

State of California  
AIR RESOURCES BOARD

Resolution 86-5

January 24, 1986

Agenda Item No.: 86-1-3

WHEREAS, Sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the "Board") to do such acts and to adopt such regulations as may be necessary for the proper execution of the powers and duties granted to, and imposed upon, the Board by law;

WHEREAS, Chapter 3.5 (commencing with Section 39650) of Part 2 of Division 26 of the Health and Safety Code establishes procedures for the identification of toxic air contaminants by the Board;

WHEREAS, Section 39655 of the Health and Safety Code defines a "toxic air contaminant" as an air pollutant which may cause or contribute to an increase mortality or an increase in serious illness, or which may pose a present or potential hazard to human health;

WHEREAS, Section 39662 of the Health and Safety Code directs the Board to list, by regulation, substances determined to be toxic air contaminants, and to specify for each substance listed a threshold exposure level, if any, below which no significant adverse health effects are anticipated;

WHEREAS, hexavalent chromium is emitted from certain industrial processes such as chromium plating operations and hexavalent chromium treated cooling towers, and has been measured in the atmosphere;

WHEREAS, pursuant to the request of the Board, the Department of Health Services (DHS) evaluated the health effects of chromium in accordance with Section 39660 of the Health and Safety Code;

WHEREAS, DHS concluded in its evaluation that hexavalent chromium is an animal and potential human carcinogen and insufficient evidence exists to decide whether trivalent chromium is a potential human carcinogen; hexavalent chromium should be treated as a substance without a carcinogenic threshold; health effects other than cancer are not expected to occur at existing ambient levels with the possible exception of adverse reproductive effects, where the experimental data are inadequate to assess potential human reproductive effects; and the maximum excess lifetime cancer risk from hexavalent chromium exposure is estimated to range from 12 to 146 cases per million people exposed per nanogram per cubic meter;

WHEREAS, for the reasons set forth in its evaluation, DHS has concluded that, in the absence of strong positive evidence that carcinogenic substances act only through mechanisms which ought to have a threshold, these substances should be treated as acting without a threshold, and DHS has determined that no positive evidence of a carcinogenic threshold exists with respect to hexavalent chromium;

WHEREAS, upon receipt of the DHS evaluation, staff of the Board prepared a report including and in consideration of the DHS evaluation and recommendations and in the form required by Section 39661 of the Health and Safety Code and, in accordance with the provisions of that section, made the report available to the public and submitted it for review to the Scientific Review Panel (SRP) established pursuant to Section 39670 of the Health and Safety Code;

WHEREAS, in accordance with Section 39661 of the Health and Safety Code, the SRP reviewed the staff report, including the scientific procedures and methods used to support the data in the report, the data itself, and the conclusions and assessments on which the report was based, considered the public comments received regarding the report, and, on November 21, 1985 submitted its written findings to the Board;

WHEREAS, the SRP found to be prudent interpretations of the available evidence the propositions that:

In epidemiologic studies where the oxidation state of chromium was unknown, chromium, either in the hexavalent (Cr(VI)) or trivalent (Cr(III)) state or both, was shown to be a human carcinogen.

In other studies conducted in laboratory animals, chromium in the hexavalent state Cr(VI) was shown to be carcinogenic. Accordingly, hexavalent chromium Cr(VI) should be considered a potential carcinogen in humans.

An exposure level below which no significant adverse health effects are anticipated could not be identified. Based on our knowledge of pharmacokinetics, metabolism and mode of action of chemical carcinogens like chromium, there is no scientific basis for determining an exposure level below which carcinogenic effects would not have some probability of occurring.

Adverse health effects other than cancer are not anticipated at current ambient chromium exposure levels.

WHEREAS, the SRP found the staff report to be without serious deficiency, and included in its findings the statement that it agreed that hexavalent chromium should be listed by the Air Resources Board as a toxic air contaminant, but was unable to recommend an exposure level below which carcinogenic effects would not have some probability of occurring;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, in consideration of the staff report, including DHS' evaluation and recommendations, the available evidence, the findings of the SRP, and the written comments and public testimony it has received, the Board finds that:

Hexavalent chromium is an animal carcinogen and should be considered a potential human carcinogen;

Health effects other than cancer are not anticipated at current ambient hexavalent chromium exposure levels;

There is not sufficient available scientific evidence to support the identification of a threshold exposure level for hexavalent chromium; and

Hexavalent chromium is an air pollutant which, because of its carcinogenicity, may cause and contribute to an increase in mortality and an increase in serious illness, and poses a hazard to human health; and

WHEREAS, the Board has determined, pursuant to the requirements of the California Environmental Quality Act and Board regulations, that this regulatory action will have no significant adverse impact on the environment.

NOW, THEREFORE BE IT RESOLVED, that the Board approves the proposed regulatory amendments to Section 93000, Title 17, California Administrative Code, as set forth in Attachment A.

I hereby certify that the above is a true and correct copy of Resolution 86-5, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Harold Holmes, Board Secretary

Amend Title 17, California Administrative Code, Section 93000 to read as follows:

93000. Substances Identified As Toxic Air Contaminants. Each substance identified in this section has been determined by the state board to be a toxic air contaminant as defined in Health and Safety Code Section 39655. If the state board has found there to be a threshold exposure level below which no significant adverse health effects are anticipated from exposure to the identified substance, that level is specified as the threshold determination. If the board has found there to be no threshold exposure level below which no significant adverse health effects are anticipated from exposure to the identified substance, determination of "no threshold" is specified. If the board has found that there is not sufficient available scientific evidence to support the identification of a threshold exposure level, the "Threshold" column specifies "None identified."

<u>Substance</u>	<u>Threshold</u>
Benzene (C <sub>6</sub> H <sub>6</sub> )	None identified
Ethylene Dibromide* (BrCH <sub>2</sub> CH <sub>2</sub> Br; 1,2-dibromoethane)	None identified
Ethylene Dichloride* (ClCH <sub>2</sub> CH <sub>2</sub> Cl; 1,2-dichloroethane)	None identified
<u>Hexavalent Chromium (Cr(VI))</u>	<u>None identified</u>

NOTE: Authority cited: Sections 39600, 39601 and 39662, Health and Safety Code. Reference: Sections 39650, 39660, 39661 and 39662, Health and Safety Code.

---

\* Note: Compounds identified by an asterisk have been identified as toxic air contaminants by the Air Resources Board but not yet approved by the Office of Administrative Law.

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider the Adoption of a Regulatory Amendment  
Identifying Hexavalent Chromium as a Toxic Air Contaminant

Agenda Item Nos.: 86-1-3

Public Hearing Dates: January 23, 1986

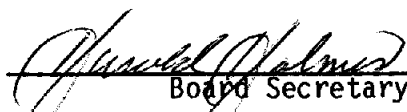
Response Date: January 23, 1986

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any significant environmental  
issues pertaining to this item. The staff report identified no  
adverse environmental effects.

Response: N/A

CERTIFIED:

  
Board Secretary

Date:

09-11-86

# Memorandum

To : Gordon Van Vleck  
Secretary  
Resources Agency

Date : August 27, 1986

Subject: Filing of Notice  
of Decisions of  
the Air Resources  
Board

*Harold Holmes*  
Harold Holmes  
Board Secretary  
From : Air Resources Board

Pursuant to Title 17, Section 60007 (b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decisions and response to environmental comments raised during the comment period.

## ATTACHMENTS

- 85-77
- 85-78
- 85-80
- 86-4
- 86-25
- 86-43
- 86-44
- 86-45