

THIRTEENTH CONGRESS OF THE)
REPUBLIC OF THE PHILIPPINES)
Second Regular Session)

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SENATE

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S. B. NO. 2074

Introduced by SENATOR EDGARDO J. ANGARA

EXPLANATORY NOTE

Mercury (*Hg*) is a persistent, bio-accumulative toxin that poses significant risk to human health, wildlife and the environment. It is the only metal that remains liquid at room temperature. It is so dangerous that it just takes 1/70th of a teaspoon to contaminate a 10.11 hectare lake to the point where fishes in that lake are no longer safe for human consumption; *Hg* content in one fever thermometer alone is enough to contaminate more than 200 million gallons of water.

At high levels, metallic mercury can cause serious damage to the nervous system in developing fetuses, even death, in exposed adults. Even at low levels, metallic mercury can cause health problems such as mild tremors, changes in vision, hearing, and personality, insomnia, weakness, difficulty with memory, headache, irritability, and nervousness.

People throw away products containing mercury, unaware of its dangers. The United Nations Environment Program (UNEP's) "Global Mercury Assessment" (2002) found that mercury is now all over the world at levels that adversely affect humans and wildlife. The problem has become global as regions with no significant mercury releases of their own, such as the arctic, are still affected due to transcontinental transport of mercury. Coal-fired power stations and waste incinerators now account for around 1,500 tons or 70 percent of new, quantified manmade mercury pollution, releasing an estimated 400-500 tons of mercury annually to the air, soil, and waterways.

In the Philippines, there are two (2) main sources of *Hg* pollution, mined mercury deposits and use of mercury in gold extraction by the crude method of amalgamation. Exposure to mercury depends on its form, with mercury vapor and methyl mercury being the most likely forms since they are almost completely absorbed by the body. Manmade sources of mercury come in the form of airborne particles released when coal, oil or natural gas is burned as fuel, or waste containing mercury is burned. The airborne mercury can then fall to the ground through rain contaminating soil or bodies of water. Lakes and rivers can also be contaminated through industrial waste or municipal sewage. Once mercury enters water --- directly or through deposition in air --- biological processes transform it into methyl mercury, a highly toxic form of mercury that *bioaccumulates* in fish. **When a substance bioaccumulates, its concentration increases as it moves to the food chain.**

The UNEP report also shows levels in fish exceeding a risk-based threshold (based upon Japan's and U.S. recommendations) in quite a few developing countries, including Cote d'Ivoire, Ghana, India, Mauritius, **Philippines**, Slovak Republic, and Thailand as well as Japan, Korea, and Sweden.

Despite the risks, mercury continues to be used in a variety of products and processes all over the world including small-scale mining of gold and silver; chlorine and caustic soda production; manometers for measurement and control; thermometers; electrical switches; fluorescent lamps; and dental amalgam fillings.

I have proposed a three-pronged plan to address the global issue that is *Hg* pollution: switch of mercury-using products and processes to non-mercury alternatives as there are indeed, less hazardous alternatives for most mercury-containing items; control of mercury release; and mercury waste management. Considering the effects of mercury, it is high-time that "*measures of vigilance*" in the introduction of mercury to the environment as are put forth in this measure be undertaken, and to which I urge my esteemed colleagues in the House of the Senate to support.


EDGARDO J. ANGARA
Senator

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**AN ACT PROVIDING MECHANISMS FOR THE REDUCTION OF THE
DISTRIBUTION OF MERCURY-ADDED PRODUCTS AND ITS PROPER
DISPOSAL THEREOF IN ORDER TO REDUCE THE INTRODUCTION OF
MERCURY INTO THE ENVIRONMENT.**

Be it enacted by the Senate and the House of Representatives in Congress assembled:

1 **Section 1. Short Title.** This Act shall be known as the "*Mercury Reduction Act*
2 *of 2005.* "

3
4 **Section 2. Declaration of Policy.** It is hereby declared the policy of the State to
5 adopt and implement positive and effective measures to ensure the reduction of the
6 distribution of products containing mercury and the proper disposal thereof to reduce
7 the introduction of mercury into the environment.

8
9 **Section 3. Definitions.** For the purposes of this Act, the terms below are
10 defined as follows:

11 (A) "*Affected source*" means any source that emits mercury, except electric utility
12 generators;

13 (B) "*Department*" means the Department of Environment and Natural Resources
14 which is the government agency created pursuant to Executive Order No. 192;

15 (C) "*Department of Science and Technology (DOST)*" refers to the government
16 agency created pursuant to Executive Order No. 128;

17 (D) "*Mercury-added product*" means a product, device, instrument, or piece of
18 equipment into which elemental mercury or mercury compounds are

1 intentionally added during its formulation or manufacture and in which the
2 continued presence of mercury is desired to provide a specific characteristic or
3 to perform a specific function;

4 (E) *"Mercury-containing material"* means any material that contains mercury that
5 was not intentionally added including, but not limited to, ash, sludge bottoms
6 from manufacturing process, scrubber effluent, sewage sludge, cement kiln dust,
7 and products made from mercury containing waste such as asphalt tiling, road
8 asphalt, playground mats, or any other material containing mercury. Mercury-
9 containing material does not include material used as fuels, specifically and
10 without exception, coal, oil, gasoline, diesel, or natural gas;

11 (F) *"Person"* means any entity including, but not limited to, people, businesses, or
12 corporations; and

13 (G) *"Secretary"* means the Secretary of the Department of Environment and
14 Natural Resources.

15

16 **Section 4. *Creation of an Environmental Advisory Council on Mercury Pollution.***

17 (A) There is hereby created an Environmental Advisory Council on Mercury
18 Pollution, to consist of one member of the House of Representatives, appointed
19 by the Speaker; one member of the Senate, appointed by the Senate President; the
20 Secretary of the Department of Environment and Natural Resources; and the
21 following persons, appointed by the President: one public health specialist; one
22 toxicologist; one representative of an environmental group; one scientist who is
23 knowledgeable on matters related to mercury contamination; one children's
24 advocate; and one consumer advocate.

25 The advisory council shall advise the general assembly, the executive and
26 legislative branch and the general public on matters relating to the prevention and
27 clean-up of mercury pollution and the reduction in human exposure to mercury.

28 (B) The Advisory Council will report to the general assembly regarding:

29 (1) The extent of mercury contamination in the soil, waters, and air of the
30 Philippines;

31 (2) The extent of any health risk from mercury contamination in the country,
32 especially to pregnant women, children, and subsistence fishermen, and ways
33 to reduce human exposure to mercury;

- 1 (3) Methods available for minimizing risk of further contamination or public
2 health risk;
- 3 (4) Coordination needed with other states to effectively address regional mercury
4 issues and pollution;
- 5 (5) Ways to eliminate non-essential uses of mercury in health care, government,
6 consumer, and business operations;
- 7 (6) The extent to which mercury-containing solid waste and medical waste is
8 incinerated or autoclaved within the state or sent out of state for such
9 purposes, and ways to reduce the disposal and incineration of mercury-added
10 products.

11

12 **Section 5. *Public Education, Information and Outreach.*** The DENR, in
13 collaboration with the Department of Science and Technology (DOST), shall
14 develop, design and disseminate to the public information about mercury-added
15 products, the prohibition on disposal of mercury-added products, the need for source
16 separation, and the collection programs available to product users.

17

18 **Section 6. *Public Participation.*** The public has a fundamental right to
19 participate in decisions which could affect their health, well-being, and the quality of
20 their environment. To encourage public participation, and accountability to the
21 public, the Secretary must keep a mercury disclosure mailing list of all parties
22 interested in mercury-added products and mercury-containing materials and notify
23 them in a timely manner of any public hearings, final decisions on exemptions, the
24 availability of monitoring and reporting data, and any other relevant information
25 regarding this Act that the Secretary deems important or relevant. Any member of
26 the public may request to be added to this list at any time.

27

28 **Section 7. *Disclosure of Mercury Content.*** A manufacturer or wholesaler may
29 not supply a mercury-added product for sale to the public without first notifying the
30 Secretary in writing of the amount of mercury in the individual product, the total
31 amount of mercury in all of the mercury-added products sold by the manufacturer
32 each year, and the essential-use purpose that the mercury serves. The Secretary shall

1 send this notification letter to the mercury disclosure mailing list as established in
2 Section 6 of this Act.

3

4 **Section 8. Control on the Sale of Elemental Mercury.**

5 (A) *Sale.* A person may not sell mercury to another person without requiring the
6 purchaser to sign a statement indicating that the purchaser:

7 (1) Will use the mercury only for a medical, dental, instructional, research, or
8 manufacturing purpose;

9 (2) Understands that mercury is toxic, and will store and use it appropriately so
10 that no person is exposed to the mercury unknowingly; and

11 (3) Will not place, or allow anyone under the purchaser's control to place, the
12 mercury in the trash for disposal as solid waste or in a wastewater disposal
13 system.

14 (B) *Use.* A person who uses elemental mercury in any application may not place, or
15 deliver the mercury to another person who places residues, particles, scrapings, or
16 other materials that contain mercury in solid waste, medical waste, construction
17 or demolition waste, or wastewater, except for traces of materials that may
18 accidentally pass through a filtration system during a dental procedure.

19

20 **Section 9. Proper Labeling of Products Containing Mercury.** A manufacturer or
21 wholesaler may not sell and a retailer may not knowingly sell any products, devices,
22 instruments, or equipment that contain mercury unless the item is labeled in a
23 manner to clearly inform a purchaser or consumer that mercury is present in the item
24 and that the item shall not be placed in solid waste, medical waste, hazardous waste,
25 construction and demolition waste, or flushed down the drain until the mercury is
26 removed for reuse, recycling, or otherwise processing to ensure that it does not
27 become part of solid waste, hazardous waste, or wastewater stream.

28 Label placement shall be on both the product and the product packaging. The
29 label should be clearly visible and be sufficiently durable to remain legible at the time
30 of purchase. Primary responsibility for affixing labels required under this section
31 shall be on the manufacturer, and not on the wholesaler or retailer.

1 **Section 10. *Mercury-Added Products Phase-Out.***

2 (A) Manufacturers are no longer allowed to sell mercury-added products in the
3 country within two (2) years from effectivity of this Act, unless they have applied
4 for and been granted an exemption from this section by the Secretary.

5 In making the determination, the Secretary shall only grant such an exemption if:

6 (1) The mercury-added products meet an essential-use requirement;

7 (2) Finds that there are no comparable, feasible, reasonably-priced alternatives to
8 mercury-added products available; and

9 (3) Through verifiable documentation submitted by the manufacturer, assures
10 that applicants have established take-back programs for all mercury-added
11 products sold in the state that are available to all residents on a regular basis.

12 (B) Exemptions may only be granted for up to two (2) years and may be renewed
13 biannually. The renewal of each exemption shall follow the same process as the
14 initial exemption. Each year the Secretary shall list all products that have been
15 given exemptions and send this list to the mercury disclosure mailing list as
16 established by Section 6 of this Act.

17 (C) The decision to grant the exemption is discretionary and shall be subject to public
18 review.

19
20 **Section 11. *Ban on Mercury-Containing Toys, Games, Cosmetics, and Apparel.***

21 A person may not sell for resale or at retail toys, games, cards, ornaments, and
22 novelties that contains mercury, or cosmetics or an item of clothing or wearing an
23 apparel that contains mercury.

24
25 **Section 12. *Ban on Sale or Distribution of Mercury Thermometers.*** A medical

26 facility, including a hospital lab or health care provider, may not ever distribute
27 thermometers containing mercury. Thermometers containing mercury shall be
28 prohibited from sale one year after the effective date of this Act.

1 **Section 13. *Ban on Mercury in School Laboratories and Purchase of Mercury by***
2 ***Schools and Universities; Clean Out of Existing Mercury Stocks.*** Within one (1) year
3 from the effectivity of this Act, elemental mercury and mercury compounds shall not
4 be used in laboratory procedures that elementary, secondary, or college students
5 perform and no elementary or secondary school or university shall purchase mercury
6 for any reason.

7 Within one (1) year from the effectivity of this Act, the Department shall
8 develop a plan for cleaning out and responsibly disposing of existing stocks of
9 elemental mercury in all schools and universities in the country.

10

11 **Section 14. *Dental Office Requirements.***

12 (A) All dental offices shall be required to submit an annual amalgam mercury report
13 describing quantities stored and recycled of two separate mercury sources:

14 (1) Dry sources (chairside traps, clean scrap, and elemental mercury); and

15 (2) Wet sources (amalgam sludge, and vacuum pump traps).

16

17 **Section 15. *Notification of Risk to Patients, Installation of Mercury Amalgam***
18 ***Dental Fillings in Pregnant Women (or Women of Childbearing Age) and Children Under***
19 ***Ten (10) Years of Age.*** After adoption of this Act, dentists shall be required to provide
20 pregnant women (or women of childbearing age) and children under ten (10) years of
21 age with information regarding the health risks of dental fillings containing mercury
22 amalgams.

23 Nothing in this section shall be construed to deprive any dental patient of the
24 right to choose or replace any professionally recognized restorative material or
25 permit disciplinary action against a dentist solely for removing or replacing any
26 professionally recognized restorative material.

27

28 **Section 16. *Health Care Provider Requirements Regarding Mercury-Containing***
29 ***Fixatives.*** All health care providers using mercury-containing fixatives shall be
30 required to capture for recycling all solutions that have come in contact with said

1 fixatives, including but not limited to all tissue rinse waters, tissue processor wastes,
2 and formalin still residue.

3
4 **Section 17. *Mercury Disposal Prohibition.***

5 (A) A person may not place any elemental mercury or mercury-containing products
6 including, but not limited to, batteries, lamps, thermostats, thermometers, electric
7 switches, Cantor tubes (separate or as part of a larger product), appliances,
8 gauges, medical or scientific instruments or devices, or electric relays or any other
9 electrical device from which the mercury has not been removed for reuse or
10 recycling:

11 (1) In solid waste destined for landfill, waste incineration, or construction and
12 demolition disposal;

13 (2) In medical waste destined for landfill, waste incineration, or construction and
14 demolition disposal;

15 (3) In hazardous waste destined for waste incineration or recycling in any device
16 which heats the material, except for the purpose of retorting the mercury for
17 recovery; or

18 (4) In wastewater disposal systems, including individual home septic systems.

19 Such products can only be accepted at government-permitted or otherwise
20 approved private hazardous waste facilities, recycling, or permitted hazardous waste
21 facilities.

22
23 **Section 18. *Mercury Source Separation.*** Every person who discards solid
24 waste, medical waste, or wastewater within the country shall separate mercury-
25 added products from wastewater, municipal and medical waste streams. Any
26 contractor who replaces, removes, or transports mercury-added products shall assure
27 the proper separation of any discarded mercury-added product.

28
29 **Section 19. *Collection.*** Manufacturers of mercury-added products shall:

- (1) Develop a plan or system for the collection of mercury-added products from users and ensure its implementation;
- (2) Clearly inform each mercury-added product purchaser of the proper system for collection of the product and that disposal of the product in municipal or medical waste or wastewater is prohibited; and
- (3) Periodically report on the success of the collection system.

A fee may not be assessed for use of the collection system.

Section 20. Removal From Service; Products Containing Mercury. (A) When a mercury-added product is removed from service, the mercury in the item must be source-separated for reuse, recycling, or other processing to prevent its release into the environment.

(B) A person who is in the business of replacing or repairing an item in households shall ensure that the mercury contained in an item that is replaced or repaired is reused or recycled or otherwise processed in compliance with section 19 of this Act either through personal action or delivery of the item to a manufacturers' collection system established by section 19 of this Act.

(C) A person may not crush a motor vehicle unless the person has first made a good faith effort to remove all of the mercury switches in the motor vehicle.

(D) Appliance recyclers shall be required to receive training and remove mercury switches from appliances before any reclamation or disposal processes take place. Appliance recyclers shall be required to report or manifest annually all mercury items removed and submitted to manufacturers' collection programs.

(E) Building, electrical and maintenance contractors shall make a good faith effort to pull all mercury-containing items from buildings before demolition and shall be required to report and manifest annually all mercury items removed and submitted to manufacturers' collection programs.

Section 21. Displacement Relays.

1 (A) Manufacturers of displacement relays containing mercury are responsible for the
2 costs of collecting and managing their displacement relays to ensure that the
3 relays do not become part of the solid waste stream.

4 (B) A manufacturer of a displacement relay that contains mercury shall, in addition
5 to the requirements of Section 19 of this Act, provide incentives for, and sufficient
6 information to, purchasers and consumers of the relay to ensure that the relay
7 does not become part of the waste stream. A manufacturer that has complied
8 with this subdivision is not liable for improper disposal by purchasers or
9 consumers of its relays.

10 (C) A manufacturer subject to this subdivision, or an organization of such
11 manufacturers and its officers, members, employees, and agents, may participate
12 in projects or programs to collect and properly manage waste displacement
13 relays. Any person who participates in such a project or program is immune from
14 liability under Philippine laws relating to antitrust, restraint of trade, unfair trade
15 practices, and other regulation of trade or commerce for activities related to the
16 collection and management of the relays under this subdivision.

17 (D) For purposes of this section, a "*displacement relay*" shall refer to an electrical
18 flow control device having one or more poles that contain metallic mercury and a
19 plunger which, when energized by a magnetic field, moves into a pool of
20 mercury, displacing the mercury sufficiently to create a closed electrical circuit.

21
22 **Section 22. *Recycling of Mercury-Added Lamps and Other Mercury-Added***
23 ***Products.*** Notwithstanding any general or specific law to the contrary, the Secretary
24 shall be directed to comply with Philippine environmental laws and, in so doing, be
25 required to properly manage mercury-added lamps and other mercury-added
26 products. Recycling shall be utilized, whenever possible, as the preferred method of
27 disposal.

28
29 **Section 23. *Mercury Emission Monitoring for Large Emitters.***

30 (A) *Waste Incinerators.* This section requires mercury monitoring systems for mercury
31 and quarterly reporting requirements to the Department of mercury emissions for
32 all waste incinerators operating within the state.

1 (B) *Non-Utility Generators*. This section requires persons who emit mercury to monitor
2 emissions and provide quarterly reports to the state.

3 (C) *Electric Utility Generators*. This section requires persons or utilities who generate or
4 sell power in the state to monitor mercury emissions and provide quarterly
5 reports to the state on the mercury emitted in generating that electricity.

6
7 **Section 24. *Mercury Reduction Requirement for Large Mercury Emitters.***

8 (A) *Non-Utility Sources*. This section applies to all mercury emitters of over 0.5 pounds
9 annually except for electric utility generators. All affected sources shall reduce
10 mercury releases by 50% within five (5) years from effectivity of this Act and have
11 zero emissions within ten (10) years from effectivity of this Act, using the year in
12 which this Act takes effect as the baseline. Within two (2) years from effectivity of
13 this Act, the Department shall establish a methodology for determining the
14 baseline annual mercury emissions limit for affected sources.

15 (B) *Utility Sources*. This section applies to all electric utility generators emitting more
16 than 0.5 pounds of mercury annually. All electric utility generators which burn
17 any amount of coal shall reduce mercury releases by 95% within ten (10) years
18 from effectivity of this Act, using the year in which this Act takes effect as the
19 baseline. Within two (2) years from effectivity of this Act, the baseline will be
20 calculated based on data gathered under the federal mercury monitoring
21 requirements imposed on utility generators.

22
23 **Section 25. *Disposal of Ash Containing Mercury and Mercury Captured Through***
24 ***Emission Controls***. Any mercury captured or recovered through the use of an
25 emission control, coal cleaning, or another method and all ash generated from
26 combustion shall be disposed of in a manner that ensures that the hazards from
27 mercury are not transferred from one environmental medium to another; and there is
28 no release of mercury into the environment.

29
30 **Section 26. *Government Procurement of Non-Mercury-Added Products and***
31 ***Submission of Annual Report.***

1 (A) Government departments and agencies involved with procuring products shall
2 purchase non-mercury-added products whenever viable alternatives are
3 determined cost-effective and available.

4 (B) On an annual basis, said departments and agencies shall produce a report to the
5 Legislature on the categories and quantities of mercury-added products
6 purchased in the prior year and outline the steps taken to investigate and
7 purchase non-mercury-added products.

8

9 **Section 27. *Implementing Rules and Regulations (IRRs).*** – Within six (6)
10 months from the effectivity of this Act, the DENR shall, promulgate the
11 Implementing Rules and Regulations.

12

13 **Section 28. *Role of Local Government Units.*** Local government units (LGUs),
14 together with the DENR and the Department of Health (DOH), shall conduct long
15 term monitoring to gain a more comprehensive understanding of the sources,
16 kinetics, environmental behavior and toxicity of Hg and its impact in the affected
17 areas especially the high risk groups, i.e., pregnant women and children.

18 LGUs shall also conduct remediation / mitigation measures in the
19 environment to ensure that exposure limits to mercury will be kept at a minimum or
20 within permissible limits.

21

22 **Section 29. *Severability Clause.*** If any provision of this Act or the application
23 thereof to any person or circumstance is held invalid, the invalidity shall not affect
24 other provisions or applications of this Act which can be given effect without regard
25 to the invalid provision or application, and to this end the provisions of this Act are
26 severable.

27

28 **Section 30. *Effectivity Clause.*** This Act shall take effect fifteen (15) days after
29 its full and complete publication in the Official Gazette or in at least two (2)
30 newspapers of general circulation.

1

2 **Section 31. *Repealing Clause.*** – All laws, orders, doctrines, decrees, rules and
3 regulations or parts thereof, inconsistent with any of the provisions of this Act are
4 hereby repealed, amended or modified accordingly.

5

6 *Approved,*