less becomes mandatory—respirators without an end-of-service-life indicator will not be considered approved for use by employees exposed to vinyl chloride. There is no delay in the effective date for the special tests adopted for vinyl chloride respirators.

Since it is essential that there are available approved respiratory devices for protection against exposure to vinyl chloride the Departments find that good cause exists for omitting notice of proposed amendments to Part 11. Accordingly, these amendments, as set forth below, will be effective on December 30, 1974.

Dated: December 24, 1974.

JACK W. CARLSON,
Secretary of the Interior.

Dated: December 10, 1974.

CASPAR W. WEINBERGER,
Secretary of Health, Education, and Welfare.

In Part 11 a new Subpart N for special use respirators is established and Sections 11.200–11.208 applicable to vinyl chloride respirators are added to read as follows:

Subpart N—Special Use Respirators

Sec.
11.200 Vinyl chloride respirators; description.
11.201 Required components.
11.202 Gas masks; requirements and tests.
11.203 Chemical-cartridge respirators; requirements and tests.
11.204 Powered air-purifying respirators; requirements and tests.
11.205 Requirements for end-of-service-life indicator.
11.206 Quality control requirements.
11.207 Labeling requirements.
11.208 Fees.

AUTHORITY: Secs. 202(b), 204, 508, 83 Stat. 793, 794, 803 (30 U.S.C. 842(b), 844, 957); secs. 2, 3, 5, 36 Stat. 370, as amended 37 Stat. 681 (30 U.S.C. 3, 5, 7); sec. 8(g), 84 Stat. 1600 (29 U.S.C. 657(g)).

§ 11.200 Vinyl chloride respirators; description.

Vinyl chloride respirators, including all completely assembled respirators which are designed for use as respiratory protection during entry into and escape from vinyl chloride atmospheres containing adequate oxygen to support life, are described according to their construction as follows:

(a) Front-mounted or back-mou gas masks;
(b) Chin-style gas masks;
(c) Chemical-cartridge respirators
(d) Powered air-purifying respirat and,
(e) Other devices, including combi tion respirators.

11.201 Required components.

(a) Each vinyl chloride respirator scribed in 11.200 shall, where its de requires, contain the following com nent parts:
(1) Facepiece;
(2) Canister with end-of-service-indicator;
(3) Cartridge with end-of-service-indicator;
(4) Harness;
(5) Attached blower; and,
(6) Breathing tube.

(b) The components of each vi chloride respirator shall meet the mi mum construction requirements set for in Subpart G of this part.

§ 11.202 Gas masks; requirements a tests.

(a) Except for the tests prescribed 11.102–5, the minimum requirements a performance tests for gas masks, pr scribed in Subpart I of this part, a applicable to vinyl chloride gas masks.

(b) The following bench tests are a plicable to canisters designed for use wi gas masks for entry into and esca from vinyl chloride atmospheres co taining adequate oxygen to support lif

(1) Four canisters will be equilibrat at 25±5° C by passing 85±5 percent rel tive humidity air through them at liters per minute for six hours.

(2) The equilibrated canisters will resealed, kept in an upright position room temperature, and tested accord ing to subparagraph (3) of this para graph within 18 hours.

(3) The canisters equilibrated an stored as described in subparagraphs (1 and (2) of this paragraph will be teste on an apparatus that allows the te atmosphere at 85±5 percent relativ humidity and 25±5° C to enter the canis ter continuously at a concentration o 25 ppm vinyl chloride monomer at total flow rate of 64 liters per minut

(4) The maximum allowable penetra tion after six hours of testing accordin to subparagraph (3) of this paragrap shall not exceed 1 ppm vinyl chloride.

(c) Where canisters are submitted for testing and approval with a service life of more than four hours, the period of time for testing for vinyl chloride penetration will be performed at 150% of the service life specified in the manufacturer's application. Example: If a manufacturer requests approval of a respirator for six hours use against exposure to vinyl chloride, the maximum allowable penetration after nine hours of testing shall not exceed 1 ppm vinyl chloride.

11.203 Chemical-cartridge respirators; requirements and tests.

(a) Except for the tests prescribed in 11.162-8, the minimum requirements and performance tests for chemical-cartridge respirators prescribed in Subpart L of this part are applicable to vinyl chloride chemical-cartridge respirators.

(b) The following bench tests are applicable to cartridges designed for use with chemical-cartridge respirators for entry into and escape from vinyl chloride atmospheres containing adequate oxygen to support life:

(1) Where two cartridges are used in parallel on a chemical-cartridge respirator, the bench test requirements will apply to the combination rather than the individual cartridges.

(2) Four cartridges or pairs of cartridges will be equilibrated at 25±5° C by passing 85±5 percent relative humidity air through them at 25 liters per minute for six hours.

(3) The equilibrated cartridges will be resealed, kept in an upright position, at room temperature, and tested according to subparagraph (4) of this paragraph within 18 hours.

(4) The cartridges equilibrated and stored as described in subparagraphs (1), (2), and (3) of this paragraph will be tested on an apparatus that allows the test atmosphere at 85±5 percent relative humidity and 25±5° C. to enter the cartridges or pairs of cartridges continuously at a concentration of 10 ppm vinyl chloride monomer at a total flow rate of 64 liters per minute.

(5) The maximum allowable penetration after two hours of testing according to subparagraph (4) of this paragraph shall not exceed 1 ppm vinyl chloride.

11.204 Powered air-purifying respirators; requirements and tests.

(a) Except for the tests prescribed in 11.162-8, the minimum requirements and performance tests for powered air-purifying respirators prescribed in Subpart L of this part are applicable to vinyl chloride powered air-purifying respirators.

(b) The following bench tests are applicable to cartridges designed for use with powered air-purifying respirators for entry into and escape from vinyl chloride atmospheres containing adequate oxygen to support life.

(1) Four cartridges will be equilibrated at 25±5° C by passing 85±5 percent relative humidity air through them at 115 liters per minute for tight-fitting facepieces and 170 liters per minute for loose-fitting hoods and helmets, for six hours.

(2) The equilibrated cartridges will be resealed, kept in an upright position at room temperature and tested according to subparagraph (3) of this paragraph within 18 hours.

(3) The cartridges equilibrated and stored as described in subparagraphs (1) and (2) of this paragraph will be tested on an apparatus that allows the test atmosphere at 85±5 percent relative humidity and 25±5° C to enter the cartridge continuously at a concentration of 25 ppm vinyl chloride monomer at a total flow rate of 115 liters per minute for tight-fitting facepieces and 170 liters per minute for loose-fitting hoods and helmets.

(4) The maximum allowable penetration after six hours of testing according to subparagraph (3) of this paragraph shall not exceed 1 ppm vinyl chloride.

§ 11.205 Requirements for end-of-service-life indicator.

(a) After June 30, 1975, each canister or cartridge submitted for testing and approval in accordance with §§ 11.202, and 11.203, and 11.204 shall be equipped with a canister or cartridge end-of-service-life indicator which shows a satisfactory indicator change or other obvious warning before 1 ppm vinyl chloride penetration occurs. The indicator shall show such change or afford such warning at 80±10 percent of the total service life to 1 ppm leakage, as determined by continuing each test described in paragraphs (b) of each of §§ 11.202, 11.203, and 11.204 of this Subpart until a 1 ppm leakage of vinyl chloride occurs. After December 31, 1975, a cartridge or canister without an end-of-service-life indicator will not be considered approved for use by employees exposed to vinyl chloride.

(b) The applicant shall provide sufficient pretest data to verify the performance of the end-of-service-life indicator required in paragraph (a) of this Section.

§ 11.206 Quality control requirements.

(a) In addition to the construction and performance requirements specified in Sections 11.201, 11.202, 11.203, 11.204, and 11.205 of this Subpart, the quality control requirements in paragraphs (b), (c), and (d) of this section apply to approval of gas masks, chemical cartridge respirators, and powered air-purifying respirators for entry into and escape from vinyl chloride atmospheres containing adequate oxygen to support life.

(b) The respirators submitted for approval as described in paragraph (a) of this Section shall be accompanied by a complete quality control plan meeting the requirements of Subpart E of this Part.

(c) The applicant shall specify in the plan that a sufficient number of samples will be drawn from each bulk container of sorbent material and that where activated carbon is used, the following specific tests will be performed:

1. Apparent density,
2. Iodine number,
3. Moisture content,
4. Carbon tetrachloride number, and,
5. Mesh size.

Such tests shall be performed in a quantity necessary to assure continued satisfactory conformance of the canisters and cartridges to the requirements of this Subpart.

(d) Final performance quality control tests on the complete canisters and cartridges shall be accomplished using the bench tests and procedures prescribed in §§ 11.202, 11.203, 11.204, and 11.205 of this Subpart.

11.207 Labeling requirements.

A warning shall be placed on the label of each gas mask, chemical-cartridge respirator, and powered air-purifying respirator, and on the label of each canister and cartridge, alerting the wearer to the need for a fitting test in accordance with the manufacturer's facepiece fitting instructions, providing service life information, providing specific instructions for disposal, and advising that the wearer may communicate to NIOSH any difficulties that may be experienced in the design and performance of any gas mask, chemical-cartridge respirator, or powered air-purifying respirator approved under the requirements of this Subpart. The service lives of respirators meeting the test requirements of this Subpart shall be specified as follows:

(a) Chemical-cartridge respirator.	1 hour
(b) Gas mask	4 hours
(c) Powered air-purifying respirator.	4 hours

(d) Where the service life of a respirator is approved for more than four hours, the service life for which the respirator has been approved will be specified.

11.208 Fees.

The following fees shall be charged for the examination, inspection, and testing of complete assemblies and components of respirators described in §§ 11.200 and 11.201 of this Subpart.

(a) Complete gas mask	$1.100
(b) Complete chemical-cartridge respirator.	1.150
(c) Complete powered air-purifying respirator.	1.500
(d) Canister or cartridge only.	750

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VINYL CHLORIDE IN AIR

Physical and Chemical Analysis Branch

Analytical Method

In February 1974, shortly after NIOSH became aware of the carcinogenic hazard of vinyl chloride, a research program was implemented to develop sampling and analytical procedures for vinyl chloride. In response to an OSHA request and based upon a thorough literature search, NIOSH at that time recommended sampling vinyl chloride in gas collecting tubes and subsequent analysis by gas chromatography. While the glass tube is less susceptible to sampling errors, there are certain disadvantages which led NIOSH to investigate alternate methods of sampling. The result of our research effort has been a method in which vinyl chloride is collected on charcoal tubes, desorbed and determined by gas chromatography.

Enclosed is a copy of P&CAM No. 178

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Center for Disease Control
National Institute for Occupational Safety and Health

NIOSH CLASSIFICATION OF ANALYTICAL METHODS

Physical and Chemical Analysis Branch
Division of Laboratories and Criteria Development

Class A--Recommended---A method which has been fully evaluated and successfully collaboratively tested by a selected group of laboratories.

Class B--Accepted---A method which has been subjected to a thorough evaluation procedure in the NIOSH laboratory and found to be acceptable.

Class C--Tentative---A method which is in wide use and which has been adopted as a standard method or recommended by another Government agency or one of several professional societies such as ACGIH, AOAC, AIHA, ASTM or ISC.

Class D--Operational---A method in general use or approved by most professional industrial hygiene analysts but has not been thoroughly evaluated by NIOSH or any professional societies.

Class E--Proposed---A new, unproved or suggested method not previously used by industrial hygiene analysts but which gives promise of being suitable for the determination of a given substance.

December 17, 1973