

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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Attachment No. 3

INITIAL STATEMENT OF REASONS

CALIFORNIA CODE OF REGULATIONS
Title 8: Chapter 4, Subchapter 7, Article 107,
General Industry Safety Orders, Section 5155

Airborne Contaminants**PROBLEM ADDRESSED BY PROPOSED ACTION**

Pursuant to California Labor Code Section 142.3, the Occupational Safety and Health Standards Board (Board) may adopt, amend, or repeal occupational safety and health standards or orders. Section 142.3 permits the Board to prescribe, where appropriate, suitable protective equipment and control or technological procedures to be used in connection with occupational hazards and provide for monitoring or measuring employee exposure for their protection. California Labor Code Section 144.6 requires that the Board, when dealing with standards for toxic materials and harmful physical agents, adopt standards which most adequately assure, to the extent feasible, that no employee suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard for the period of his (or her) working lifetime. This section also requires that the Board base standards on research, demonstrations, experiments and other information as may be appropriate. Labor Code Section 144.6 also lists other considerations as the latest scientific literature, the reasonableness of the standards, and the experience gained in this and other health and safety laws.

Existing Section 5155 establishes minimum requirements for controlling employee exposure to specific airborne contaminants. This Section specifies several types of airborne exposure limits, requirements for control of skin and eye contact, workplace environmental monitoring through measurement or calculation, and medical surveillance requirements. These requirements were last comprehensively considered and amended between January 1993 and May 1995. Since that time the body of information and the understanding of harmful effects of the substances listed in Section 5155 and others not listed there have changed. These changes have the effect of placing existing Section 5155 out of compliance with Labor Code Section 144.6.

Additionally, the Board has considered two petitions requesting changes in exposure control requirements for fiberglass insulation and cellulose fiber insulation materials. The petitions were assigned file numbers 350 and 354, respectively. Labor Code Section 142.2 requires the consideration of such petitions, and this amendment implements the Board's decisions regarding these petitions.

SPECIFIC PURPOSE AND FACTUAL BASIS OF THE PROPOSED ACTION

In accordance with Labor Code Section 144.6, the purpose of this amendment to Section 5155 is to regulate employee exposure to toxic materials such that, to the extent feasible, the health or functional capacity of the employee is not materially impaired. This proposal was developed and presented to the Board by the Division of Occupational Safety and Health (Division) pursuant to the Division's independent mandate to maintain surveillance and propose standards to the Board in accordance with Labor Code Section 147.1. The Division has developed and presented similar proposals to the Board periodically in the past, normally at approximately two-year intervals. The Division in developing proposals has in these cases relied in part on changes made to the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) to indicate substances to be considered for change. The development of the current proposal is consistent with this past practice and uses the accumulated changes of the ACGIH for the years 1993-1994, 1994-1995, 1995-1996, and 1996-1997. The substances for which TLVs were changed during this period serve as a base list of substances for development of the current proposal, as well as petitions 350 and 354. The ACGIH changes to TLVs are used to produce the base list for consideration for several reasons. The ACGIH TLVs are the most comprehensive single source of exposure limits available, the ACGIH TLVs are substantiated by available documentation, and there is ongoing review of the TLVs by the ACGIH with annual revision.

The Division, in developing the current and past proposals, has convened advisory committees to consider and make recommendations on the substances in the base list and other substances from other sources such as the petitions referenced in this proposal. The Airborne Contaminants Advisory Committee (Committee), which considered substances for development of this proposal, met ten times between March 1997 and June 1998. The Committee independently evaluated the changes made to TLVs and changes requested in the petitions using the ACGIH documentation, presentations and additional documentation provided by interested parties, documents referred to in the ACGIH documentation, and other documents provided by the members of the Committee.

In many cases the Committee's recommendations agreed with the rationale and limits set by the ACGIH, in other cases the Committee made recommendations not in agreement with the ACGIH limits, and in some cases the Committee used a different basis than that used by the ACGIH. The Committee's recommendations were made on the basis of consensus of opinion of the members. The Committee spent a considerable amount of time during Committee meetings discussing a class of substances regulated by Section 5155 which are considered by other authoritative bodies such as the World Health Organization's International Agency for Research on Cancer as suspect or actual human carcinogens. The Committee members wanted it made clear that the recommendations they were making should not be assumed to adequately control this aspect of risk for many of the substances considered. Summaries of the discussion of this issue can be found in the Committee meeting minutes on the following dates 9/15/97, 9/29/97, and 11/07/97. The Committee stated its position on this issue in the following statement:

The Airborne Contaminants Advisory Committee

carcinogen position statement

This substance has been identified by the International Agency for Research on Cancer as a carcinogen (Group 2B or higher). The exposure limits recommended have been primarily set on the basis of other types of toxic results, damage or interference with organ systems, irritation, respiratory problems, etc. Quantitative risk assessments can be used to estimate risks of cancer at various exposure levels in order to set a Permissible Exposure Limit. No such risk assessments have been conducted by this committee. Currently, neither the Division of Occupational Safety and Health nor the Occupational Safety and Health Standards Board have standard methods for performing these assessments or a useful criterion against which limits might be set. Cal/OSHA should reconsider the Permissible Exposure Limit proposed here if such a carcinogen guideline policy is adopted and appropriate resources can be allocated for an occupational risk assessment for this substance.

The above statement applies to these substances considered by the Committee:

Acetaldehyde
Carbon tetrachloride
Cobalt, elemental and inorganic compounds, as Co
Cr VI compounds
p-Dichlorobenzene
1,1 -Dimethylhydrazine
Glass, fibrous
Heptachlor
Hexachlorobenzene
Hydrazine
Perchloroethylene
Phenyl glycidyl ether
Trichloroethylene
Vinyl acetate
4-Vinyl cyclohexene
Vinyl cyclohexene dioxide

The following is a discussion of the specific changes to Table AC-1 in the order that they occur in the proposal. The ACGIH documents, minutes of the ten Advisory Committee meetings, other documents and reasons listed below form the factual basis for this proposal.

The Permissible Exposure Limit (PEL) for Acetaldehyde is proposed to be lowered from 100 ppm to 25 ppm (45 mg/M³) as a ceiling limit. The current Short Term Exposure Limit (STEL) of 150 ppm is deleted, as the new limit is a ceiling value. The change is proposed to control mucous membrane irritation. This limit was adopted by the ACGIH in 1993, and is consistent

with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for acetaldehyde.

A new PEL for Acetone cyanohydrin is proposed at 4.7 ppm (5 mg/M³) as a ceiling limit. This proposed limit is to control cyanide like toxicity and is based on several cases of human poisoning, mainly through skin contact. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for acetone cyanohydrin.

A new PEL for Acetophenone is proposed at 10 ppm (49 mg/M³) on the basis of eye irritation and possible light sensitization due to exposure. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for acetophenone.

A new PEL for Adipic acid is proposed at 5 mg/M³. The proposed limit is intended to control behavioral and gastric effects from exposure to this substance. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for adipic acid.

A new PEL for Adiponitrile at 2 ppm (8.8 mg/M³) with a skin designation is proposed. The proposed PEL is based on significant toxic effects observed in rats and tentative indications of anemia in workers exposed in nylon production. The skin designation is proposed due to the possibility of significant absorption of this substance through skin and its toxic metabolic product (cyanide). This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for adiponitrile.

The PEL for Ammonium perfluorooctanoate is proposed to be lowered from 0.1 mg/M³ to 0.01 mg/M³ on the basis of an extended half life of this substance in the human blood system (1-2 years) and liver toxicity observed in rats at air concentrations exceeding 1 mg/M³. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for ammonium perfluorooctanoate.

A new PEL for Benzoyl chloride is proposed at 0.2 ppm (1.1 mg/M³) as a ceiling limit. This limit is less than the ceiling limit of 0.5 ppm adopted by the ACGIH in 1995. The proposed limit is based on severe eye irritation at a concentration of 2 ppm, a level not tolerated by human subjects. A lower ceiling limit was recommended by the Committee because they believed that the ACGIH value would not sufficiently account for the variability of worker response to this substance. The ACGIH document describes the severe irritation noted above.

A new PEL for Benzyl acetate is proposed at 10 ppm (61 mg/M³). The proposed limit is intended to control respiratory irritation that has been observed at levels above 50 ppm in human subjects. The proposed limit was adopted by the ACGIH in 1995 and is consistent with the

recommendation of the Committee. The proposed limit is supported by the ACGIH document for benzyl acetate.

The PEL for Bromine is proposed to be changed from 0.1 ppm Time Weighted Average (TWA) to 0.1 ppm (0.7 mg/M³) as a ceiling limit. The proposed limit is intended to control reactions such as choking at 1.7 ppm and is also based on an estimated lethal concentration of 30 ppm for a short exposure. The STEL for bromine is proposed to be deleted, as the limit is a ceiling value, which is lower than the current STEL. This proposed limit differs from the limit adopted by the ACGIH in 1994 in that it is a ceiling rather than an eight hour time weighted average. Several members of the Committee felt that exposure to this substance should be regulated on the basis of a ceiling limit because of the potential for harmful effects from short exposure, and that these effects might not be controlled by an eight hour average concentration. The proposed limit is consistent with the recommendation of the Committee, and is supported by the ACGIH document, which describes the short-term effects noted above.

The PEL for p-tert-Butyltoluene is proposed to be lowered from 10 ppm to 1 ppm (6.1 mg/M³) based on of neurological toxicity, cardiovascular toxicity, and myelotoxicity at concentrations near the current PEL. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for p-tert-Butyltoluene.

A STEL is proposed to be added for Carbon tetrachloride at 10 ppm (63 mg/M³) based on liver toxicity in rats, and computer modeling predicting exposure effects in humans given the liver toxicity in rats. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for carbon tetrachloride.

The PEL for Water insoluble Cr (VI) compounds is proposed to be lowered from 0.05 mg/M³ to 0.01 mg/M³. This limit is proposed in order to make it consistent with other insoluble Cr (VI) compounds having individual limits such as zinc chromate. The word "Certain" in the current limit is proposed to be deleted, as it will no longer be necessary due to this change. The proposed level was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for chromium.

The PEL for Cobalt is proposed to be lowered from 0.05 mg/M³ to 0.02 mg/M³. The proposed limit is intended to control myocardial effects at levels near the current PEL. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for cobalt.

A reference from the term Diatomaceous earth to Silica-amorphous is proposed to be added to Table AC-1. This is a non-substantive addition intended to assist in locating the exposure limit for diatomaceous earth. The proposed addition was not considered by the Committee.

The PEL for p-Dichlorobenzene is proposed to be lowered from 75 ppm to 10 ppm (60 mg/M³). The proposed limit is intended to control renal toxicity and eye irritation. Renal toxicity has

been observed in rats at 25 ppm. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for p-dichlorobenzene.

A new PEL for 1,4-Dichloro-2-butene is proposed at 0.005 ppm (0.025 mg/M³) based on hematological changes and effects on the epithelium observed in rats. 1,4-dichloro-2-butene has been shown to be mutagenic. A skin designation is also proposed due to the possible significant absorption through the skin as indicated by a dermal LD₅₀ of 0.62 ml/kg in rabbits. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for 1,4-dichloro-2-butene.

The PEL for Diethanolamine is proposed to be lowered from 3 ppm to 0.46 ppm (2 mg/M³) based on growth rate depression at 6 ppm in rats. A skin designation is also proposed to be added based on significant increases in relative organ weights (brain, liver, kidney, and heart) for rats administered dermal doses of diethanolamine relative to control animals. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for diethanolamine.

The PEL for Diethylamine is proposed to be lowered from 10 ppm to 5 ppm (15 mg/M³) as a ceiling limit based on severe skin and eye irritation in laboratory animals and nasal and eye irritation in human subjects at 12 and 25 ppm. A skin notation is also proposed based on a lethal dermal dose of 820 mg/kg in rabbits. The current STEL is deleted, as the proposed limit is a ceiling value, which is lower than the current STEL. This proposed limit differs from the limit adopted by the ACGIH in 1994 in that it is a ceiling rather than an eight hour time weighted average. The proposed limit was recommended by the Committee, which considered this substance in conjunction with two other similar amine compounds, ethylamine and triethylamine. The Committee members felt that the ACGIH document supported a ceiling limit rather than an eight-hour average limit based on human effects observed at levels very near the TLV values.

The PEL for 2-Diethylaminoethanol is proposed to be lowered from 10 ppm to 2 ppm (9.6 mg/M³) on the basis of observed changes in the nasal tissue of rats exposed at 25 ppm. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for 2-Diethylaminoethanol.

A new PEL for Dimethylethoxysilane at 0.5 ppm (2.1 mg/M³) and a STEL of 1.5 ppm (6.4 mg/M³) is proposed based on effects in humans ranging from headache to nausea/vomiting at 2.7 to 6.5 ppm. This limit was adopted by the ACGIH in 1996, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for dimethylethoxysilane.

The PEL for 1,1-Dimethylhydrazine is proposed to be lowered from 0.5 ppm to 0.01 ppm (0.025 mg/M³) on the basis of a slight increase in nasal tumors in rats exposed at 0.05 ppm. 1,1-Dimethylhydrazine was considered by the Committee in conjunction with two other hydrazine

compounds, methylhydrazine and hydrazine, in developing this proposal. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for 1,1-dimethylhydrazine.

The PEL for Diquat is proposed to be changed by adding a respirable fraction of 0.1 mg/M³ based on irritant effects observed in rat lungs. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for diquat.

The PEL for EPN is proposed to be lowered from 0.5 mg/M³ to 0.1 mg/M³. The proposed limit is intended to control the risk of delayed neurotoxic effects such as organic phosphatetriester neuropathy. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for EPN.

The PEL for Ethylamine is proposed to be lowered from 10 ppm to 5 ppm (9.2 mg/M³) as a ceiling limit based on observed severe irritation in laboratory animals and corneal injury in rabbits at 50 ppm. A skin notation is also proposed based on a lethal dermal dose of 390 mg/kg in rabbits. This proposed limit differs from the limit adopted by the ACGIH in 1994 in that it is a ceiling rather than an eight hour time weighted average. The proposed limit was recommended by the Committee, which considered this substance in conjunction with two other similar amine compounds diethylamine and triethylamine. The Committee members felt that the ACGIH document supported a ceiling limit rather than an eight-hour average limit based on human effects observed at levels very near the TLV values.

The PEL for Ethyl chloride is proposed to be lowered from 1000 ppm to 100 ppm (264 mg/M³) based on tumor formation in several laboratory animal species. A skin designation is also proposed to be added based on the absorption characteristics of analogous compounds, ethyl bromide, methyl bromide, and methyl chloride. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for ethyl chloride.

The PEL for Ethylene glycol is proposed to be lowered from 50 ppm to 40 ppm (100 mg/M³) on the basis of respiratory tract irritation in humans at 57 ppm, which were intolerable at 98 ppm. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported the ACGIH document for ethylene glycol.

The current reference from Glass, fibrous or dust (<7µm in diameter) to Particulates not otherwise regulated is proposed to be replaced with a new PEL for Glass, fibrous based on the unit fibers per cubic centimeter. The proposed PEL is 1 fiber per cubic centimeter (1 f/cc). The proposed limit is the result of consideration of a petition from the Victims of Fiberglass, petition file #350.

The Victims of Fiberglass petition did not request that a specific limit value be adopted, but rather that whatever value was adopted be expressed in a unit of fibers per unit volume, as many

of the then current limits in European countries were expressed. During the consideration of the petition several interested parties including the National Insulation Manufacturers Association; California Labor Federation, AFL-CIO; and the Glass, Molders, Pottery, Plastic and Allied Workers took positions which recommended the regulation of airborne glass fiber exposure at 1 f/cc. These positions were not incompatible with the petitioner's request that exposure be regulated on a fibers per unit volume basis and were expressed in a June 6, 1994 letter to Mr. Steven A. Jablonsky (see DOCUMENTS RELIED UPON). The issues raised in the petition were considered by the Committee and the interested parties were invited to participate and make presentations. During the development of this proposal the ACGIH also considered and adopted a TLV for "Synthetic vitreous fibers" which is the same value, 1 f/cc, as the current proposal.

The September 15 and November 7, 1997 Committee minutes summarize the presentations and discussion of the issues related to an exposure limit for glass fibers. The Committee agreed with the exception of one member to recommend a 1 f/cc limit. The proposed limit is based on the recommendation of the Committee. A new footnote (s) referenced by the PEL for "Glass, fibrous" is proposed to be added to Table AC-1. This footnote defines the new exposure limit as an eight hour time weighted average in the unit fibers per cubic centimeter, defines a fiber by its length to diameter ratio and minimum length, and specifies a measurement method for determining airborne concentrations. The footnote is necessary, as this is the first PEL in Table AC-1 to use this unit of measurement. The footnote is also necessary because the value measured can vary significantly with the choice of measurement method used. The measurement method proposed is Method 7400, Issue 2, August 15, 1994 by the National Institute for Occupational Safety and Health. This measurement method is commonly used for measuring airborne fiberglass concentrations and is proposed to be adopted by reference. The current maximum diameter limit, 7 μ m, is replaced by a new maximum diameter limit, 3 μ m. The new diameter limit is stated in footnote (s) and is necessary as Method 7400 excludes fibers with diameters greater than 3 μ m.

The PEL for Glycidol is proposed to be lowered from 25 ppm to 2 ppm (6.1 mg/M³) based on no observed human health effects at levels below 2 ppm and a positive National Toxicology Program animal bioassay. This limit was adopted by the ACGIH in 1996, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for glycidol.

The PEL for Heptachlor is proposed to be lowered from 0.5 mg/M³ to 0.05 mg/M³ to control liver toxicity. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for heptachlor.

A new PEL for Hexachlorobenzene is proposed at 0.025 mg/M³ with a skin designation based on observations of increased incidence of liver cell tumors in laboratory animals given 4 to 6 mg/kg/day. The skin designation is based on reports that the substance can penetrate intact skin in significant quantities. This limit was adopted by the ACGIH in 1994, and is consistent with

the recommendation of the Committee. The proposed limit is supported by the ACGIH document for hexachlorobenzene.

The PEL for Hydrazine is proposed to be lowered from 0.1 ppm to 0.01 ppm (0.013 mg/M³) based on observations of slight increases in nasal tumors in rats at .05 ppm. Hydrazine was considered in conjunction with two other hydrazine compounds, methylhydrazine and 1,1-Dimethylhydrazine, in developing this proposal. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for hydrazine.

The PEL for Hydrogen cyanide is proposed to be changed by making the current STEL a ceiling limit (the value of the limit is unchanged). This change is being proposed to provide a greater margin against acute cyanide poisoning. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for hydrogen cyanide.

The PEL for Manganese and manganese compounds, as Mn is proposed to be lowered from 5 mg/M³ to 0.2 mg/M³ based on neurotoxicity at levels below the current exposure limit. The limit is proposed to be changed from a ceiling value to an eight hour time weighted average due to the long biological half life of this substance, 66 days, and the lack of evidence that the proposed PEL would not control the effects of acute exposure. The PEL for Manganese fume, as Mn and Manganese tetroxide are also proposed to be lowered from 1 mg/M³ to 0.2 mg/M³ on the same basis. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for manganese and its compounds.

The PEL for Mercury and inorganic compounds is proposed to be lowered from 0.05 mg/ M³ and 0.1 mg/M³, respectively, to 0.025 mg/M³ to control reproductive risk and to be consistent with the World Health Organization's recommendation (described in the ACGIH document for mercury) to control biological levels below 50µg/g of creatinine. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for mercury.

The PEL for Methyl hydrazine is proposed to be lowered from 0.2 ppm to 0.01 ppm (0.019 mg/M³) based on observed increase of nasal adenomatous polyps at .05 ppm in rats. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for methyl hydrazine.

A new PEL for Methyl tert-butyl ether; MTBE is proposed at 40 ppm (144 mg/M³) on the basis of observed renal toxicity in rats at 300 ppm. This limit was adopted by the ACGIH in 1996, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for methyl tert-butyl ether.

The PEL for Nitromethane is proposed to be lowered from 100 ppm to 2 ppm (5 mg/M³) on the basis of observed renal toxicity in rats at 300 ppm. This limit was adopted by the ACGIH in

1996, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for nitromethane.

The PEL for Perchloroethylene is proposed to be changed by adding a STEL of 100 ppm (685 mg/M³) to control anesthetic effects of this substance. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for perchloroethylene.

The PEL for Phenyl glycidyl ether is proposed to be lowered from 1 ppm to 0.1 ppm (0.6 mg/M³) based on toxicity observed in rats at 5 ppm. A skin notation is proposed to be added based on reports of sensitization which has been observed in both humans and laboratory animals. This limit was adopted by the ACGIH in 1994, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for phenyl glycidyl ether.

The PEL for Silica, amorphous and Diatomaceous earth is proposed to be changed by adding a respirable fraction limit of 3 mg/M³ to the current total dust limit of 6 mg/M³ based on the presence of crystalline silica as a contaminant in natural diatomaceous earth. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for silica, amorphous - diatomaceous earth.

A new PEL for Sulfometuron methyl is proposed at 3.5 mg/M³ based on no observed effect levels (NOEL) in rats fed the substance at 50 ppm. The lowest NOEL determined in feeding studies (50 ppm) is equivalent to approximately 5 mg/kg/day in the rat. Assuming a 70-kg worker inspiring 10 M³ of air per day and 100% absorption, this would correspond to 35 mg/M³. The proposed limit is slightly lower than the 5.0 mg/M³ level adopted by the ACGIH, and was recommended by the Committee as a level which more accurately represents the rationale presented in the ACGIH document for sulfometuron methyl.

A new PEL for Terephthalic acid is proposed at 10 mg/M³ based on relatively low toxicity and that control at the "Particulates not otherwise regulated" level is appropriate. The only evidence of toxicity indicated in animal studies is the development of bladder calculi at high doses. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for terephthalic acid.

The PEL for Tetranitromethane is proposed to be lowered from 1 ppm to 0.005 ppm (0.04 mg/M³) on the basis of pulmonary carcinomas observed in rats and mice at levels of 2 ppm and 0.5 ppm respectively. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for tetranitromethane.

The PEL for Trichloroethylene is proposed to be changed by lowering the current STEL of 200 ppm to 100 ppm (537 mg/M³) due to the anesthetic effects of this substance. This limit was

adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for trichloroethylene.

A new PEL for Triethanolamine is proposed at 5 mg/M³ based on observations of contact dermatitis, skin, and eye irritation. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for triethanolamine.

The PEL for Triethylamine is proposed to be lowered from 10 ppm to 1 ppm (4.1 mg/M³) as a ceiling limit based on visual disturbances reported by exposed workers. The disturbances include foggy vision, blue haze, and halo phenomena at concentrations ranging from 3 to 10 ppm. A skin notation is also added based on a lethal dermal dose of 420 mg/kg in rabbits. This proposed limit differs from the limit adopted by the ACGIH in 1994 in that it is a ceiling rather than an eight hour time weighted average. The current STEL is proposed to be deleted, as the proposed ceiling limit is a lower value. The proposed limit was recommended by the Committee, which considered this substance in conjunction with two other similar amine compounds, diethylamine and ethylamine. The Committee members felt that the ACGIH document supported a ceiling limit rather than an eight-hour average limit based on the human effects (described above) at levels very near the TLV values.

The PEL for Trimellitic anhydride is proposed to be changed by adding a ceiling designation to the current PEL. The change is intended to control allergic sensitization that has been observed in plants where the material was present, but which did not recur when levels were kept between .01 and .18 mg/M³. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for trimellitic anhydride.

The PEL for Vinyl acetate is proposed to be changed by lowering the current STEL of 20 ppm to 15 ppm (45 mg/M³) to control eye irritation. This limit was adopted by the ACGIH in 1993, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH document for vinyl acetate.

The PELs for 4-Vinyl cyclohexene and Vinyl cyclohexene dioxide are proposed to be changed by adding a skin designation to 4-Vinyl cyclohexene and reducing the PEL for Vinyl cyclohexene dioxide to 0.1 ppm (0.57 mg/M³) based on a dermal LD₅₀ value of 20ml/kg in rabbits and the carcinogenic potential of these compounds. This limit was adopted by the ACGIH in 1995, and is consistent with the recommendation of the Committee. The proposed limit is supported by the ACGIH documents for 4-vinyl cyclohexene and vinyl cyclohexene dioxide.

DOCUMENTS RELIED UPON

1. "1993-1994 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices", American Conference of Governmental Industrial Hygienists, © 1993, ISBN: 1-882417-03-8
2. "1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices", American Conference of Governmental Industrial Hygienists, © 1994, ISBN: 1-882417-06-2
3. "1995-1996 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices", American Conference of Governmental Industrial Hygienists, © 1995, ISBN: 1-882417-11-9
4. "1996 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices", American Conference of Governmental Industrial Hygienists, © 1996, ISBN: 1-882417-13-5
5. ACGIH Documentation for TLVs printed from "TLVs and Occupational Exposure values-1996", © 1996 (a compact disk) for the following substances:

Acetaldehyde
Acetone cyanohydrin
Acetophenone
Adipic Acid
Adiponitrile
Ammonium perfluorooctanoate
Benzoyl chloride
Benzyl acetate
Bromine
p-tert-Butyltoluene
Carbon tetrachloride
Chromium
Cobalt, and inorganic compounds
p-Dichlorobenzene
1,4-Dichloro-2-butene
Diethanolamine
Diethylamine
2-Diethylaminoethanol
Dimethylethoxysilane
1,1 -Dimethylhydrazine
Diquat
EPN
Ethylamine
Ethyl chloride
Ethylene glycol
Glycidol

Heptachlor
Hexachlorobenzene
Hydrazine
Hydrogen cyanide
Manganese, and inorganic compounds
Mercury
Methyl hydrazine
Methyl tert-butyl ether
Nitromethane
Perchloroethylene
Phenyl glycidyl ether
Silica—Amorphous
Sulfometuron methyl
Terephthalic acid
Tetranitromethane
Trichloroethylene
Triethanolamine
Triethylamine
Trimellitic anhydride
Vinyl acetate
4-Vinyl cyclohexene
Vinyl cyclohexene dioxide

6. Letter to Steven Jablonsky from Kenneth D. Mentzer, Joseph Mitchell, Sr., John F. Henning; June 6, 1994.

7. Petition File No. 350, Victims of Fiberglass, dated April 21, 1994, and the Board's Petition Decision, dated September 22, 1994.

8. Petition File No. 354, Glass, Molders, Pottery, Plastic and Allied Workers International Union, the California Labor Federation, AFL-CIO, and the North American Insulation Manufacturers Association, dated August 16, 1994, and the Board's Petition Decision, dated December 15, 1994.

These documents are available for review during normal business hours at the Standards Board Office located at 2520 Venture Oaks, Suite 350, Sacramento, California.

DOCUMENTS INCORPORATED BY REFERENCE

- The National Institute for Occupational Safety and Health (NIOSH), Method 7400, Issue 2, August 15, 1994.

This document is too cumbersome to publish in Title 8. Therefore, it is proposed to incorporate the document by reference. Copies of this document are available for review during normal

business hours at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

IDENTIFIED ALTERNATIVES THAT WOULD LESSEN ADVERSE IMPACT ON SMALL BUSINESSES

No adverse impact on small businesses is anticipated from the implementation of the proposed amendments. Therefore, no alternatives which would lessen the impact on small businesses have been identified.

SPECIFIC TECHNOLOGY OR EQUIPMENT

This proposal will mandate the use of specific technologies and equipment. The analytical method (Method 7400) referenced by the exposure limit for Glass, fibrous requires specific equipment. Examples of these are a conductive cowl sampling cassette, a microscope with a specified numerical aperture, power, and phase contrast function, a particular graticule to be used with the microscope as an optical gauge to measure the size of fibers. Method 7400 has been validated with the assumption that it will be used with the above equipment. The specification of accuracy and precision for the method is only valid if this equipment is used. Substitution of equipment not meeting these specifications would have unknown effects on the results of the analysis performed and could reasonably be expected to produce systematic biases in the results obtained. Further, much of the research upon which the proposed exposure limit is based used Method 7400. The Board is not currently aware of any other validated methods which can give results comparable and consistent with this method. The Board would consider modifying the requirements for this mandated equipment if other validated and consistent methods are developed or otherwise brought to the attention of the Board.

COST ESTIMATES OF PROPOSED ACTION

The subject regulation is a revision of an existing regulation which specifies requirements for airborne contaminants. The primary users of these substances are the private industrial and chemical sectors. Those rare public sector workplaces where these substances are used should already be in compliance with the existing regulation, and the revised regulation should not necessitate any additional cost to remain in compliance. Based on this information, the additional expenditures for local and state governments to comply with the revised regulation are estimated to be none. Similarly, the large industrial concerns have professional internal health and safety staff who are aware of the recommendations for exposure limits published by non-governmental organizations such as the ACGIH. These companies normally control exposure to these limits as a matter of policy and to benefit employee relations. Based on this, the additional expenditures for these entities to comply with the revised regulation is estimated to be none.

Costs or Savings to State Agencies

No costs or savings to state agencies will result as a consequence of the proposed action.

Impact on Housing Costs

The proposal will not significantly affect housing costs.

Impact on Businesses

This proposal will not result in a significant adverse economic impact on businesses, including the ability of California businesses to compete with businesses in other states.

Cost Impact on Private Persons or Entities

The proposal will not require private persons or entities to incur additional costs in complying with the proposal.

Costs or Savings in Federal Funding to the State

The proposal will not result in costs or savings in federal funding to the state.

Costs or Savings to Local Agencies or School Districts Required to be Reimbursed

No costs to local agencies or school districts are required to be reimbursed. See explanation under “Determination of Mandate.”

Other Nondiscretionary Costs or Savings Imposed on Local Agencies

This proposal does not impose nondiscretionary costs or savings on local agencies.

DETERMINATION OF MANDATE

The Occupational Safety and Health Standards Board has determined that the proposed regulations do not impose a local mandate. Reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the proposed amendments will not require local agencies or school districts to incur additional costs in complying with the proposal. Furthermore, these regulations do not constitute a “new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.”

The California Supreme Court has established that a “program” within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

These proposed regulations do not require local agencies to carry out the governmental function of providing services to the public. Rather, the regulations require local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, these proposed regulations do not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

These proposed regulations do not impose unique requirements on local governments. All employers - state, local, and private - will be required to comply with the prescribed standards.

PLAIN ENGLISH STATEMENT

It has been determined that the proposal may affect small business and the Board has determined that it is not feasible to draft the proposal in plain English due to the technical nature of the regulations. However, a noncontrolling plain English summary of the proposal is available from the agency contact persons named in this Notice.

ASSESSMENT

The adoption of the proposed amendments to these regulations will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS

No alternatives considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.