OECD RISK MANAGEMENT ACTIVITIES WITH RESPECT TO LEAD IN GASOLINE

OECD's work on lead began shortly after Member governments[1] approved a Decision-Recommendation on the Co-operative Investigation and Risk Reduction of Existing Chemicals in 1990. This Act, which called on Member countries to establish or strengthen national programmes aimed at reducing risk and to take concerted action where appropriate, initiated the OECD Risk Management Programme. A pilot phase of this Programme began with the selection of five chemicals of concern in Member countries: **lead**, cadmium, mercury, methylene chloride and brominated flame retardants. The work on each of these substances followed a three-step process. First, background information was collected to determine the current state of affairs. Next, based on this information, policy proposals were developed on whether OECD should take concerted action to further reduce risk posed by these substances, and if so, how. Finally, if further action was agreed, the substance proceeded to the third step which included the development of an action programme, implementation by Member countries and monitoring of results

From the beginning, the work on lead has focused on priority products/uses of concern (e.g., *lead in gasoline*, lead solder in food packaging, lead in paint, lead-containing plastics, food containers containing lead, and lead shot and fishing sinkers). As discussed below, Member countries, industry and NGOs were active partners in every step in the process from collecting and analysing information on the priority products and uses to proposing risk management approaches where necessary.

First Step--Developing a "Snapshot" of Current Knowledge

An OECD Monograph on lead was published in 1993 laying out basic information on: (i) the commercial life-cycle; (ii) the environmental life-cycle; (iii) linkages between sources and targets; (iv) each Member country's perception of the risk posed by lead; and (v) risk reduction measures in place and their effectiveness. *Annex 1* contains a table from this Monograph which lists actions taken by Member countries as of 1993 with respect to lead in gasoline.

Second Step--"Framing" the Issues of Concern

Based on the information contained in the monograph, OECD Member countries agreed that lead could be a good candidate for further risk management action, but additional information was needed, particularly concerning: (i) routes of exposure in the priority products and uses; (ii) how to reduce such exposure; (iii) international dimensions of the problem (trade and transboundary pollution); (iv) ramifications of any action; and (v) how industry and NGOs could assist in this effort.

To fill in these data gaps, a technical workshop was held in Toronto from 9-11 February, 1994. Over 170 experts from diverse fields attended this workshop and discussed how man or the environment is exposed to lead-based products (such as lead in gasoline), ways to reduce this exposure, and the costs and implications of any exposure reduction scenario. A separate expert group was established for each product of concern . The Lead Based Gasoline Additive group created a short report which described the product, routes of exposure, international dimension, possible solutions, potential implications, and the domestic market share of unleaded gasoline in OECD countries. (A copy of the report is attached as *Annex 2*.)

[1] Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, New Zealand, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States

Following the conclusions of the workshop, a working group meeting, comprised of policy experts from Member countries met to discuss the technical conclusions from the workshop and develop a proposal for further work. In its conclusion, the *Working Group acknowledged the desirability of phasing out the use of lead in automobile gasoline.* It went on to identify action items and considerations with regard to any decision to phase out leaded gasoline:

- *Decisions regarding the phase out of leaded gas should be taken in a national context [and respecting possible international/trans-boundary considerations].*
- *Where a decision has been taken to phase out lead in gas, the phase out should be done in an orderly manner so as to avoid creation of other problems (environmental, economic, social).*
- *The development of vehicle fleets should not preclude the future use of lead-free gas.*
- *Countries should share practical experiences with phasing out the use of lead in gasoline.*
- *An education program should be established for Member countries and non-Member countries (e.g., consumer education, technology transfer)*
- *Alternative scenarios should be fully analysed to avoid the creation of health and environmental problems.*

Third Step--Taking Action

Following the Toronto workshop/working group meeting, OECD Member countries engaged in a lengthy discussion on how to proceed. In early 1996, the Environment Ministers of the 26 OECD countries and the Environment Commissioner of the European Communities adopted a Declaration, reinforced by an OECD Council Resolution on implementing steps, which address all of the major sources of lead exposure. *Ministers committed their countries to strengthen, where appropriate, efforts to reduce risk from these exposures with emphasis on, among other things, the phasing-down of the use of lead in gasoline except where needed for essential or specialised uses for which there are no practical, viable alternatives*. Governments also agreed to work in partnership with their lead producing industries to develop voluntary programmes of action which would be implemented with national authorities in OECD and interested non-OECD countries. Other international organisations were invited to take the Declaration into consideration as they develop or revise goals, guidelines, and associated codes of practice for protection of human health and the environment.

Today

Most of the OECD countries have either completed a phase-out programme on lead or are well on their way; the Ministerial Declaration will continue this process. Progress by Member countries toward meeting this and the other commitments will be reviewed no later than February 1999. Although considerable progress has been made within Member countries, the Declaration also recognised the importance of extending co-operative efforts to share information with non-Member countries on environmentally sound and economically viable technologies in order to reduce risks from exposure to lead. The OECD and its Member countries are working with other international organisations and industry to provide expertise and information to non-Member countries on ways to reduce exposure to lead. As an example, OECD is co-operating with the International Lead Management Center to provide assistance to UNIDO on its development of a user guide to managing risks posed by lead exposures. By these initiatives and expanded use of OECD's Internet home page [http://www.oecd.org/ehs], efforts are being made to fully exploit the wealth of Member country experience and data on lead in gasoline.

Annex 1

ACTIONS OF OECD MEMBER COUNTRIES WITH RESPECT TO LEAD IN GASOLINE

(From OECD Risk Reduction Monograph No. 1: Lead; Background and National Experiences with Reducing Risk. [OCDE/GD(93)67]; pp 247-8)

PRODUCTS Source: Gasoline	
Country	**Actions**
Australia	Concentrations of lead in leaded gas varies from 0.3 g/l in some city areas to 0.84 g/l in country areas; unleaded gas limited to 0.013 g/l; all cars manufactured or imported after January 1, 1986 are required to use unleaded gasoline.
Austria	Not more than 0.013 g/l lead in fuel within the year 1993.
Belgium	Maximum allowable concentration of lead in gasoline 0.15 g/l
Canada	Maximum concentration of lead in gasoline used in engines that require a small amount of lead to avoid premature failure (i.e. those used in farming, marine and commercial transportation equipment) 0.026 g/l (quarterly average) and 0.030 g/l (maximum); gasoline used for all other purposes is limited to 0.005 g/l (Extract, Canada Gazette, Part I, 7/15/89); the use of leaded gasoline was phased out in December of 1990.
Denmark	Maximum allowable concentration of lead in gasoline 0.15 g/l
France	The maximum lead concentration in petrol, as of June 1991, is 0.15 g/l; in an effort to increase the use of lead-free petrol, its tax has been partially reduced since July of 1989.
Germany	Maximum concentration of lead in leaded gasoline 0.15 g/l; unleaded 0.013 g/l; tax advantages for lead-free gas and cars that run on lead-free gas.
Greece	Maximum allowable concentration of lead in gasoline 0.40 g/l; in Athens, 0.15 g/l
Iceland	no data available
Ireland	Maximum level of lead in petroleum products is 0.15 g/l
Italy	Maximum allowable lead concentration in gasoline 0.15 g/l (May 1982)
Japan	Lead compounds are not used in gasoline; the Japanese Industrial Standards limit the lead content in petroleum.
Luxembourg	Maximum allowable concentration of lead in leaded gasoline; 0.15 g/l, unleaded: 0.013 g/l.
Netherlands	Maximum allowable concentration of lead in leaded gasoline; 0.15 g/l; since 1986 there has been an extra-tax on leaded gasoline
New Zealand	no data available
Norway	Lead in fuel limited to 0.013 g/l for unleaded and 0.15 g/l for leaded; there is also an environmental tax depending on the lead content.
Portugal	Maximum allowable concentration of lead in leaded gasoline; 0.40 g/l, since January 1986.
Spain	Maximum allowable concentration of lead in leaded gasoline; 0.40 g/l as of 1986.

PRODUCTS Source: Gasoline	
Country	**Actions**
Sweden	Unleaded petrol must not contain more than 0.013 g/l of lead; leaded petrol must not contain more than 0.15 g/l of lead; tax on leaded gas as of 7/91 proposal being considered to revise trade requirements for gasoline and autos.
Switzerland	Unleaded petrol: 13 mg/l; leaded petrol 150 mg/l; aircraft petrol: 560 mg/l; heating fuel, Extra Leicht: 1 mg/kg, heating fuel, Mittel: 5 mg/kg, heating fuel, Schwer: 5 mg/kg.
Turkey	no data available
United Kingdom	Maximum concentrations of lead in petrol is limited to 0.15 g/l; unleaded petrol is defined as having a maximum lead concentration of 0.013 g/l; beginning in 1990, all new vehicles must be capable of running on unleaded gasoline.
United States	In 1986, the EPA set the maximum allowable concentration of lead in leaded gasoline to 0.026 g/l; in addition, all new automobiles are required to operate on unleaded gasoline (1988); maximum lead content of unleaded gas 0.01 g/l.
European Community	Lead in leaded petrol is limited to 0.15 g/l; unleaded petrol defined as having no greater than 0.013 g/l of lead.
Mexico	In 1990, an unleaded gasoline with the same specifications as the most frequently purchased US gas was introduced; as of 1992, the lead concentration in regular gasoline was lowered to 0.4 g/l; in 1988, the automobile industry was committed by the government to introduce catalytic converters on new models