



Recommendation of the Council on
Measures to Reduce all Man-Made
Emissions of Mercury to the
Environment

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Date(s)

Adopted on 18/09/1973

Background Information

The Recommendation on Measures to Reduce all Man-made Emissions of Mercury to the Environment was adopted by the OECD Council on 18 September 1973 on the proposal of the Environment Committee. Seeking to address the use and hazards of mercury, the instrument recommends that Adherents adopt measures to reduce all man-made emissions of mercury to the environment to the lowest possible levels.

THE COUNCIL,

HAVING REGARD to Article 5 b) of the Convention on the Organisation for Economic Co-operation and Development of 14 December 1960;

HAVING REGARD to the Recommendation of the Council of 26 May 1972 on Guiding Principles concerning International Economic Aspects of Environmental Policies [C(72)128];

CONSIDERING the use and hazards of mercury, as well as the possibilities for emission control and the contingent economic effects thereof;

On the proposal of the Environment Committee;

I. RECOMMENDS that the Governments of Member countries should adopt measures:

a) To reduce all man-made emissions of mercury to the environment to the lowest possible levels, with particular attention to:

- The elimination of alkyl-mercury compounds from all uses that allow this material to reach the environment in any way;
- The maximum possible reduction of mercury in discharges from all industrial plants using or manufacturing products containing mercury chemicals;

b) For which immediate targets should be:

- The elimination of alkyl-mercury compounds in agriculture;
- The elimination of an mercury compounds from use in the pulp and paper industry;
- The maximum possible reduction in the discharges of mercury from mercury-cell chloralkali plants.

II. INVITES the Governments of Member countries:

a) To inform the Organisation of the measures taken pursuant to this Recommendation;

b) As from 1 January 1974, to proceed annually to an exchange of information, wherever possible, within the Environment Committee, on the following subjects:

- The quantity of alkyl-mercury used in agriculture and horticulture;
- The quantity of mercury used by the pulp and paper industry;
- The quantity of mercury discharged by the chloralkali industry in air and water and remaining in the solid wastes rejected by that same industry;
- The total national net consumption of mercury.

ANNEX

TECHNICAL NOTE AND CONCLUSIONS CONCERNING MERCURY

Nature of the Mercury Problem

1. Mercury and its compounds occur naturally in the environment but the use made of these by man can lead to high local concentrations which represent a serious risk to health. According to present knowledge, the most immediate hazard to man is created by methyl-mercury (an alkyl-mercury) and hence use of mercury in this form is of particular concern. However, in addition, it has been found that in adequate ecosystems other forms of mercury, including inorganic mercury, can be converted into methyl-mercury which can be absorbed and concentrated along the food chain. Although the efficiency of this process cannot at the present time be specified in advance, it evidently can occur in ways which are potentially harmful to higher organisms, including man, especially if this absorption and concentration are continued over a long period of time. This slower but more insidious effect gives rise to concern with regard to fresh water and marine products, and with regard to the discharge of mercury from industrial operations. Questions of mercury use and the toxicity of mercury in the environment have been discussed in reports on "The Biological Impact of Mercury" [NR/ENV/72.55] and "Control of Mercury Use and Emission, the Experience of Japan, Sweden, Canada and the United States" [NR/ENV/72.41].

International Agreements Relevant to the Mercury Problem

2. *FAO/WHO*

International actions relevant to control of the mercury problem fall into two categories. First, the Joint FAO/WHO Expert Committee on Food Additives has under continuous review the problem of the human intake of mercury compounds occurring in food. In 1967, this Committee recommended that "any use of mercury compounds that increases the level of mercury in food should be strongly discouraged". The report of the 16th meeting of this Expert Committee (April 1972) has recently been issued (WHO Technical Report Series, No. 505). It recommends a provisional tolerable weekly intake of 0.3 milligrams total mercury per person, of which no more than 0.2 milligrams should be present as methyl-mercury (expressed as weight of mercury).

Conventions on Dumping at Sea

3. Secondly, international action is developing rapidly with regard to questions of marine pollution and the dumping of chemicals at sea. Both the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo Convention 1972), and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter at sea (which is to be open for signature during December 1973), expressly prohibit the dumping of mercury and mercury compounds at sea. A Technical Memorandum of the latter Convention states that on the advice of a Technical Working Party, wastes containing small quantities of inorganic compounds of mercury, solidified by integration into concrete may be dumped only in depths of not less than 3 500 metres, in conditions which would cause no harm to the marine environment and its living resources. This method of disposal can be used for not longer than five years after the Convention comes into effect.

United Nations Conference on the Human Environment

4. In a more general sense the United Nations Stockholm Conference adopted for transmission to the General Assembly certain recommendations which are relevant, namely:

- a) That Governments use the best practicable means available to minimise the release to the environment of dangerous or toxic substances, especially if they are persistent substances such as heavy metals and organochlorine compounds, until it has been demonstrated that their release will not give rise to unacceptable risks, or unless their use is essential to human health or food production, in which case appropriate control measures should be applied;

- b) That the Secretary-General of the United Nations, drawing on the resources of the entire United Nations system and with active support of Governments and appropriate scientific and other international bodies, increase the capability of the United Nations system to provide awareness and advance warning of deleterious effects to human health and well-being from man-made pollutants.

Conclusions of the Investigation by the Environment Committee's Sector Group on the Unintended Occurrence of Chemicals in the Environment

5. The Working Group of Experts, appointed by Canada, Japan, Sweden and the United States to report on measures already taken by their Governments to reduce mercury emissions into the environment and the effectiveness, costs and justifications for these measures have, in their Report, given a summary of the common aspects of the policies adopted by their countries. From this it is clear that the dominant issue in relation to mercury is the protection of human health. The avoidance of ecological disturbance is also a major concern. In relation to the human health risk, Japanese experience emphasizes the importance of taking action before damage to health and welfare has occurred.

6. The regulatory approach to the problem has been focussed on prohibiting, restricting and preventing the introduction of mercury into the environment in order to limit, as far as practicable, its uptake in biological species and humans. The remedial measures taken have certain industrial and trade implications, but it would not appear that the establishment of stringent control with regard to the use of mercury compounds introduces major economic disturbances. However, failure to follow compatible policies in different Member countries could well lead to unnecessary problems in the industries directly concerned.

7. It is also important to note the extent to which Canada, Japan, Sweden and the United States have been able to take action against mercury use and discharge under existing laws, without the need to seek special authority. The compounds of mercury, falling as they do into the category of toxic materials, have been controlled variously under laws dealing with the use of pesticides, with waste discharge through sewers, waste discharge directly to receiving waters, food and drug laws, fisheries laws, as well as more recent legislation in some countries designed to enable administrative authorities to take action more widely on environmental pollution.

8. Finally, with regard to the longer term, the Working Group Report has drawn attention to the fact that further investigation of mercury and its compounds is necessary in several areas. These include the emission of mercury into the atmosphere from fossil fuel combustion, the emission to the environment of mercury used in electrical goods, the sub-clinical effects of mercury poisoning in man and the delayed onset of mercury poisoning.

9. Concerning the need for and feasibility of control action, certain detailed conclusions can be drawn from the situation as described:

- a) In Canada, Japan, Sweden and the United States, mercury contamination of the environment, and risk of its accumulation through the food chain, were found as soon as measurements were made;
- b) The sources and the priorities with regard to control of emissions vary widely from country to country;
- c) Effective methods for the control of mercury emissions to the environment have been established in an area where the use of mercury has created identified problems of significant magnitude;
- d) Where such problems have been identified as involving an imminent health hazard, counter-measures have been considered mandatory and independent of short-term economic costs;
- e) In particular, the following controls have proved practical:

- i) Alkyl-mercury compounds used in agriculture -- replacement by alternative compounds¹;
- ii) Mercury compounds used in the pulp and paper industry -- replacement by alternative compounds or the use of alternative processes which do not require slimicides;
- iii) Mercury metal used in the mercury cell chloralkali industry -- reduction in mercury content of plant effluents;
- iv) Inorganic mercury catalysts used in the manufacture of chemicals from acetylene -- reduction in mercury content of plant effluents, or the use of alternative processes.

¹ The use of alkyl-mercury compounds for rice seed treatment has hitherto been permitted in Japan. However, administrative guidance is at present extended by the Government to ensure suspension of the production of alkyl-mercury compounds with a view to discouraging their use.

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