PLAINTIFF'S EXHIBIT
SA-97

PROCEEDINGS of the

EIGHTH ANNUAL MEETING

of the

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

Chicago, Illinois—April 7-13, 1946

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

Officers and Members of Committees for 1944-1945

Chairman: MR. MANFRED BOWDITCH
Vice Chairman: DR. L. W. FOKER
Secretary-Treasurer: MR. J. J. BLOOMFIELD

Executive Committee

MR. MANFRED BOWDITCH, Chairman

DR. P. A. BREHM
DR. L. W. FOKER
MR. J. J. BLOOMFIELD
MR. R. M. BROWN
MR. P. J. HOUSER
DR. K. E. MARKUSON

Committee on Relationship of Industrial Hygiene Activities to Industry, Labor, Medical Profession, and Other Agencies

DR. M. H. KRONENBERG, Chairman
MR. MANFRED BOWDITCH
DR. K. E. MARKUSON

Committee on Threshold Limits

DR. W. G. FREDRICK, Chairman
MR. MANFRED BOWDITCH
PROFESSOR PHILIP DRINKER
DR. L. T. FAIRHALL
MR. A. E. DOOLEY

Committee on Standard Methods

DR. F. H. GOLDMAN, Chairman
MR. T. F. HATCH
DR. P. A. BREHM
MR. JOHN BUXELL
DR. H. H. SCHRENK
MR. A. N. SETTERLIND

Committee on Industrial Hygiene Education

MR. H. G. DYKTOR, Chairman
DR. C. A. NAU
MR. M. F. TRICE
MR. H. T. WALWORTH
DR. H. F. WILSON

Committee to Study Methods for Securing Effective and Uniform Reporting of Occupational Diseases and Other Illnesses Among Workers

DR. J. M. MCDONALD, Chairman
MR. MANFRED BOWDITCH
DR. J. P. DEERY
DR. W. M. GAFAFER

Committee on Development of Industrial Hygiene in Local Areas

DR. K. E. MARKUSON, Chairman
DR. A. V. NASATIR
MR. W. SCOTT JOHNSON
DR. C. A. NAU
DR. L. W. SPOLYAR

Committee on Industrial Hygiene Codes

MR. JOHN BUXELL, Chairman
MR. C. C. DILLS
MR. T. F. HATCH
MR. K. M. MORSE
MR. C. L. POOL
DR. W. H. SCHULZE
MR. W. N. WITHERIDGE

Committee to Study Industrial Hygiene Legislation

DR. A. S. GRAY, Chairman
MR. J. J. BLOOMFIELD
MR. R. W. FRANKS
MR. K. M. MORSE
MR. F. J. VINTINNER

Committee on Professional Qualifications of Industrial Hygiene Personnel

MR. MANFRED BOWDITCH, Chairman
DR. W. G. FREDRICK
DR. LEONARD GREENBURG
MR. R. T. PAGE
MR. R. J. MORTON

Committee on Appraisal and Reporting of Industrial Hygiene Activities

MR. J. J. BLOOMFIELD, Chairman
MR. H. G. DYKTOR
MR. R. T. HOMEWOOD
DR. W. H. SCHULZE
MR. JOSEPH WURAPTIC
MISS V. M. TRASKO
MISS J. Y. ZIANO

Committee on Industrial Ventilation

MR. W. N. WITHERIDGE, Chairman
MR. T. R. THOMAS
MR. J. B. SKINNER
MR. G. S. MICHAELSEN

taken by Dr. Goldman's Committee, but rather to present the need and suggest that the Conference consider the question of setting up these procedures on the same basis as Dr. Goldman is following with the analytical methods.

DR. GOLDMAN: Of course, the subject has been discussed in our special seminar, and I think it was indicated there that if the Conference was amenable, the Committee would undertake that work also.

CHAIRMAN BREHM: Any other discussion? The chair will entertain a motion for the acceptance of the report of the Committee on Standard Methods.

MR. FLUCK: I so move.

. . . The motion was seconded by Mr. Wilson, put to a vote, and carried . . .

CHAIRMAN BREHM: The motion is carried. Thank you, Dr. Goldman.

The last committee report we have this morning is that of the Committee on Threshold Limits by Dr. W. G. Fredrick, chairman of that Committee. Dr. Fredrick.

Report of the Sub Committee on Threshold Limits

DR. FREDRICK: Considerable difficulty attends the fixing of satisfactory values for maximal allowable concentrations of chemicals in respirable atmospheres because of the lack of sufficient toxicological data and the lack of a uniform definition of the maximal allowable concentration concept. One concept is that the M.A.C. value should represent as accurately as possible that concentration at which a worker exposed for a sufficient period of time will just escape physiological or organic injury and occupational disease. A second concept is that the M.A.C. should represent some fraction of that concentration which will injure the worker in order to allow a margin of safety in the design of protective equipment and guard against possible synergistic effects in the case of multiple exposures. A third concept is that the M.A.C. should perform the functions of the former concepts and in addition provide a work environment free of objectionable but non-injurious concentrations of smokes, dusts, irritants and odors. Obviously all of these concepts cannot be fulfilled with the establishment of a single value. M.A.C. values in use at the present time represent examples of all of these concepts.

The committee feels that the establishment of dual lists or a single definition of the M.A.C. is not possible at the present time.

An extensive list of M.A.C. values is presented to the conference for use during 1946, with the definite understanding that it be subject to annual revision. Values have been compiled from the list reported by this sub-committee at the 5th annual meeting of the N.C.G.I.H. in 1942, from the list published by Warren Cook in Industrial Medicine, vol. 14, p. 936, 1945, and from published values of the Z-37 committee of the American Standards Association.

It will be noted that many of these values have been in general use by members of the conference for several years.

Maximum Allowable Concentrations of Atmospheric Contaminants for 1946

(These values are subject to annual revision)

Data for these values have been obtained pr[imarily] from the report of this Committee in 1942, the compilation by Warren Cook, Industrial Medicine, vol. 14, p. 936, 1945 and the values established by the American Standards Association Committee.

Group I. Gases and Vapors

Substance	*M.A.C.*
Acetaldehyde	
Acetic acid	
Acetone	
Acrolein	
Acrylonitrile	
Ammonia	
Amyl acetate	
iso-Amyl alcohol	
Aniline	
Arsine	
Benzene (Benzol)	
Bromine	
1, 3-Butadiene	
n-Butanol	
2, Butanone	
n, Butyl acetate	
Butyl cellosolve	
Carbon dioxide	
Carbon disulfide	
Carbon monoxide	
Carbon tetrachloride	
Cellosolve	
Cellosolve acetate	
Chlorine	
2-Chlorobutadiene	
Chloroform	
1-Chloro-1-nitropropane	
Cyclo hexane	
Cyclo hexanol	
Cyclo hexanone	
Cyclo hexene	
o-Dichlorobenzene	
Dichloro difluoro methane	10.
1, 1-Dichloro ethane	
1, 2-Dichloro ethane	
1, 2-Dichloro ethylene	
Di chloro ethyl ether	
Di chloro methane	
Di chloromonofluoromethane	
1, 1-Dichloro-1-nitro ethane	
Dichlorotetrafluoro ethane	10
Dimethylaniline	
Dimethylsulfate	
Dioxane	
Ethyl acetate	
Ethyl alcohol	
Ethyl benzene	
Ethyl bromide	
Ethyl chloride	
Ethylene chlorhydrin	
Ethylene dichloride—see 1, 2-Dichloroethane	
Ethylene oxide	
Ethyl ether	
Ethyl formate	
Ethyl silicate	
Freon—see dichloro difluoro methane	
Formaldehyde	
Gasoline	
Heptane	

Hexane	500
Hydrogen chloride	10
Hydrogen cyanide	20
Hydrogen fluoride	3
Hydrogen selenide	0.1
Hydrogen sulfide	20
Isophorone	25
Mesityl oxide	50
Methanol	200
Methyl acetate	100
Methyl bromide	20
Methyl butanone	200
Methyl cellosolve	100
Methyl cellosolve acetate	100
Methyl chloride	200
Methylcyclohexane	500
Methyl cyclo hexanol	100
Methyl cyclo hexanone	100
Methyl ethyl ketone	200
Methyl formate	400
Methyl iso-butyl ketone	200
Mono chloro benzene	75
Mono fluoro trichloro methane	10,000
Monomitro toluene	5
Naphtha (coal tar)	100-200
Naphtha (petroleum)	500
Nitro benzene	5
Nitro ethane	200
Nitrogen oxides (other than nitrous oxide)	25
Nitroglycerine	0.5
Nitromethane	200
Octane	500
Ozone	1
Pentane	5000
Pentanone (methyl propanone)	200
Perchloroethylene—see tetrachloroethylene	
Phenol	1
Phosphine	1
Phosphorus trichloride	0.5
Iso-Propanol	400
Propyl acetate	200
Iso-Propyl ether	500
Pyridine	10
Stoddard solvent	500
Styrene monomer	400
Sulphur chloride	1
Sulphur dioxide	10
1, 1, 2, 2,-Tetra chloroethane	10
Tetra chloro ethylene	200
Toluene	200
Toluidine	5
Trichloroethylene	200
Turpentine	100
Vinyl chloride	500
Xylene	200

Group II. Toxic Dusts, Fumes and Mists	*Mg/M³*
Barium peroxide (as Ba)	0.5
Cadmium	0.1
Chloro di phenyl	1.0
Chromic acid and chromates (as Cr_2O_3)	0.1
Dinitro toluene	1.5
Fluorides (as F)	2.5
Iodine	0.1
Iron oxide fume	15
Lead	0.15
Magnesium oxide fume	15
Manganese	5
Sulphuric acid	0.5
Tellurium	0.01
Tetryl	1.5
Trichloronaphthalene	5
Trinitrotoluene	1.5
Zinc oxide fume	15

Group III. Mineral Dusts	*M.P.P.C.F.*
Alundum	50
Asbestos	5
Carborundum	50
Portland cement	50
Mica (below 5% free silica)	50
Nuisance (no free silica)	50
Silica—High (above 50% free SiO_2)	5
Silica—Medium (5-50% free SiO_2)	20
Silica—Low (below 5%)	50
Slate—(below 5% free SiO_2)	50
Soapstone (below 5% free SiO_2)	50
Talc	20
Total dust (below 5% free SiO_2)	50

Group IV. Radiations

Material or Radiation	*Radiant Energy*
Radon or thoron gas	10^{-9} Curies/M³
X or Gamma Radiation	0.1 Roentgen per 8 hr. day

CHAIRMAN BRENK: Thank you, Dr. Fredrick. Is there any comment? If not, the chair will entertain a motion regarding that report.

... It was moved and seconded that the report be accepted. The motion was put to a vote and carried ...

CHAIRMAN BRENK: The motion is carried. Thank you, Dr. Fredrick.

MR. BROWN: Mr. Chairman, in order to provide now for the consideration of the report of the Committee on Industrial Hygiene Codes, I move that that report now be taken from the table for consideration. The report was tabled pending presentation of the report of the Committee on Threshold Limits.

... Seconded by Mr. Wilson ...

CHAIRMAN BRENK: Is there any discussion?

DR. GREENBURG: I wonder if the limits set forth by the Committee on Codes were transmitted to that Committee from the Committee on Threshold Limits?

DR. FREDRICK: No, they were not. These committees were not in communication. I regret there seems to be some overlapping in the fields of activity.

MR. BLOOMFIELD: Mr. Chairman, I would like to make a suggestion for the sake of saving time and expediting the meeting, since we want to go into Executive Session soon to transact important business. I suggest that the Threshold Limits and Industrial Hygiene Code be omitted and we consider the report without these limits. Do you think that would be agreeable to Mr. Buzzell and your Committee? There is an overlapping and I am not sure that both report limits are in agreement. That is my suggestion.

MR. BROWN: I personally agree, Mr. Bloomfield, but in order to consider that, I think the report ought to be brought back to the Conference. It can't actually be considered until it is before the Conference. At that time that point should be taken up.

CHAIRMAN BRENK: The motion to bring off the table is now before the meeting.

(The report of the Committee on Standard Labeling Procedures was accepte and its adoption recommended. Dr. Sam Moskowitz asked to be relieved as Chai man of the Committee and that Dr. Harvey B. Elkins be appointed to that post.

(The motion, having been duly seconded, was put to a vote and carried.)

DR. MOSKOWITZ: Not a thing to say.

Report of the Committee on Threshold Limit Values

The plenary committee met twice during the year, once in Washington in November, 1962, and again in New York City in January, 1963, this time in a joint meeting with the Z-37 Committee of the American Standards Association. The purpose of the latter joint meeting was to resolve the undesirable situation which has arisen as a result of the change in the definition of the MAC's that resulted in ambiguous limits. It was the consensus at the meeting that in the future when the Z-37 Committee prepares a standard, both the long and short-term effects will be given consideration and any number or value given in the Z-37 standard should be properly defined to show whether it represents a time-weighted average or whether the value should be considered a ceiling valu Analogously, the Threshold Limits Committee will designate certain limits as ceiling limits where appropriate. This in effect resolves past difficulties.

The 1963 list will contain several revisions and additions, as well as changes in the preface. Additional appendices will be inserted, one having t do with the threshold limit values of mixtures. Continuing the recently established custom (1961) no new substances are added to the tentative list until it is backed by a documented justification. Similarly, no revisions will appe in the 1963 list until appropriate changes have been made in the justification to indicate the reason for the revision. Copies of the revised or new justifi tions are available on request. In due course they will be incorporated in a revised edition of the "Documentation of Threshold Limit Values."

REVISED OR ADDED RECOMMENDED VALUES FOR 1963

Substance	ppm*	Approx. Mg/M^3**
Acrolein	0.1	0.25
Allyl chloride	1	3
Ammonia	50	35
Amyl Acetate	100	525
C-Diglycidyl ether	0.5	2.8
C-Ethyl mercaptan	20	52
sec-Hexyl acetate	50	295
Methyl chloroform	350	1,900
C-Methyl mercaptan	20	40
Phosphine	0.3	0.4

* Parts of vapor or gas per million parts of air by volume at 25°C. and 760 mm. Hg pressure.
** Approximate milligrams of particulate per cubic meter of air.

REVISED OR ADDED TENTATIVE VALUES FOR 1963

Substance	ppm*	Approx. Mg/M³**
Calcium oxide	-	5
Camphor	-	2
Copper Fume	-	0.1
Dusts & Mists	-	1.0
Demeton R (Systox)	-	0.1
Endrin - Skin	-	0.1
Ethanolamine	3	6
Graphite	-	15 mppcf
Hafnium	-	0.5
Heptachlor	-	0.5
Methylamine	25	31
Methyl methacrylate	100	410
Mineral Wool (Fiberglas)	-	2
Naphthalene	10	50
β-Propiolactone	-	A5
Silver	-	0.05
Tantalum	-	5
1,1,1,2-Tetrachloro-1,2-difluoroethane	1,000	8,340
1,1,2,2-Tetrachloro-1,2-difluoroethane	500	4,170
Tetramethyl lead	-	0.075
Tin (inorganic compounds)	-	2
(organic compounds as Sn) - Skin	-	0.1

*Parts of vapor or gas per million parts of air by volume at 25°C. and 760 mm. Hg pressure.

**Approximate milligrams per cubic meter of air.

(Note: The complete list of 1963 TLV's is enclosed, as a separate publication, with the 1963 Transactions.)

Total Number of Changes:	Recommended Values	Tentative Values
* Revisions	10	4
** Additions	-	16
	10	20

The Threshold Limits Committee has developed a pamphlet entitled "Principles and Procedures for Developing Experimental Animal Data for Threshold Limit Values for Air." This pamphlet outlined suggestions for developing data acceptable to the Committee from which it may form a judgment on a threshold limit. It was veloped in response to a growing need by industry and toxicologic consultants.

The Chairman is to represent the Threshold Limits Committee of the ACGIH at the Second International Symposium on Permissible Limits for Air in Industry, in Paris, April 1 to 6.

Suggestions received by the Committee to broaden its scope of activities in the fields of odor and physical agents are being given consideration. An opinion by the Executive Committee on these broadened activities is requested.

I would like to continue with the committee as presently constituted. Harry Ashe, E. J. Baier, Allan Coleman, Harvey Elkins, Bernard Grabois, Wayland Hayes, Keith H. Jacobsen, Harold MacFarland, Wm. Reindollar, Russel Scovill, Ralph Smith, Mitchell Zavon, E. Mastromatteo, and with Harold MacFarland as consultant.

I would like to continue to serve as Chairman.

Budget, FY 1963

Travel and expenses for 2 to 4 individuals for 2 or 3 trips per year.	$ 1,000.00
Postage	50.00
Total Budget	$ 1,050.00

Respectfully submitted,

Dr. Herbert E. Stokinger, Chairman
Harry B. Ashe
E. J. Baier
Allan L. Coleman
Dr. Harvey B. Elkins
Bernard Grabois
Dr. Wayland J. Hayes, Jr.
Dr. Keith Jacobsen
Dr. Harold N. MacFarland
Dr. William F. Reindollar
Russel G. Scovill
Dr. Ralph G. Smith
Dr. Mitchell R. Zavon

MR. HOSEY: With the following recommendation by the Executive Committee, I move the adoption of this report.

(The report of the Committee on Threshold Limit Values was accepted with appreciation and its adoption recommended with the exception that paragraph two in the preamble to the TLV's be changed by inserting after the word "given" in the first line, the following: "for the year 1963-64." The Executive Committee recommends a maximum expenditure of $750.00 for Committee travel plus $50.00 for postage and suggests that meetings be held in the most economical location.)

(The motion, having been duly seconded, was put to a vote and carried.)

CHAIRMAN SCHALL: Dr. Stokinger, do you wish to make any remarks?

DR. STOKINGER: No.