



STATE OF WEST VIRGINIA
THE DEPARTMENT OF LABOR
CHARLESTON 25305

JOHN D. ROCKEFELLER IV
GOVERNOR

April 25, 1984

The Honorable A. James Manchin
Secretary of State
The Capitol
Charleston, West Virginia 25305.

Dear Mr. Manchin:

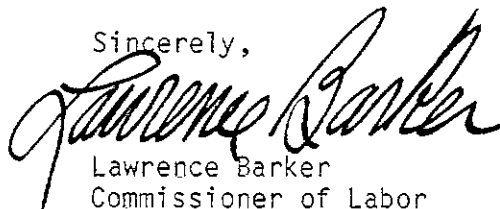
Enclosed herewith are three (3) copies of rules and regulations of the West Virginia Department of Labor designated Chapter 21, Article 3, Section 18 of the West Virginia Code One Thousand and Thirty One, as amended.

The 1984 regular session of the West Virginia Sixty-sixth Legislature passed Senate Bill #425, resultingly, signed by the Governor, authorizing the Department of Labor to promulgate legislative rules and regulations of the Hazardous Chemical Substances Act, West Virginia Code 21-3-18. These rules and regulations will become effective May 25, 1984.

Enclosed are three (3) copies of the promulgation history relating to the West Virginia Code 21-3-18.

Please stamp and return one copy of each of the above documents to Mr. Lawrence Barker, Commissioner, West Virginia Department of Labor.

Sincerely,


Lawrence Barker
Commissioner of Labor

LB/nb
enclosures

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE

THIS DATE April 25, 1984
Administrative Law, 718, 310



*process papers
Series 6
Effective May 25, 1984*

STATE OF WEST VIRGINIA
OFFICE OF THE SECRETARY OF STATE
CHARLESTON 25305

A. JAMES MANCHIN
SECRETARY OF STATE

STATE REGISTER FILING

I, Lawrence Barker, Commissioner,
Title or Position

Department of Labor, hereby submit to record in
Department or Division

the State Register on 8 1/2 x 11" paper two (2) copies of

- proposed rules and regulations concerning topics of material not covered by existing rules and regulations;
- proposed rules and regulations superseding rules and regulations already on file;
- notice of hearing;
- findings and determinations;
- rules and regulations; or
- other - specify LEGISLATIVE PROCEDURAL INTERPRETIVE RULE

This filing pertains to

Chapter 21
 Article 3
 Series 6
 Section 13
 Page No. 1-23

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE

THIS DATE 4-25-84
Administrative Law Division

- proposed rules and regulations are required to go to Legislative Rule Making Committee;
- proposed rules and regulations are excluded from Legislative Rule Making Committee;

April 25, 1984
Date Submitted

Lawrence Barker
Signature of Person Authorizing
this Filing



STATE OF WEST VIRGINIA
THE DEPARTMENT OF LABOR
CHARLESTON 25305

JOHN D. ROCKEFELLER IV
GOVERNOR

January 26, 1984

The Honorable A. James Manchin
Secretary of State
The Capitol
Charleston, West Virginia 25305

Dear Mr. Manchin:

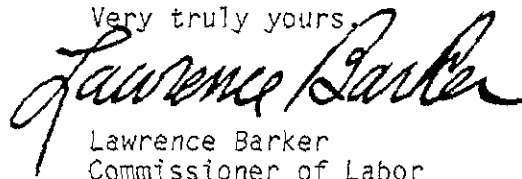
Re: West Virginia Code 21-3-18

Enclosed herewith are two copies of the final filing of the following:

1. State Register Filing
2. Findings and Determinations
3. Administrative Regulations adopted by the West Virginia Department of Labor
4. Fiscal Note pursuant to 29A-3-7(c) of the Code.

Please stamp and return one copy of each of these items to Lawrence Barker, Commissioner, West Virginia Department of Labor.

Very truly yours,


Lawrence Barker
Commissioner of Labor

LB/nb

enclosures

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE 1/26/84
Administrative Law/Division



STATE OF WEST VIRGINIA
 OFFICE OF THE SECRETARY OF STATE
 CHARLESTON 25305

A. JAMES MANCHIN
 SECRETARY OF STATE

STATE REGISTER FILING

I, Lawrence Barker, Commissioner,
 Title or Position

Department of Labor, hereby submit to record in
 Department or Division

the State Register on 8 1/2 x 11" paper two (2) copies of

- proposed rules and regulations concerning topics of material not covered by existing rules and regulations;
- proposed rules and regulations superseding rules and regulations already on file;
- notice of hearing;
- findings and determinations;
- rules and regulations; or
- other - specify (LEGISLATIVE PROCEDURAL INTERPRETIVE).

This filing pertains to

Chapter 21
 Article 3
 Series 6
 Section 18
 Page No. 1 - 22

FILED IN THE OFFICE OF
 A. JAMES MANCHIN
 SECRETARY OF STATE
 THIS DATE 1/26/84
 Administrative Law Division

- proposed rules and regulations are required to go to Legislative Rule Making Committee;
- proposed rules and regulations are excluded from Legislative Rule Making Committee;

1/26/84
 Date Submitted

Lawrence Barker
 Signature of Person Authorizing
 this Filing

FINAL FINDINGS AND DETERMINATIONS

The West Virginia Department of Labor originally published these findings and determinations on an emergency basis and filed them in the State Register on August 24, 1983. To comply with the August 3, 1983 decision of Judge Kidd of the United States District Court for the Southern District of West Virginia, and to comply with the Administrative Procedures Act, The Department in order to promulgate the final rules and regulations held public hearings to receive comments on the findings and determinations on October 31, 1983 and January 17, 1984. Much of the public comment did not revolve around these findings and determinations but rather were substantive comments on the rules. The Department can see no reason to change these findings and determinations; the Department believes they adequately address the issues.

The Department of Labor, therefore, adopts these as the final findings and determinations necessary to promulgate the rules and regulations.

- 1 -

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE 1/26/84
Administrative Law Division

FINDINGS AND DETERMINATIONS

1. The purpose of the Legislature in passing West Virginia Code 21-3-18 is to protect employees' health and safety when they are working with hazardous chemical substances.
2. This provision of law requires the Department of Labor to list those chemicals designated by the U. S. Secretary of Labor in Regulation 1910.1000, Subpart Z.
3. A chemical is placed on this list by the U.S. Secretary of Labor because of its existing or potential health problems to people.
4. Due to frequency of use, the West Virginia Commissioner of Labor determined to place 427 of the chemicals in Subpart Z on his list of regulated chemicals as a determination by the U. S. Secretary of Labor to place these chemicals on the Subpart Z list is a prima facie determination that they are or may be hazardous to workers.
5. The Commissioner of Labor determined that legislative intent was designed to cover any employer of ten or more employees using or producing any such listed hazardous chemical substance or material shall conspicuously post a warning notice in the work area where any such substance or material is used.
6. The following is a summarization of the decision of the Honorable William M. Kidd, United States District Judge.

Conclusions

Accordingly, the Court finds that:

- (1) The title of W. Va. Code § 21-3-18 is not defective because of failure to inform of possible criminal penalties;
- (2) the Act is not an unconstitutional delegation of legislative authority to the state's commissioner of labor except as it purports to adopt or permit consideration of future regulatory amendments or proposed amendments to 29 C.F.R. 1910.1000, Subpart Z;
- (3) the conduct regulated by W. Va. Code § 21-3-18 has not been preempted by the federal Occupational Safety & Health Act of 1970;
- (4) the Act is not void for vagueness under the Due Process Clause of the Fourteenth Amendment;
- (5) the Act does not deny plaintiff equal protection under the law, and
- (6) the proposed regulations promulgated pursuant to W. Va. Code § 21-3-18 are void for failure of the agency to comply with W. Va. Code §§ 29A-3-5 and -6.

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE 1/26/84
Administrative Law Division

7. Attached is the decision of the United States Court of Appeals for Fourth Circuit Court declining to disapprove Judge William M. Kidd's decision, West Virginia Manufacturers Assoc., a nonprofit West Virginia corporation, Plaintiff, and United Steelworkers of America, AFL-CIO-CIC and Paul Rusen, Director District 23, United Steelworkers of America, AFL-CIO-CIC, Plaintiff-Intervenor, versus State of West Virginia and Lawrence Barker, Commissioner of Labor of the State of West Virginia, Defendants, Civil Action No. 81-2477.
8. Prior to, during and after the previous public hearing, the Commissioner of Labor received a number of comments on the proposed regulations from a variety of people. More significant comments are summarized briefly and the Commissioner's response to them is provided herein.
 - A. In our opinion, the state program simply duplicates many of the federal requirements, thereby serving no beneficial purpose and merely increasing the compliance and costs to industry. We believe that the federal Occupational Safety and Health Administration, while not without its flaws, has already fully and adequately regulated the areas of employee safety and health on a national level.

As the litigation in this case has demonstrated, the state program is not duplicative of federal efforts and provides a significantly greater protection to workers than does the federal regulation.

- B. The regulations omit any specific requirements as to size, location and legibility of the warning notices required under the law. We recommend that the Department of Labor follow the standards established by OSHA for the posting of information.

A regulation establishing specific requirements for location, size and legibility of warning notices is not desirable as the variety of work places precludes a single uniform standard.

- C. As currently proposed, list of substances and symptoms is deficient in two primary respects. First, the list does not include a number of substances which are known, through NIOSH research and OSHA regulations, to be toxic. Second, the listing of symptoms is inadequate: long term effects, including cancer, are frequently not included; a number of substances lack a listing of symptoms at all; symptoms are listed in medical and not lay terms, and should be indicated in both. Posting of the list: the regulations should be specific as to size, height and location of posting. Enforcement: the regulations fail to establish a procedure for enforcement. It is essential that an effective enforcement procedure be developed, including how complaints regarding noncompliance are to be processed, investigated and violators prosecuted.

- D. Ashland's review of the proposed "Listing of Hazardous Chemical Substances;" initially reveals a major discrepancy: The Department of Labor clearly derived the proposed listing from sources other than those authorized by West Virginia law. Ashland respectfully requests the Department of Labor to ensure that its cited source of chemical substances, 29 CFR 1910.1000 is consistent with the list it proposes in Section 18.

Carbon black is listed as a substance under Subpart Z and to date insufficient information has been presented to the Commissioner of Labor for him to make a determination to delist this substance.

STATE OF WEST VIRGINIA

ADMINISTRATIVE REGULATIONS
ADOPTED BY THE
WEST VIRGINIA DEPARTMENT OF LABOR

PURSUANT TO THE WEST VIRGINIA SAFETY AND WELFARE OF EMPLOYEES
(CHAPTER 21, ARTICLE 3, SECTION 18 OF THE WEST VIRGINIA CODE)

ADOPTED November 2, 1981

FILED January 26, 1984

In effect upon passage by the State Legislators and filing
in the Office of the Secretary of State

SUBJECT: Legislative Rules and Regulations to establish and maintain a list of chemical substances and materials which have been determined or are suspected to be hazardous or toxic to the health of employees who may be exposed to them in the course of employment.

SECTION I - HAZARDOUS CHEMICAL SUBSTANCES:

- 1.01 The following list has been selected in accordance with 29 Code of Federal Register 1910.1000, Subpart Z.
- 1.02(a) List of hazardous chemical substances and materials (pages 1 through 22)
- 1.03(b) The preceding list will be updated, at least annually, giving due consideration to any changes made or proposed by the Secretary of Labor of the United States.
- 1.04(c) Warning notice posted in the work area shall be printed or typewritten in letters of sufficient size and contrast as to be readily visible and legible. Such warning notice shall include common symptoms of overexposure.
- 1.05(d) Any producer or user aggrieved by the inclusion or exclusion of any hazardous chemical substance on the list may petition the Commissioner of the State Department of Labor for a possible revision or revisions of said list. The expense of any such determination, if the Commissioner so decides, shall be borne by the party seeking said determination, and the burden of proof shall also be on said party.

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE 1/26/84
Administrative Law Division

FISCAL NOTE
(Submit 4 copies)

HD NO. _____ DRAFT NO. _____

EXPLAIN IN A CLEAR, CONCISE MANNER WHAT EFFECT THIS MEASURE WILL HAVE ON THE COSTS AND REVENUES OF STATE GOVERNMENT.

FISCAL NOTE TO The Honorable A. James Manchin, Secretary of State

(GIVE BILL OR RESOLUTION NUMBER WHEN AVAILABLE. OTHERWISE IDENTIFY BY SUBJECT, CODE REFERENCE, ETC.)

Fiscal note pursuant to 29A-3-7(c) of the Code.

Hazardous Chemical Substances Act
Article 3, Chapter 21, Section 18 of the Code.

- 3. --Occupational Safety Consultants
 (field).....\$ 35,280.00
- 1. --Industrial Hygienist.....\$ 14,724.00
- Current Expenses.....\$ 29,810.00

29A-3-7(c) Objective of Rules and Regulations

The cost required to administer adding new section 18, to Article 3, Chapter 21 of the West Virginia Code.

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE

THIS DATE 1/26/84
Administrative Law Division

DATE 1/26/84

AGENCY
LABOR

Authorized Representative
Lawrence Barker

WEST VIRGINIA DEPARTMENT OF LABOR

LISTING OF HAZARDOUS SUBSTANCES

Kenneth R. DuBois, Director

Safety and Boiler Division

Lawrence Barker

Commissioner of Labor

FILED IN THE OFFICE OF
A. JAMES MANCHIN
SECRETARY OF STATE
THIS DATE 1/26/84
Administrative Law Division

NOTES:

An employee's exposure to any substance listed in Table 1, Table 2 or Table 3 shall be limited in accordance with the requirements of the following:

A. Table 1:

1. Substances with names preceded by "C" - ceiling values. An employee's exposure to any substance in Table 1, the name of which is preceded by a "C", shall at no time exceed the ceiling value given for that substance in the table.
2. Other Substances - 8-hour time weighted averages. An employee's exposure to any substance in Table 1, the name of which is not preceded by "C", in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average given for that substance in the table.

B. Table 2:

1. 8-hour time weighted averages. An employee's exposure to any substance listed in Table 2, in any 8-hour work shift of a 40-hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in Table 2.
2. Acceptable ceiling concentrations. An employee's exposure to a substance listed in Table 2 shall not exceed at any time during an 8-hour shift the acceptable ceiling concentration limit given for the substance in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under "acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift".

C. Table 3:

An employee's exposure to any substance listed in Table 3, in any 8-hour work shift of a 40 hour work week, shall not exceed the 8-hour time weighted average limit given for that substance in Table 3.

D. Computation Formulae:

1. (a) The cumulative exposure for an 8-hour work shift shall be computed as follows:

$$E = \frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{8}$$

where:

E is the equivalent exposure for the work shift.
C is the concentration during any period of time.
T where the concentration remains constant
T is the duration in hours of exposure at the concentration C.

The value of E shall not exceed the 8-hour time weighted average limit in Table 1, 2 or 3 for the substance involved.

(b) To illustrate the formula prescribed, note that isoamyl acetate has an 8-hour time weighted average limit of 100 p.p.m. (Table 1). Assume that an employee is subject to the following exposure:

Two hours exposure at 150 p.p.m.
 Two hours exposure at 75 p.p.m.
 Four hours exposure at 50 p.p.m.

Substituting this information in the formula, we have

$$\frac{2 \times 150 + 2 \times 75 + 4 \times 50}{8} = 81.25 \text{ p.p.m.}$$

Since 81.25 p.p.m. is less than 100 p.p.m., the 8-hour time weighted average limit, the exposure is acceptable.

2. (a) In case of a mixture of air contaminants an employer shall compute the equivalent exposure as follows:

$$E_w = \frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n}$$

where:

E_w is the equivalent exposure for the mixture.

C is the concentration of a particular contaminant.

L is the exposure limit for the contaminant, from Table 1, 2 or 3.

The value of E_w shall not exceed the unity (1).

(b) To illustrate the formula prescribed in (a), consider the following exposures:

Substance	Actual Concentration Of 8-hour Exposure	8-hour Time Weighted Average Exposure Limit
Acetone (Table 1)	500 p.p.m.	1,000 p.p.m.
2-Butanone (Table 1)	45 p.p.m.	200 p.p.m.
Toluene (Table 2)	40 p.p.m.	200 p.p.m.

Substituting in the formula, we have:

$$E_w = \frac{500}{1000} + \frac{45}{200} + \frac{40}{200}$$

$$E_w = 0.500 + 0.225 + 0.200$$

$$E_w = 0.925$$

Since E_w is less than unity (1), the exposure combination is within acceptable limits.

TABLE 1
LISTING OF HAZARDOUS SUBSTANCES

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM -/	MG/M ³ -/	
75070	Acetaldehyde	200	300	Marked irritation eye, nose, throat, skin
64197	Acetic acid	10	25	Marked irritation eye, nose, throat, skin
109247	Acetic anhydride	5	20	Marked irritation eye, nose, throat, skin
67641	Acetone	1,000	2,400	Mild irritation eye, nose, throat/narcosis
75058	Acetonitrile	40	70	Mild irritation eye, nose, throat/acute toxicity (Cyanosis)
540590	Acetylene dichloride	(see 1, 2 - Dichloroethylene)		
79276	Acetylene tetrabromide	1	14	Cumulative liver and Lung Damage
107028	Acrolein	0.1	0.25	Marked irritation eye, nose, throat, lungs, skin
75061	Acrylamide - Skin	-	0.3	Polynuropathy, Dermatitis/Skin Eye Irritation
339062	Aldrin - Skin	-	0.25	Suspect carcinogen/cumulative liver damage
107136	Allyl alcohol - Skin	2	5	Eye damage/arked irritation eye, nose, throat, bronchi, skin
107051	Allyl chloride	1	3	Liver damage/arked irritation eye, nose, throat
106923	C Allyl glycidyl ether (AGE)	10	45	Contact skin allergy/arked irritation eye, nose, throat, bronchi, skin
2179591	Allyl propyl disulfide	2	12	Marked irritation eye, nose, throat
141435	2-Aminoethanol	(see Ethanolamine)		
504290	2-Antiopyridine	0.5	2	CNS stimulation/headache/increased blood pressure
766447	Ammonia	50	35	Marked irritation eye, nose, throat, bronchi, lungs
7773060	Ammonium sulfate (Ammate)	-	15	Mild irritation eye
628637	n-Amyl acetate	100	525	Moderate irritation eye, nose, throat
628380	sec-Amyl acetate	125	650	Moderate irritation eye, nose, throat
62533	Aniline - Skin	5	19	Methemoglobinemia acute toxic effects
29151524	Anisidine (o, p-isomers) - Skin	-	0.5	Methemoglobinemia/cumulative toxicity
7440360	Antimony and compounds (as Sb)	-	0.5	Cumulative heart damage/suspect carcinogen

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^a /	Mg/M ³ ^b	
85384	ANTU (alpha naphthyl thiourea)	-	0.3	Cumulative endocrine (thyroid and adrenal) damage
7784421	Arsine	0.05	0.2	Acute systemic toxicity
86560	Azinosphos-methyl - Skin	-	0.2	Cholinesterase inhibition
7440393	Barium (soluble compounds)	-	0.5	Cumulative heart, lung, and brain damage
106514	p-Benzoquinone	(see Quinone)		
94380	Benzoyl peroxide	-	5	Moderate irritation eye, nose, throat, skin
100447	Benzyl chloride	1	5	Suspect carcinogen/marked irritation eye, nose, throat, skin/lung edema
92524	Biphenyl	(see Diphenyl)		
1303862	Boron oxide	-	15	Mild irritation eye, nose, throat, skin
7637072	C Boron trifluoride	1	3	Acute and chronic lung irritation (Pneumonia)
7726956	Bromine	0.1	0.7	Marked irritation eye, nose, throat, bronch, lungs
75252	Bromoforn - Skin	0.5	5	Marked irritation eye, nose, throat/cumulative liver damage
106990	Butadiene (1, 3-butadiene)	1,000	2,200	Mild irritation eye, nose, throat
109795	Butanethiol	(see Butyl mercaptan)		
78933	2-Butanone	200	590	Moderate irritation eye, nose, throat/narcosis
111762	2-Butoxy ethanol (Butyl Cellosolve)- Skin	50	240	Anemia/mild irritation eye, nose, throat
123864	Butyl acetate (n-butyl acetate)	150	710	Moderate irritation eye, nose, throat
105464	sec-Butyl acetate	200	950	Moderate irritation eye, nose, throat
540885	tert-Butyl acetate	200	950	Moderate irritation eye, nose, throat
71363	Butyl alcohol	100	300	Moderate irritation eye, nose, throat/hearing loss
78922	sec-Butyl alcohol	150	450	Mild irritation eye, nose, throat
75650	tert-Butyl alcohol	100	300	Moderate irritation eye, nose, throat/narcosis
109739	C Butylamine - Skin	5	15	Suspect carcinogen/marked irritation eye, nose, throat, lungs, skin

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		ppm \pm	Mg/M ³ \pm	
118951	C tert Butyl chromate (as CrO ₃) - Skin	-	0.1	Suspect carcinogen/marked irritation eye, nose, throat, skin
2426086	n-Butyl glycidyl ether (BGE)	50	270	Suspect mutagen/mild irritation eye, nose, throat, skin
109795	Butyl mercaptan	10	35	Moderate irritation eye, nose, throat/odor
92511	p-tert-Butyltoluene	10	60	CNS damage/cumulative liver, kidney damage
1305788	Calcium oxide	-	5	Marked irritation eye, nose, throat/skin
76222	Camphor	-	2	Moderate irritation eye, nose, throat/acute toxicity
63252	Carbaryl (Sevin [®])	-	5	Cholinesterase inhibition/teratogen
7440440	Carbon black	-	3.5	Suspect carcinogen/cumulative heart damage
124389	Carbon dioxide	5,000	9,000	Simple asphyxiation
630090	Carbon monoxide	50	55	Chemical asoxia, asphyxiation
57749	Chlordane - Skin	-	0.5	Cumulative liver damage/suspect carcinogen
MX8001352	Chlorinated camphene - Skin	-	0.5	Cumulative liver damage
55720995	Chlorinated diphenyl oxide	-	0.5	Cumulative liver damage/dermatitis
7782505	C Chlorine	1	3	Lung injury/marked irritation eye, nose, throat bronchi
10049044	Chlorine dioxide	0.1	0.3	Lung injury/marked irritation eye, nose, throat, bronchi
7790912	C Chlorine trifluoride	0.1	0.4	Marked irritation eye, nose, throat, bronchi, lungs
107200	C Chloroacetaldehyde	1	3	Marked irritation eye, nose, throat, lungs, skin
1341248	α -Chloroacetophenone (phenacyl-chloride)	0.05	0.3	Marked irritation eye, nose, throat, bronchi, lungs skin
106907	Chlorobenzene (mchloro-benzene)	75	350	Cumulative systemic toxicity/narcosis
018270616	o-Chlorobenzylidene malononitrile (OCBM)	0.05	0.4	Marked irritation eye, nose, throat, skin
74975	Chlorobromomethane	200	1,050	Cumulative liver damage/narcosis
126998	2-Chloro-1,3-butadiene	(see Chloroprene)		
53469219	Chlorodiphenyl (42 percent Chlorine) - Skin	-	1	Suspect carcinogen/chloracene/cumulative liver damage

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ¹	Mg/M ³ ²	
11697691	Chlorodiphenyl (54 percent Chlorine) - Skin	-	0.5	Suspect carcinogen/chloracne/cumulative liver damage
106898	1-Chloro-2,3-epoxy propane	(see Epichlorohydrin)		
107073	2-Chloroethanol	(see Ethylene chlorohydrin)		
75014	Chloroethylene	(see Vinyl chloride)		
67663	C Chloroform (trichloromethane)	50	240	Suspect carcinogen/cumulative liver and kidney damage/narcosis
600259	1-Chloro-1-nitropropane	20	100	Moderate irritation eye, nose, throat, skin
76062	Chloropicrin	0.1	0.7	Marked irritation eye, nose, throat, bronchi, lungs, skin
126998	Chloroprene (2-chloro-1,3-butadiene) - Skin	25	90	Reproductive hazard/systemic toxicity/suspect mutagen
	Chromium, sol. chromic, chromous salts as Cr	-	0.5	Cumulative lung damage/dermatitis
7440473	Metal and insol. salts	-	1	Suspect carcinogen/cumulative lung damage/dermatitis
MX8007452	Coal tar pitch volatiles (benzene soluble fraction) anthracene, BaP, phenanthrene, acridine, chrysene, pyrene	-	0.2	Suspect carcinogen/cumulative lung changes
7440484	Cobalt, metal fume and dust	-	0.1	Asthma/cumulative lung changes/dermatitis
7440508	Copper fume	-	0.1	Moderate irritation eye, nose, throat, lung
7440508	Dusts and Mists	-	1	Mild irritation eye, nose, throat, skin
N/A	Cotton dust (raw)	-	1	Asthma/cumulative lung damage (Bysinosis)
136787	Crag [®] herbicide	-	15	Cumulative liver damage
93516	Cresol (all isomers) - Skin	5	22	Marked irritation eye, skin/acute toxicity (CNS) liver and kidney damage
123739	Crotonaldehyde	2	6	Marked irritation eye, nose, throat, lungs
92828	Cumene - Skin	50	245	Narcosis/moderate irritation eye, skin
57125	Cyanide (as CN) - Skin	-	5	Marked irritation skin, eye, nose, throat
110827	Cyclohexane	300	1,050	Moderate irritation eye, nose, throat
108930	Cyclohexanol	50	200	Mild irritation nose, throat/cumulative liver and kidney damage

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM \approx /	Mg/M ³ \approx /	
108951	Cyclohexanone	50	200	Moderate irritation eye, nose, throat/cumulative liver and kidney damage
110838	Cyclohexene	300	1,015	Moderate irritation eye, nose, throat/cumulative systemic toxicity
542927	Cyclopentadiene	75	200	Moderate irritation eye, nose, throat
94757	2,4-D	-	10	Suspect teratogen
50293	DDT - Skin	-	1	Cumulative toxicity, CNS suspect carcinogen and mutagen
62737	DDVP - Skin	-	1	Cholinesterase inhibition
17702419	Decaborane - Skin	0.05	0.3	Acute and chronic CNS toxicity
MX3000973	Demeton (B) - Skin	-	0.1	Cholinesterase inhibition/suspect teratogen
123422	Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240	Moderate irritation eye, nose, throat/cumulative kidney damage
107153	1,2-diaminoethane	(see Ethylenediamine)		
334883	Diazomethane	0.2	0.4	Suspect carcinogen/acute lung damage/marked irritation eye, nose, throat
1304003	Diborane	0.1	0.1	Acute respiratory damage, irritation/nervous system damage
	Dibutyl Phosphates	1	5	Mild irritation eye, nose, throat, lungs
84742	Dibutylphthalate	-	5	Apparent low toxicity, suspect teratogen
95501	C-0-Dichlorobenzene	50	300	Marked Irritation eye, nose, throat/liver damage
106567	p-Dichlorobenzene	75	450	Cumulative systemic toxicity/cataracts
75718	Dichlorodifluoromethane	1,000	4,950	Dizziness; tremors, unconscious; cardiac arrhythmias, cardiac arrest
118525	1,3-Dichloro-5,5-dimethylhydantoin	-	0.2	Mild irritation eye, nose, throat, lungs
75343	1,1-Dichloroethane	100	400	Cumulative liver damage
107062	1,2-Dichloroethylene	200	790	Narcosis/CNS effects
111444	C Dichloroethyl ether - Skin	15	90	Marked irritation eye, nose, throat, lungs/suspect carcinogen/lung edema
75092	Dichloromethane	(see Methylenechloride)		

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		ppm _v	Mg/m ³	
75434	Dichloromono fluoromethane	1,000	4,260	Cumulative liver damage
594729	C 1,1-Dichloro-1-nitroethane	10	60	Acute systemic toxicity-lungs, heart, liver, kidneys
78875	1,2-Dichloropropane	(see Propylenedichloride)		
374072	Dichlorotetrafluoroethane	1,000	7,000	Respiratory irritation, asphyxia; cardiac arrhythmias, cardiac arrest
60571	Dieldrin - Skin	-	0.25	Suspect carcinogen/cumulative liver damage
109897	Diethylamine	25	75	Marked irritation eye, nose, throat, lungs, skin/ myocardial degeneration
100378	Diethylamino ethanol - Skin	10	50	Marked irritation eye, nose, throat
60297	Diethyl ether	(see Ethyl ether)		
75616	Difluorodibromomethane	100	860	Respiratory Irritation/cumulative liver and CNS damage
2238075	C Diglycidyl ether (DGE)	0.5	2.8	Marked irritation eye, nose, throat, lungs, skin/ cumulative systemic toxicity/suspect mutagen
123319	Dihydroxybenzene	(see Hydroquinone)		
108238	Diisobutyl ketone	50	290	Mild irritation eye, nose, throat/narcosis
108189	Diisopropylamine - Skin	5	20	CNS effects/moderate irritation eye, nose, throat, lungs
109875	Dimethoxymethane	(see Methylal)		
127195	Dimethyl acetamide - Skin	10	35	Cumulative liver damage/suspect teratogen
124403	Dimethylamino	10	18	Marked irritation eye, nose, throat, bronchi, lung, skin/ cumulative liver, testicular damage
1300738	Dimethylaminobenzene	(see Xylidene)		
1300738	Dimethylaniline (N-dimethylaniline) - Skin	5	25	Methemoglobinemia CNS effects
1330207	Dimethylbenzene	(see Xylene)		
300765	Dimethyl 1,2-dibromo-2,2-dichloroethyl phosphate, (Dibrom)	-	3	Cholinesterase inhibition
63122	Dimethylformamide - Skin	10	30	Cumulative liver damage/CNS effects
109838	2,6-Dimethylheptanone	(see Diisobutyl ketone)		
57147	1,1-Dimethylhydrazine - Skin	0.5	1	Suspect carcinogen/CNS effects/anemia

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM _a /	MG/M ³ _a /	
131113	Dimethylphthalate	-	5	Suspect teratogen/mild irritation nose, throat
77731	Dimethylsulfate - Skin	1	5	Suspect carcinogen/acute eye and lung effects
98850	Dinitrobenzene (all isomers) - Skin	-	1	Blood disturbances/liver, kidney damage
534521	Dinitro-o-cresol - Skin	-	0.2	Cumulative systemic (metabolic) toxin
121142	Dinitrotoluene - Skin	-	1.5	Methemoglobinemia/anemia/liver damage
123911	Dioxane (Diethylene dioxide) - Skin	100	360	Suspect carcinogen/cumulative liver, kidney damage
92524	Diphenyl	0.2	1	Moderate irritation eye, nose, throat, bronchi, lungs
10031751	Diphenylmethane diisocyanate	[see Methylene bisphenyl isocyanate (MDI)]		
1321217	Dipropylene glycol methyl ether - Skin	100	600	Moderate irritation eye
117917	Di-sec. octyl phthalate (DI-2-ethylhexylphthalate)	-	5	Mild irritation eye, nose, throat
72208	Endrin - Skin	-	0.1	Acute toxicity
106898	Epichlorhydrin - Skin	5	19	Marked skin irritation, sensitization/suspect carcinogen and mutagen/kidney and liver damage
2104645	EPN - Skin	-	0.5	Cholinesterase inhibition
75569	1,2-Epoxypropane	(see Propyleneoxide)		
556525	2,3-Epoxy-1-propanol	(see Glycidol)		
75081	Ethaneethiol	(see Ethylmercaptan)		
141435	Ethanolamine	3	6	Marked irritation skin/cumulative liver, lung and kidney damage
110805	2-Ethoxyethanol - Skin	200	740	Moderate irritation eye, nose/cumulative blood disturbances
111159	2-Ethoxyethylacetate (Collosolve acetate) - Skin	100	510	Cumulative liver, kidney damage/mild irritant eye, nose, throat
141706	Ethyl acetate	400	1,400	Mild irritation eye, nose, throat, lungs/odor
140805	Ethyl acrylate - Skin	25	100	Marked irritation eye, nose, throat, lungs/lung edema
64175	Ethyl alcohol (ethanol)	1,000	1,900	Mild irritation eye, nose, throat/narcosis

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^{a/}	MG/M ³ _{2/}	
75097	Ethylamine	10	18	Marked irritation eye, nose, throat, lungs/corneal injury
541855	Ethyl sec-amyI Ketone (5-methyl-3-heptanone)	25	130	Moderate irritation eye, nose, throat
100414	Ethyl benzene	100	435	Moderate irritation eye, nose, throat
74964	Ethyl bromide	200	890	Narcosis/cumulative liver, kidney and heart damage
105354	Ethyl butyl ketone (3-Heptanone)	50	230	Mild irritation eye, nose, throat/narcosis
75003	Ethyl chloride	1,000	2,000	Narcosis
60297	Ethyl ether	400	1,200	Narcosis/mild irritation eye, nose, throat
109944	Ethyl formate	100	300	Mild irritation eye, nose, throat/narcosis
75081	C Ethyl mercaptan	10	25	Odor/acute systemic toxicity
78104	Ethyl silicate	100	850	Cumulative kidney damage mild irritation eye, nose, throat
107073	Ethylene chlorohydrin - Skin	5	16	Acute toxicity (local and systemic)
107153	Ethylenediamine	10	25	Moderate irritation eye, nose, throat, skin/contact dermatitis asthma
628566	C Ethylene glycol dinitrate and/or Nitroglycerin - Skin	1/0.2	1	Cumulative blood pressure lowering/headache
110456	Ethylene glycol monomethyl ether acetate	(see Methyl cellosolve acetate)		
151564	Ethylene imine - Skin	0.5	1	Cancer
75218	Ethylene oxide	50	90	Moderate irritation eye, nose, throat/cumulative lung, liver and kidney damage/suspect mutagen
75343	Ethylidene chloride	(see 1,1-Dichloroethane)		
100743	N-Ethylmorpholine - Skin	20	94	Acute CNS effects/moderate irritation eye, nose, throat
301053	Ferbam	-	15	Mild irritation eye, nose, upper respiratory tract/suspect carcinogen
1336169	Ferrovandium dust	-	1	Mild irritation upper respiratory tract
7681494	Flouride (as F)	-	2.5	Marked irritation eye, nose, throat/cumulative bone damage

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM $\frac{1}{1}$	MG/M ³ $\frac{1}{1}$	
7722414	Fluorine	0.1	0.2	Lung edema/kidney damage
75694	Fluorotrichloromethane	1,000	5,600	Acute CNS effects
64186	Formic acid	5	9	Marked irritation eye, nose, throat, lungs
98011	Furfural - Skin	5	20	Moderate irritation eye, nose, throat
52000	Furfuryl alcohol	50	200	Moderate irritation eye, lungs/narcosis
556525	Glycidol (2,3-Epoxy 1-propanol)	50	150	Moderate irritation eye, nose, throat, skin CNS effects
109364	Glycol monopropyl ether	(see 2-Ethoxyethanol)		
86500	Guthion (®)	(see Axiinphosnathyl)		
7940586	Hafnium	-	0.5	Cumulative liver damage
76498	Heptachlor - Skin	-	0.5	Suspect carcinogen
142825	Heptane (n-heptane)	500	2,000	Moderate irritation eye, nose, lungs/CNS effects/narcosis
67721	Hexachloroethane - Skin	1	10	Cumulative organ damage/CNS effects
1335871	Hexachloronaphthalene - Skin	-	0.2	Cumulative liver damage/chloracne
110543	Hexane	500	1,800	Polynuropathy/narcosis
591786	2-Hexanone	100	410	Polynuropathy/moderate irritation eye, nose, throat
109101	Hexone (Methyl isobutyl ketone)	100	410	Moderate irritation eye, nose, throat
142927	sec-Hexyl acetate	50	300	Mild irritation eye, nose, throat
302012	Hydrazine	1	1.3	Marked irritation respiratory tract/cumulative organ damage/suspect carcinogen
10035106	Hydrogen bromide	3	10	Marked irritation nose, throat/acute lung damage
7647010	C Hydrogen chloride	5	7	Marked irritation eye, nose, throat/lung edema
74908	Hydrogen cyanide - Skin	10	11	Acute and cumulative systemic toxicity (cyanosis)
7722841	Hydrogen peroxide (90%)	1	1.4	Marked irritation eye, nose, throat, skin/acute lung damage/explosive
7793075	Hydrogen selenide	0.05	0.2	Acute lung damage/CNS effects/liver damage
123319	Hydroquinone	-	2	Cumulative corneal damage/CNS effects

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM _v	MGM ³ /M ³	
10633660	C Iodine	0.1	1	Marked irritation eye, nose, throat/lung edema
N/A	Iron oxide fume	-	10	Lung changes (Siderosis)
123922	Isoamyl acetate	100	525	Moderate irritation upper respiratory tract
123513	Isoamyl alcohol	100	360	Mild irritation eye, nose, throat/narcosis/suspect carcinogen
110190	Isobutyl acetate	150	700	Moderate irritation eye, nose, throat
72831	Isobutyl alcohol	100	300	Moderate irritation eye, nose, throat/suspect carcinogen
76591	Isophorone	25	140	Marked irritation eye, nose, throat/chronic CNS effects
103214	Isopropyl acetate	250	950	Mild irritation eye, nose, throat
67630	Isopropyl alcohol	400	990	Mild irritation eye, nose, throat/narcosis
75310	Isopropylamine	5	12	Marked irritation eye, nose, throat, lung
109203	Isopropylether	500	2,100	Mild irritation eye, nose, throat
4916142	Isopropyl glycidyl ether (IGE)	50	240	Moderate irritation eye, nose, throat, skin/skin sensitization
483514	Ketene	0.5	0.9	Marked irritation, edema-lungs
58859	Lindane - Skin	-	0.5	Cumulative CNS and liver damage/suspect carcinogen
758678	Lithium hydride	-	0.025	Marked irritation eye, nose, throat, skin/lung damage/CNS effects
1538096	L.P.G. (liquefied petroleum gas)	1,000	1,800	Explosive/asphyxiant/narcosis
1309484	Magnesium oxide fume	-	15	Lung effects (fume fever)
121755	Malathion - Skin	-	15	Cholinesterase inhibition
108316	Malic anhydride	0.25	1	Marked irritation eye, nose, throat, lungs (edema), skin/asthma
7439965	Manganese	-	5	Cumulative CNS damage/lung damage
141797	Mesityl oxide	25	160	Mild irritation eye, nose, throat
74931	Methanethiol	(see Methyl mercaptan)		
72435	Methoxychlor	-	15	Cumulative kidney damage
105684	2-Methoxyethanol	(see Methyl cellosolve)		

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^{a/}	Mg/M ³ ^{a/}	
79209	Methyl acetate	200	610	Mild irritation eye, nose, throat, lungs/narcosis/CNS effects
74997	Methyl acetylene (propyne)	1,000	1,650	Explosive/narcosis
96333	Methyl acetylene-propadiene mixture (MAPP)	1,000	1,800	Flammable
74834	Methyl acrylate - Skin	10	35	Marked irritation eye, nose, throat, skin/acute lung damage/cumulative lung, liver and kidney damage
109875	Methylal (dimethoxyethane)	1,000	3,100	Cumulative systemic toxicity
67561	Methyl alcohol (methanol)	200	260	Narcosis/cumulative CNS effects/mild irritation eye, nose, throat
74895	Methylamine	10	12	Marked irritation eye, nose, throat, skin
105306	Methyl amyl alcohol	(see Methyl isobutyl carbinol)		
110430	Methyl (n-amyl) ketone (2-Hexanone)	100	465	Moderate irritation eye, nose, throat/narcosis
74839	C Methyl bromide - Skin	20	80	Acute lung damage/cumulative CNS and organ damage
591786	Methyl butyl ketone	(see 2-Hexanone)		
109864	Methyl cellosolve - Skin	25	80	Blood disorders/CNS effects
110496	Methyl cellosolve acetate - Skin	25	120	Blood disorders/CNS effects/Kidney damage
71556	Methyl chloroform	350	1,900	Mild irritation eye, nose, throat/narcosis
108872	Methylcyclohexane	500	2,000	Narcosis
1331233	Methylcyclohexanol	100	470	Mild irritation eye, respiratory tract/narcosis/cumulative liver and kidney damage
1331222	o-Methylcyclohexanone - Skin	100	460	Mild irritation eye, nose, throat/narcosis
78933	Methyl ethyl ketone (MEK)	(see 2-Butanone)		
107313	Methyl formate	100	250	Narcosis/moderate irritation eye, nose, throat, lungs
74834	Methyl iodide - Skin	5	29	Acute and cumulative CNS effects/suspect carcinogen
108112	Methyl isobutyl carbinol - Skin	25	100	Moderate irritation eye, nose, throat/narcosis
108101	Methyl isobutyl ketone	(See Hexone)		
624839	Methyl isocyanate - Skin	0.02	0.05	Asthma/Marked irritation eye, nose, throat, skin/lung edema

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^a /	Mg/M ³ ^b /	
74933	C Methyl mercaptan	10	20	Obs./moderate irritation eye, nose, throat
26626	Methyl methacrylate	160	410	Mild irritation eye, nose, throat/suspect carcinogen
107679	Methyl propyl Ketone	(see 2-Pentanone)		
1321555	C α Methyl styrene	160	480	Moderate irritation eye, nose, throat/CNS effects/narcosis
101682	C Aethylene bisphenyl isocyanate (MDI)	0.02	0.2	Asthma/marked irritation eye, nose, throat, skin
	Molybdenum:			
N/A	Soluble compounds	-	5	Cumulative liver and kidney damage/blood disorders/mild irritation eye, nose, throat, lung
N/A	Insoluble compounds	-	15	Cumulative liver and kidney damage/blood disorders/mild irritation eye, nose, throat, lung
166618	Monomethyl aniline - Skin	2	9	Methemoglobinemia/anemia
60345	C Monomethyl hydrazine - Skin	0.2	0.35	Acute lung/CNS and blood damage/suspect carcinogen and teratogen
110918	Morpholine - Skin	20	70	Moderate irritation eye, nose, throat/cumulative liver and kidney damage
803306	Naphtha (coaltar)	100	400	Moderate irritation eye, throat/narcosis
51203	Naphthalene	10	50	Marked irritation eye, nose, throat/ocular damage/anemia/CNS/damage/suspect carcinogen
13463393	Nickel carbonyl	0.001	0.007	Suspect carcinogen/acute
	Nickel, metal and soluble cmpds, as Ni	-	1	Suspect carcinogen/cumulative lung damage/dermatitis
54115	Nicotine - Skin	-	0.5	Acute systemic toxicity/CNS damage suspect teratogen
7697372	Nitric acid	2	5	Acute lung damage/marked irritation eye, nose, throat skin
10102439	Nitric oxide	25	30	Methemoglobinemia/CNS effects
100016	p-Nitroaniline - Skin	1	6	Methemoglobinemia/cumulative liver damage
58953	Nitrobenzene - Skin	1	5	Methemoglobinemia/anemia/CNS effects
100005	p-Nitrochlorobenzene - Skin	-	1	Methemoglobinemia/anemia
79243	Nitroethane	100	310	Moderate irritation respiratory tract/narcosis
10102440	C Nitrogen dioxide	5	9	Cumulative lung damage (bronchitis, emphysema)/lung edema

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^v /	MGM ³ /M ³	
7733542	Nitrogen trifluoride	10	25	Methemoglobinemia cumulative liver and kidney damage
55636	Nitroglycerin - Skin	0.2	2	Cumulative effect on blood pressure (lowering) headache
75525	Nitromethane	100	250	Mild irritation eye, nose, throat/narcosis-2-nitropropane
108032	1-Nitropropane	25	90	Moderate irritation eye, nose, throat/cumulative liver damage
79469	2-Nitropropane	25	90	Cumulative liver damage/suspect carcinogen/moderate irritation eye, nose, throat
1321126	Nitrotoluene - Skin	5	30	Methemoglobinemia
76062	Nitrotrichloromethane	(see Chloropicrin)		
2234131	Octachloronaphthalene - Skin	-	0.1	Cumulative liver damage/chloracne
111659	Octane	500	2,350	Mild irritation
	Oil mist, mineral	-	5	Accumulation in lungs (Pneumonitis)
7440382	Organic Arsenic compounds (as As)	-	0.5	Suspect carcinogen/cumulative systemic poison
020816120	Osmium tetroxide	-	0.002	Marked irritation eye, nose, throat, bronchi, lungs/ lung edema
144627	Oxalic acid	-	1	Marked irritation eye, nose, throat, skin
7783417	Oxygen difluoride	0.05	0.1	Marked irritation respiratory tract/marked edema-lungs/ cumulative kidney damage
10028156	Ozone	0.1	0.2	Marked irritation respiratory tract/lung edema
1910425	Paraquat - Skin	-	0.5	Cumulative systemic lung damage/mild irritation eye, nose, throat/suspect teratogen
56382	Parathion - Skin	-	0.1	Cholinesterase inhibition/suspect teratogen
1303975	Pentaborane	0.005	0.01	Acute and cumulative CNS damage
1321648	Pentachloronaphthalene - Skin	-	0.5	Acute systemic toxicity - Vascular and CNS injury/ marked irritation eye and nose/suspect carcinogen
87865	Pentachlorophenol - Skin	-	0.5	Acute systemic toxicity/vascular and nervous system injury/chloracne
109660	Pentane	1,000	2,950	Flammable/narcosis
107879	2-Pentanone	200	700	Moderate irritation eye, nose, throat/narcosis

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ² / _l	MG/M ³ ² / _l	
75707	Perchloromethyl mercaptan	0.1	0.2	Marked irritation eye, nose, throat/suspect carcinogen
7618946	Perchloryl fluoride	3	13.5	Methemoglobinemia/anemia/moderate irritation eye, nose, throat
N/A	Petroleum distillates (naphtha)	500	2,000	Moderate irritation narcosis
102952	Phenol - Skin	5	19	Marked irritation eye, nose, throat, lungs/acute and chronic systemic toxicity/suspect carcinogen
106503	p-Phenylene diamine - Skin	-	0.1	Respiratory sensitization (asthma)/contract skin irritant sensitizer
101848	Phenyl ether (Vapor)	1	7	Nausea/mild irritation eye, skin/cumulative liver and kidney damage
N/A	Phenyl ether - biphenyl mixture (Vapor)	1	7	Nausea/mild irritation eye, skin/cumulative liver and kidney damage
100425	Phenylethylene	(see Styrene)		
122601	Phenyl glycidyl ether (PGE)	10	60	Moderate irritation eye, nose, throat, skin/skin sensitization/narcosis
100630	Phenylhydrazine - Skin	5	22	Hemolytic anemia/skin irritation and sensitization
296011	Phosdrin (Aveviphos [®]) - Skin	-	0.1	Cholinesterase inhibition
75445	Phosgene (carbonyl chloride)	0.1	0.4	Marked edema-lungs chronic lung disease
7803512	Phosphine	0.3	0.4	Acute and chronic systemic toxicity (CNS effects, lung edema, anaemia)
7664302	Phosphoric acid	-	1	Marked irritation eye, nose, throat
7723140	Phosphorus (yellow)	-	0.1	Cumulative bone and liver damage
16026138	* Phosphorus pentachloride	-	1	Marked irritation eye, nose, throat, bronchitis/lung edema
1314803	Phosphorus pentasulfide	-	1	Marked irritation respiratory tract/H ₂ S Hazard
7719122	Phosphorus trichloride	0.5	3	Marked irritation eye, nose, throat, bronchi, lungs/bronchial pneumonia
85449	Phthalic anhydride	2	12	Marked irritation eye, nose, throat, lungs/asthma/contact skin irritant and sensitizer
88991	Picric acid - Skin	-	0.1	Skin irritant and sensitizer cumulative liver, kidney and red blood cell damage

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		ppm ^{a/}	Mg/m ³ ^{a/}	
82261	Pival [®] (2-Pivalyl-1,3-indandione)	-	0.1	Cumulative Anticoagulant effect (Warfarin Analogy)
N/A	Platinum (Soluble Salts) as Pt	-	0.002	Respiratory sensitization (asthma/dermatitis)
74566	Propane	1,000	1,800	Explosive/CNS effects
109604	n-Propyl acetate	200	840	Mild irritation eye, nose, throat/narcosis
109604	Propyl alcohol	200	500	Mild irritation eye, nose, throat/narcosis/suspect carcinogen
627134	n-Propyl nitrate	25	110	Cumulative systemic effects (Methemoglobinemia)
78275	Propylene dichloride	75	350	Cumulative liver damage
75558	Propylene imine - Skin	2	5	Moderate irritation eye, nose, throat/acute kidney and lung damage/suspect carcinogen
75569	Propylene oxide	100	240	Moderate irritation eye, nose, throat, lungs, skin/cumulative CNS, kidney and liver damage/suspect carcinogen
74997	Propyne	(see Methylacetylene)		
800347	Pyrethrum	-	5	Contact and allergic dermatitis mild irritation - lungs
110661	Pyridine	5	15	Cumulative liver, kidney and bone marrow/damage CNS effects
105514	Quinone	0.1	0.4	Acute and cumulative-eye (corneal) damage/suspect carcinogen
	Rhodium:			
7440166	Metal fume and dusts, as Rh	-	0.1	Respiratory sensitization
N/A	Soluble salts	-	0.001	Respiratory sensitization (asthma) suspect carcinogen
299843	Ronnel	-	15	Cholinesterase inhibition
83794	Rotenone (commercial)	-	5	Cumulative systemic toxicity mild irritation nose, throat, suspect carcinogen
N/A	Selenium compounds (as Se)	-	0.2	Moderate irritation eye
7783791	Selenium hexafluoride	0.05	0.4	Lung edema
7440224	Silver, metal and soluble compounds	-	0.01	Cumulative skin pigmentation and organ accumulation
62749	Sodium fluoroacetate (1080) - Skin	-	.05	Acute systemic toxicity (metabolic poison)
1310732	Sodium hydroxide	-	2	Marked irritation eye, nose, throat, lungs, skin

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM $\frac{v}{v}$	MG/M ³ $\frac{w}{v}$	
7803523	Sulfine	0.1	0.5	Acute systemic toxicity
MX6052413	Standard solvent	500	2,900	Mild irritation eyes, nose, throat/narcosis
57249	Strychnine	-	0.15	Acute systemic toxicity, CNS (convulsions and paralysis)
7446095	Sulfur dioxide	5	13	Marked irritation eye, nose, throat, lungs/broncho-constriction
2251624	Sulfur hexafluoride	1,000	6,000	Apparent low toxicity
7664939	Sulfuric acid	-	1	Marked irritation eye, nose, throat, skin, bronchi/dental erosion
10025679	Sulfur monochloride	1	6	Marked irritation eye, nose, throat, lung
5714227	Sulfur pentafluoride	0.025	0.25	Marked irritation lung (edema)
2699793	Surfuryl fluoride	5	20	Cumulative kidney and lung damage/acute CNS effects
MX3000973	Systox	(see Dematon ^(D))		
93765	2,4,5T	-	10	Suspect teratogen and carcinogen
7440257	Tantalum	-	5	Apparent low toxicity
3689245	TEDP - Skin	-	0.2	Cholinesterase inhibition
10028167	Tellurium	-	0.1	Acute CNS effects/cumulative organ damage
7783804	Tellurium hexafluoride	0.02	0.2	Lung edema
107493	TEPP - Skin	-	0.65	Cholinesterase inhibition
	C Terphenyls	1	9	Moderate irritation eye, nose, throat, lungs
76119	1,1,1,2-Tetrachloro-2,2-difluoro-ethane	500	4,170	Lung edema/respiratory failure
76120	1,1,2,2-Tetrachloro-1,2-difluoro-ethane	500	4,170	Cumulative liver damage/decreased white blood cell count/lung edema
79345	1,1,2,2-Tetrachloroethane - Skin	5	35	Cumulative liver and other organ damage
56235	Tetrachloromethane	(see Carbon tetrachloride)		
1335682	Tetrachloronaphthalene - Skin	-	2	Cumulative liver damage/chloracne
78002	Tetraethyl lead (as Pb) - Skin	-	0.075	Cumulative liver, CNS and kidney damage/acute CNS effects

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^v	NIJ/MI ³ /	
109959	Tetrahydrofuran	200	590	Moderate irritation eye, nose, throat/narcosis
75741	Tetramethyl lead (as Pb) - Skin	-	0.075	Cumulative liver, CNS and kidney damage/acute CNS effect
3333526	Tetramethyl succinonitrile - Skin	0.5	3	Acute systemic toxicity (CNS) - headache, nausea, convulsions
509148	Tetra nitroethane	1	8	Marked irritation eye, nose, throat/acute CNS and lung effects (edema)/cumulative systemic damage
479458	Tetryl (2,4,6-trinitrophenyl-methylnitramine) - Skin	-	1.5	Contact dermatitis, skin sensitization/cumulative systemic toxicity
7440280	Thallium (soluble compounds) - Skin as Tl	-	0.1	Cumulative systemic toxicity
137268	Thiram	-	5	Acute systemic toxicity (antabuse-like effects)/suspect teratogen
7440315	Tin (inorganic compounds, except oxides)	-	2	Acute and chronic systemic toxicity
N/A	Tin (organic compounds)	-	0.1	Marked irritation skin/cumulative systemic toxicity
584849	C Toluene-2,4-diisocyanate	0.02	0.14	Asthma/marked irritation eye, nose, throat, bronchi, lungs/dermatitis
95534	o-Toluidine - Skin	5	22	Methemoglobinemia/acute systemic effects/suspect carcinogen
8001352	Toxaphene	(see Chlorinated camphene)		
126738	Tributyl phosphate	-	5	Moderate irritation nose, throat, lungs/headache
71556	1,1,1-Trichloroethane	(see Methyl chloroform)		
75005	1,1,2-Trichloroethane - Skin	10	45	Cumulative liver damage/narcosis
1309633	Titaniumdioxide	-	15	Nuisance particulate - accumulation in lungs
67653	Trichloromethane	(see Chloroform)		
1321659	Trichloronaphthalene - Skin	-	5	Cumulative liver damage/Chloracne
56134	1,2,3-Trichloropropane	50	200	Moderate irritation eye, nose, throat/cumulative liver damage
76131	1,1,2-Trichloro 1,2,2-trifluoro-ethane	1,000	7,600	Apparent low toxicity

See footnote at end of table.

Table 1 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		PPM ^a	Mg/M ³ b/	
121448	Triethylamine	25	100	Marked irritation eye, nose, throat, lungs/lung edema/ corneal damage
75639	Trifluoromonomethylmethane	1,000	6,100	Apparent low toxicity
22891	2,4,6-Trinitropropenol	(see Picric acid)		
479458	2,4,6-Trinitrophenylmethyl- nitramine	(see Tetryl)		
118967	Trinitrotoluene - Skin	-	1.5	Methemoglobinemia/A plastic anemia/cumulative eye (cataracts) and liver damage
78308	Triorthocresyl phosphate	-	0.1	Polyneuropathy
115866	Triphenyl phosphate	-	3	Cholinesterase inhibition
MX8006642	Turpentine	100	560	Moderate irritation eye, nose, throat, bronchi, lungs, skin/cumulative kidney damage
N/A	Uranium (soluble compounds)	-	0.05	Cumulative kidney damage
7440611	Uranium (insoluble compounds)	-	0.25	Cumulative kidney damage/lung accumulation
	Vanadium:			
7440622	V ₂ O ₅ dust	-	0.5	Marked irritation eye, nose, throat, bronchi, lungs, skin/ acute and chronic bronchial and lung damage
7440622	V ₂ O ₅ fume	-	0.1	Marked irritation eye, nose, throat, bronchi, lungs, skin/ acute and chronic bronchial damage
100425	Vinyl benzene	(see Styrene)		
107131	Vinyleyanide	(see Acrylonitrile)		
1321455	Vinyl toluene	100	480	Moderate irritation eye, nose, throat
81812	Warfarin	-	0.1	Cumulative anticoagulant effect
1330207	Xylene (Xylol)	100	435	Moderate irritation eye, nose, throat/narcosis
1300739	Xylidine - Skin	5	25	Methemoglobinemia/acute systemic toxicity
7440655	Yttrium	-	1	Pneumoconiosis (diffuse fibrosis)
7646857	Zinc chloride fume	-	1	Marked irritation eye, nose, throat, lungs/acute lung damage/suspect carcinogen
1314132	Zinc oxide fume	-	5	Acute systemic toxicity (metal fume fever)
7440677	Zirconium compounds (as Zr)	-	5	Pneumoconiosis/lung and skin granulomas

See footnote at end of table.

Footnotes:

2-Parts of vapor or gas per million parts of contaminated air by volume at 25°C. and 760 mm. Hg pressure.
3- Approximate milligrams of particulate per cubic meter of air.
(No footnote "c" is used to avoid confusion with ceiling value notations.)

4- An atmospheric concentration of not more than 0.02 p.p.m., or personal protection may be necessary to avoid headache.

CAS NUMBER: Chemical Abstract Service Registry Number, as obtained from The Registry of Toxic Effects of Chemical Substances, 1979.

The Registry of Toxic Effects of Chemical Substances, 1979.

LISTING OF HAZARDOUS SUBSTANCES

CAS NUMBER	SUBSTANCE	% HOUR TIME WEIGHTED AVERAGE	ACCEPTABLE CEILING CONCENTRATION	ACCEPTABLE MAXIMUM PEAK ABOVE THE ACCEPTABLE CEILING CONCENTRATION FOR AN 8-HOUR SHIFT.		SYMPTOMS
				CONCENTRATION	MAXIMUM	
71432	Benzene	10 p.p.m.	25 p.p.m.	50 p.p.m.	10 minutes	Suspect leukemogen/ Cumulative bone marrow damage
7490417	Beryllium and beryllium compounds	2 $\mu\text{g}/\text{M}^3$	5 $\mu\text{g}/\text{M}^3$	25 $\mu\text{g}/\text{M}^3$	30 minutes	Suspect carcinogen/ Cumulative lung damage (Berylliosis)
7440435	Cadmium dust	0.2 mg/M ³	0.6 mg/M ³			Suspect carcinogen/ Cumulative kidney and lung damage
1306190	Cadmium fume	0.1 mg./M ³	0.3 mg/M ³			Cumulative kidney and lung damage/suspect carcinogen
75150	Carbon disulfide	20 p.p.m.	30 p.p.m.	100 p.p.m.	30 minutes	Cumulative CNS damage/ reproductive impairment
56235	Carbon tetrachloride	10 p.p.m.	25 p.p.m.	200 p.p.m.	5 minutes in any 4 hours.	Cumulative liver damage/ suspect carcinogen/ teratogen
106934	Ethylene dibromide	20 p.p.m.	30 p.p.m.	50 p.p.m.	5 minutes	Suspect carcinogen, mutagen, teratogen/ cumulative kidney damage/reproductive hazard
107062	Ethylene dichloride	50 p.p.m.	100 p.p.m.	200 p.p.m.	5 minutes in any 3 hours.	Cumulative liver damage
N/A	Flouride as dust	2.5 mg./M ³				Marked irritation eye, nose, throat/cumulative bone damage
50000	Formaldehyde	3 p.p.m.	5 p.p.m.	10 p.p.m.	30 minutes	Marked irritation eye, lungs, skin/suspect carcinogen
7664393	Hydrogen fluoride	3 p.p.m.	5 p.p.m.	10 p.p.m.	30 minutes	Marked irritation eye, nose, throat/acute lung damage/cumulative bone damage

Table 2 (cont'd)

CAS NUMBER	SUBSTANCE	8-HOUR TIME WEIGHTED AVERAGE	ACCEPTABLE CEILING CONCENTRATION	ACCEPTABLE MAXIMUM PEAK ABOVE THE ACCEPTABLE CEILING CONTRA-TION FOR AN 8-HOUR SHIFT.		SYMPTOMS
				CONCENTRATION	MAXIMUM	
7783064	Hydrogen sulfide		20 p.p.m.	50 p.p.m.	10 minutes once only if no other measurable exposure occurs.	Acute systemic toxicity/moderate irritation eye, (conjunctivitis) lungs/CNS effects
74973	Methyl chloride	100 p.p.m.	200 p.p.m.	300 p.p.m.	5 minutes in any 3 hours.	Acute and chronic CNS effects/liver and kidney damage
75092	Methylene chloride	500 p.p.m.	1,000 p.p.m.	2,000 p.p.m.	5 minutes in any 2 hours.	Chemical anoxia (metabolic conversion to CO)/chronic liver damage/CNS effects/narcosis
100425	Styrene	100 p.p.m.	200 p.p.m.	600 p.p.m.	5 minutes in any 3 hours.	Acute and cumulative CNS damage/marked skin irritation
127184	Tetrachloroethylene	100 p.p.m.	200 p.p.m.	300 p.p.m.	5 minutes in any 3 hours.	Moderate irritation eye, nose, throat/CNS effects/narcosis
108883	Toluene	200 p.p.m.	300 p.p.m.	500 p.p.m.	10 minutes	Cumulative liver and CNS damage/narcosis/suspect carcinogen
79016	Trichloroethylene	100 p.p.m.	200 p.p.m.	300 p.p.m.	5 minutes in any 2 hours.	Moderate irritation eye, nose, throat/narcosis
7439976	Mercury		1 mg./10M ³			Narcosis/cumulative systemic toxic effects/suspect carcinogen
7738945	Chromic acid and chromates		1 mg./10M ³			Acute and cumulative CNS damage/gastro-intestinal effects/gingivitis/suspect carcinogen

TABLE 3
MINERAL DUSTS

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT MPPCF ³ /	MG/M ³	SYMPTOMS
14809607	Crystalline: Quartz (respirable)	$\frac{250 \mu\text{f}}{\% \text{SiO}_2 + 5}$	$\frac{10 \text{ mg/M}^3 \text{ m}}{\% \text{SiO}_2 + 2}$	Pneumoconiosis (silicosis)
	Quartz (total dust)		$\frac{30 \text{ mg/M}^3}{\% \text{SiO}_2 + 2}$	Pneumoconiosis (silicosis)
N/A	Crystalline: Use $\frac{1}{2}$ the value calculated from the count or mass formula for quartz. Tridymite: Use $\frac{1}{2}$ the value calculated from the formula for quartz.			Pneumoconiosis
15468323				
7631869	Amorphous, including natural diatomaceous earth	20	$\frac{40 \text{ mg/M}^3}{\% \text{SiO}_2}$	
N/A	Silicates (less than 1% crystalline silicates):			
12001262	Mica	20		Accumulation in lungs (pneumoconiosis)
N/A	Soapstone	20		Pneumoconiosis
N/A	Talc (non-asbestos-form)	20 μf		Pneumoconiosis (talcosis)
N/A	Talc (fibrous). Use asbestos limit.			Cancer (lung)
1332214	Tremolite	(see talc fibrous)		
N/A	Portland cement	50		Nuisance particulate/mild irritation - eye and nose
N/A	Graphite (natural)	15		Cumulative lung damage (pneumoconiosis)
N/A	Coal dust (respirable fraction less than 5% SiO ₂)		$\frac{2.4 \text{ mg/M}^3}{\text{or}} \frac{10 \text{ mg/M}^3}{\% \text{SiO}_2 + 2}$	Pneumoconiosis

See footnote at end of table.

Table 3 (cont'd)

CAS NUMBER	SUBSTANCE	PERMISSIBLE EXPOSURE LIMIT		SYMPTOMS
		MPPCF ² /	MG/M ³	
	Inert or Nuisance Dust:			
	Respirable fraction	15	5 mg/M ³	
	Total dust	50	15 mg/M ³	

Footnotes:

NOTE: Conversion factors -

mppcf x 35.3 = million particles per cubic meter
 = particles per c.c.

- c/ -Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.
- f/ -The percentage of crystalline silica in the formula is the amount determined from air-borne samples, except in those instances in which other methods have been shown to be applicable.
- m/ -Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:
- n/ -Containing 1% quartz; if 1% quartz, use quartz limit.

PUBLISHED

**UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT**

No. 81-2231 (L),

West Virginia Manufacturers
Association, a nonprofit West
Virginia Corporation,

Appellant,

vs.

State of West Virginia and
Lawrence Barker, Commissioner
of Labor of the State of
West Virginia,

and

United Steelworkers of America,
AFL-CIO-CLC and Paul Rusen, Director
District 23, United Steelworkers
of America, AFL-CIO-CLC,

Appellees.

No. 82-1701

West Virginia Manufactures
Assoc., a nonprofit West
Virginia corporation,

Appellant,

vs.

State of West Virginia and
Lawrence Barker, Commissioner
of Labor of the State of WV,

Appellees,

and

United Steelworkers of America,
AFL-CIO-CLC and Paul Rusen,
Director District 23, United
Steelworkers of America, AFL-
CIO-CLC,

Appellees.

West Virginia Manufacturers
Assoc., a nonprofit West
Virginia corporation,

Appellee,

vs.

State of West Virginia and
Lawrence Barker, Commissioner
of Labor of the State of WV,

Appellants,

and

United Steelworkers of America,
AFL-CIO-CLC and Paul Rusen,
Director District 23, United
Steelworkers of America, AFL-
CIO-CLC,

Third-Party
Defendants.

Appeals from the United States District Court for the Southern
District of West Virginia, at Charleston. William M. Kidd,
District Judge.

Argued: February 7, 1983

Decided: August 3, 1983

Before ERVIN, Circuit Judge, CHAPMAN, Circuit Judge and BRYAN,
Senior Circuit Judge.

Robert B. King (King, Betts & Allen; George G. Guthrie, Spilman,
Thomas, Battle & Klostermeyer on brief) for Appellant; Leonard
B. Knee, Assistant Attorney General (Dennis M. Abrams, Deputy
Attorney General on brief) and Mary-Win O'Brien for Appellee.

BRYAN, Senior Circuit Judge:

The West Virginia Manufacturers Association (the Association) urges us to disapprove, on State and Federal grounds, a statute duly enacted by the legislature of the State of West Virginia. We decline to do so, finding no fault in the enactment in any respect.

I

The West Virginia Hazardous Chemical Substances Act, W. Va. Code § 21-3-18 (1981) (the Act), requires "[a]ny employer of ten or more employees using or producing any . . . listed hazardous chemical substance . . ." to post conspicuously in the work area where the chemical is used a warning notice which gives the name of the chemical and the common symptoms of overexposure. The Act directs the Commissioner of Labor to select the chemical substances he deems hazardous from a list compiled pursuant to Federal law and published at 29 C.F.R. § 1910.1000 (1982). His choice is to be guided by the frequency of use, frequency of exposure or overexposure, the seriousness of the effects of such exposure or overexposure, or other reasons which the Commissioner deems significant. He also is empowered to adopt all necessary rules and regulations. Proposed regulations were put forward for public comment and, after revision and a public hearing, were scheduled to become effective on December 16, 1981.

On November 18, 1981 the Association filed this civil action in the Federal Court for the Southern District of West

Virginia seeking declaratory and injunctive relief against the State and Lawrence Barker, her Commissioner of Labor. The complaint sought a declaration that the Act and the regulations promulgated thereunder were unconstitutional and void, it sought too an injunction prohibiting their enforcement. After an evidentiary hearing, the Court entered a temporary restraining order enjoining enforcement of the Act and regulations. However, on December 18 the Court dissolved the TRO, and denied all further injunctive relief. The Association noted an appeal (No. 81-2231) and moved for an injunction pending appeal which Judge Hall of this Court granted.

Thereafter, in accordance with and as permitted by Judge Hall's order, the District Court proceeded to consider the remaining aspects of the Association's grievance. On July 1, 1982, the Court upheld the Act save for a provision permitting adoption of future regulatory amendments.¹ It also struck down the administrative regulations on grounds that they had been improperly promulgated under West Virginia law.² On July 27, 1982, the Association noted its appeal, (No. 82-1701) and, on August 9, the State filed a cross appeal (No. 82-1729). By order of this Court entered October 1, 1982, the three causes

1. West Virginia Mfrs. Ass'n v. West Virginia, 542 F. Supp. 1247 (S.D.W.Va 1982).

2. Id.

were consolidated.³

In our Nos. 81-2231 and 82-1701 the Association challenges the validity of the Act on the ground it fails to meet the requirements of West Virginia law and the Federal constitution. On cross appeal, No. 82-1729, the State seeks reversal of those aspects of the District Court's decision that were adverse to it. We now turn to these contentions in more specificity.

II

A. Title defects

Primary among the objections based on State law is the assertion that the statute is unconstitutional because its title does not reveal that violators may be subject to criminal penalties. The questioned title reads: "Hazardous Chemical Substances; notice to employees; reports to commissioner; penalties." Defect is laid to the word "penalties" which the Association deems insufficient to advise that the sanctions are criminal.

The West Virginia Constitution, on which this attack is grounded, provides, in part, that

3. After the issuance of the District Court's July 1, 1982 order holding the administrative regulations invalid, the Commissioner attempted to promulgate the same regulations under an "emergency" provision of the West Virginia Administrative Procedures Act. However, on Sept. 3, 1982, prior to the effective date of the emergency regulations, the District Court enjoined their effectuation pending this appeal. On Nov. 1, 1982, this Court denied appellees' motion to vacate the injunction pending appeal.

[n]o act hereafter passed, shall embrace more than one object, and that shall be expressed in the title. But if any object shall be embraced in an act which is not so expressed, the act shall be void only as to so much thereof, as shall not be so expressed

W. Va. Const. art. 6, § 30. The Supreme Court of Appeals of West Virginia has declared that the purpose of this section is to prevent concealment of the content of legislation.⁴ Consequently, the dispositive question is whether "the title of the act was such that it should have provoked a reading of the act by a person interested in its subject matter." State ex rel. Graney v. Sims, 144 W. Va. 72, 105 S.E. 2d 886, 892 (1958). West Virginia courts follow a rule of liberal construction when statutes are assailed for title deficiencies, resolving all doubts in favor of the questioned enactment. Chesapeake & Ohio Railroad v. Patton, 9 W. Va. 648 (1876).

Mindful of these principles, we agree with the District Court that the title under scrutiny here plainly advises of the Act's import and purpose. 542 F. Supp. at 1250. The word "penalties" connotes sufficiently that penal sanctions are contemplated and, as a whole, the title will induce any interested party to read the text of the statute.

B. Delegation problems

Delegation problems are said to arise because the Act directs the Commissioner of Labor to establish the list of

4. State ex rel. Davis v. Oakley, 156 W. Va. 154, 191 S.E. 2d 610 (1972).

hazardous substances the use or production of which requires warning notices. This list is to be drawn from among those chemicals which pose a health risk, as determined by the U.S. Department of Labor now and in the future. At trial, the Association complained that the Act unconstitutionally delegates legislative power to the Commissioner of Labor because it does not contain standards adequate to temper this grant of legislative authority and because it purports to give an administrative agency the power to make in futuro amendments to the list which carry criminal penalties. The District Court rejected the challenge except insofar as the Act permitted the adoption of future regulatory amendments. 542 F. Supp. at 1252. In this Court, the Association urges affirmance of the latter holding and renews its earlier objections, seeking a determination that the Act is completely invalid on delegation grounds. Upon cross appeal the State seeks reversal of the District Court's judgment striking down the in futuro provisions.

With respect to this latter attack, we note that West Virginia has since enacted a new Administrative Procedures Act.⁵ The effect of this enactment is to require that all rules and regulations adopted by any State agency be first presented to the legislature for ratification.⁶ All other delegations of legislative authority to adopt substantive rules and regulations

5. W. Va. Code § 29A-1-1 et seq. (1980 & Supp. 1982).

6. Id. §§ 29A-3-11, -3-12.

have been withdrawn.⁷ In our view this exaction has mooted the charge that the Act's provision for future regulatory amendments offends the West Virginia Constitution.⁸

Still appropriate for our consideration, however, is the question whether the broad and general command to the Commissioner to maintain a list of hazardous chemical substances unconstitutionally confers on the executive a legislative role. In State v. Grinstead, 157 W. Va. 1001, 206 S.E. 2d 912 (1974), a similar accusation was held meritless where the delegating law set forth standards and limitations adequate to protect the legislative prerogative.

The legislation questioned here directs the Commissioner to draw his list from those substances designated in 29 C.F.R. 1910.1000 (1982) as "hazardous or toxic to the health of employees who may be exposed to them in the course of employment." W. Va. Code § 21-3-18(a) (1981). Further strictures require him to consider the frequency of use, frequency of exposure or overexposure, and the seriousness of the effects of such exposure. Id. § 21-3-18(b). District Judge Kidd held, we think correctly, that

7. Id. § 29A-3-1.

8. Voluntary cessation of allegedly illegal conduct can render a case moot if there is no reasonable likelihood that the wrong will be repeated. See DeFunis v. Odegaard, 416 U.S. 312, 318 (1974) (per curiam); United States v. W. T. Grant Co., 345 U.S. 629, 632-33 (1953).

[t]hese guidelines, when followed in light of the Act's stated legislative policy, form complete and adequate standards and limitations to protect the legislature's prerogatives. The Commissioner is not being vested with unfettered legislative authority; indeed, the Act clearly restricts his authority by providing for adequate guidelines.

542 F. Supp. at 1251.

C. Administrative procedure

Remaining State law matters concern the legality of the rules and regulations promulgated pursuant to the Act. The District Court struck the regulations, holding that the Commissioner of Labor did not file findings and determinations in the State register as required by the version of West Virginia's Administrative Procedures Act then in effect.⁹ On cross appeal the State contests this holding.

When the Commissioner endeavored to promulgate the challenged rules, he was bound by W. Va. Code § 29A-3-6 (1980), which stated:

Before any rules or regulations mentioned in section five [§ 29A-3-5] shall be effective, the agency shall promulgate the findings and determinations required and state fully and succinctly the reasons therefor and file such findings and determinations in the state register. The statement of reasons and a transcript of all evidence received pursuant to notice shall be public records and shall be carefully preserved by the agency and be open for public inspection and copying for a period and term of not less than five years from the date of the hearing.

We read this statute as placing the responsibility on the Commissioner to file his findings in the State register. Upon

9. W. Va. Code § 29A-1-1 et seq. (1980), amended by id. § 29A-1-1 et seq. (Supp. 1982).

his failure to do so, the attempted promulgation is definitively flawed. The District Court's identical conclusion, 524 F. Supp. at 1252-53, is thus affirmed.

III

Having considered and rejected the Association's objections to the Act founded on State law, we turn to its Federal contentions.

A. Preemption

The Association's preemption argument claims Federal supremacy in the regulation of hazardous and toxic substances in the work place as established by the United States constitution¹⁰ and the Federal Occupational Safety and Health Act of 1970,¹¹ (hereinafter "OSHA"). However, OSHA provides, in part, that:

(a) Nothing in this chapter shall prevent any State agency or court from asserting jurisdiction under State law over any occupational safety or health issue with respect to which no standard is in effect under section 655 of this title.

(b) Any State which, at any time, desires to assume responsibility for development and enforcement therein of occupational safety and health standards relating to any occupational safety or health issue with respect to which a Federal standard has been promulgated under section 655 of this title shall submit a State plan for the development of such standards and their enforcement.

10. "This constitution, and the laws of the United States which shall be made in pursuance thereof . . . shall be the supreme law of the land." U.S. Const. art. VI.

11. 29 U.S.C. § 651 et seq.

29 U.S.C. § 667 (a) & (b).

Appellant argues that there is a Federal standard in existence under section 655 and, since West Virginia has not submitted a State plan for the development of such standards and their enforcement, all State regulation is preempted. West Virginia avers that there is no Federal standard in effect and, accordingly, that it is not prevented from asserting jurisdiction.

The District Court found that the Secretary of Labor, pursuant to OSHA, did adopt certain standards relating to toxic and hazardous substances which included safe exposure levels. 542 F. Supp. at 1254. But, the Court further held, this Federal standard did not operate to preempt West Virginia's statute because the two laws were different in object and purpose:

The standard that the State of West Virginia seeks to implement is not a "level of exposure" standard. National standards exist as to exposure; both the federal and state regulations adopt those standards. The standard that the State of West Virginia seeks to implement is a "notice and posting" standard, designed to inform employees of toxic or hazardous substances in the workplace, of permissible exposure levels and of the symptoms of overexposure to those substances.

Id.

The Association maintains that the District Court's view of the Federal regulations is too narrow, finding a Federal intent to reach the issue of disclosure, as well as that of exposure. To preserve Federal discretion in this field, it is contended that State jurisdiction should be strictly limited.

We do not find this point persuasive. So sweeping a definition of the term "standard" would defeat most forms of State participation in achieving the national objective of safe workplaces. Moreover, we are reluctant to attribute proscriptive meaning to the Federal agency's decision not to require posting.¹² Federal determinations not to regulate may stem from innumerable considerations unrelated to the health and safety issue. Such a negative implication should not be preclusive. We hold that West Virginia properly may assert her interest in this fashion.

B. Due process

The Association next urges that, even if State notice and posting requirements are generally permissible, this statute must be struck down as repugnant to the Federal constitution. The statutory language is said to be so imprecise as to amount to a violation of the due process clause of the Fourteenth Amendment. Specifically, words and phrases such as "work area," "work site," "conspicuously" and "readily visible" are allegedly vague, leaving employers without meaningful guidance as to how they may effect compli-

12. Substances more extensively regulated by OSHA, such as asbestos, are frequently required to be labeled. Posting of caution signs may be required. See, e.g., 29 C.F.R. § 1910.1001(g) (1982). However, these more extensively regulated substances, some twenty in number, are not included on the Commissioner's list and therefore are not regulated by W. Va. Code § 21-3-18 (1981); the State concedes that a "posting standard" exists as to these twenty substances.

ance. The State counters that a "plain meaning" construction of the statute cures any alleged defect.

It is, of course, beyond dispute that an enactment imposing criminal penalties for its violation must clearly define the prohibited acts in order to rebuff a constitutional challenge. See, e.g., Kolender v. Lawson, 51 U.S.L.W. 4532 (U.S. May 2, 1983); Papachristou v. City of Jacksonville, 405 U.S. 162 (1972). It is likewise clear, however, that "[t]he degree of vagueness that the Constitution tolerates . . . depend[s] in part on the nature of the enactment[.]" Hoffman Estates v. Flipside, Hoffman Estates, 455 U.S. 489, 498 (1982) and that with respect to "regulatory statutes governing business activities, greater leeway is allowed." Papachristou, 405 U.S. at 165. And when matters of public health and safety are involved, saving constructions are to be encouraged. Bristol Steel & Iron Works v. Occupational Safety & Health Review Commission, 601 F.2d 717 (4th Cir. 1979).

Drawing on all of this, we hold that W. Va. Code § 21-3-18 (1981) is not void for vagueness. The meaning of its language is discoverable from the context and thereby gives full and fair notice to those of ordinary intellect that certain specified conduct is prohibited.

C. Equal protection

The Association claims, finally, that the Act violates principles of equal protection by excluding from its coverage the coal, horticulture and agriculture industries and employers

of less than ten employees. W. Va. Code § 21-3-18(c) & (f) (1981). These exceptions are said to be unreasonable in view of the Act's stated purpose, which is to ensure that employees exposed to certain toxic substances at work would be warned of the potential harm from overexposure.

The principles governing equal protection analysis are familiar:

In applying that clause, this Court has consistently recognized that the Fourteenth Amendment does not deny to States the power to treat different classes of persons in different ways. The Equal Protection Clause of that amendment does, however, deny to States the power to legislate that different treatment be accorded to persons placed by a statute into different classes on the basis of criteria wholly unrelated to the objective of that statute. A classification "must be reasonable, not arbitrary, and must rest upon some ground of difference having a fair and substantial relation to the object of the legislation, so that all persons similarly circumstanced shall be treated alike."

Reed v. Reed, 404 U.S. 71, 75-76 (1971) (quoting Royster Guano Co. v. Virginia, 253 U.S. 412, 415 (1920)). The question, then, is whether the Act's underinclusiveness can reasonably be justified with reference to its purpose.

We agree with the State and with the trial court that the goal of avoiding duplicative regulation supports the exclusions granted to the coal, horticulture and agriculture industries. The latter two industries are extensively regulated at the Federal level by the U.S. Environmental Protection Agency;¹³ with respect to coal mining and production, West

13. See 7 U.S.C. § 136 et seq.; 40 C.F.R. § 170.1 et seq. (1974); 29 C.F.R. §§ 1928.2B (1982).