

FIFTEENTH CONGRESS OF THE)
REPUBLIC OF THE PHILIPPINES)
First Regular Session)

SENATE
OFFICE OF THE SECRETARY

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SENATE

Senate Bill No. 2031

RECEIVED BY: 

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.

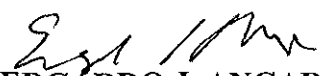
People throw away products containing mercury, unaware of its dangers. The United Nations Environment Program (UNEPs) "Global Mercury Assessment" (2002) found that mercury is now all over the world at levels that adversely affect humans and wildlife. The problem has become global as regions with no significant 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 nonmercury 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 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 **SEC. 1. Short Title.** This Act shall be known as the "*Mercury Reduction Act of*
2 *2010.*"

3
4 **SEC. 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 the
7 introduction of mercury into the environment.

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

- 11 (a) "*Affected source*" means any source that emits mercury, except electric
12 utility 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
19 intentionally added during its formulation or manufacture and in which the
20 continued presence of mercury is desired to provide a specific characteristic or
21 to perform a specific function;
- 22 (e) "*Mercury-containing material*" means any material that contains mercury
23 that was not intentionally added including, but not limited to, ash, sludge
24 bottoms from manufacturing process, scrubber effluent, sewage sludge,

- 1 cement kiln dust, and products made from mercury containing waste such as
2 asphalt tiling, road asphalt, playground mats, or any other material containing
3 mercury. Mercury-containing material does not include material used as fuels,
4 specifically and without exception, coal, oil, gasoline, diesel, or natural gas;
5 businesses, or corporations; and
6 (f) **“Person”** means any entity including, but not limited to, people, business,
7 corporations; and
8 (g) **“Secretary”** means the Secretary of the Department of Environment and
9 Natural Resources.

10
11 **SEC. 4. *Creation of an Environmental Advisory Council on Mercury Pollution.***

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

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

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

- 26 (1) The extent of mercury contamination in the soil, waters, and air of the
27 Philippines;
28 (2) The extent of any health risk from mercury contamination in the country,
29 especially to pregnant women, children, and subsistence fishermen, and
30 ways to reduce human exposure to mercury;
31 (3) Methods available for minimizing risk of further contamination or public
32 health risk;
33 (4) Coordination needed with other states to effectively address regional
34 mercury issues and pollution;
35 (5) Ways to eliminate non-essential uses of mercury in health care,
36 government, consumer, and business operations;
37 (6) The extent to which mercury-containing solid waste and medical waste is
38 incinerated or autoclaved within the state or sent out of state for such

1 purposes, and ways to reduce the disposal and incineration of mercury-
2 added products.

3
4 **SEC. 5. *Public Education, Information and Outreach.*** The DENR, in
5 collaboration with the Department of Science and Technology (DOST), shall develop,
6 design and disseminate to the public information about mercury-added products, the
7 prohibition on disposal of mercury-added products, the need for source separation, and
8 the collection programs available to product users.

9
10 **SEC. 6. *Public Participation.*** The public has a fundamental right to participate in
11 decisions which could affect their health, well-being, and the quality of their
12 environment. To encourage public participation, and accountability to the public, the
13 Secretary must keep a mercury disclosure mailing list of all parties interested in mercury
14 added products and mercury containing materials and notify them in a timely manner of
15 any public hearings, final decisions on exemptions, the availability of monitoring and
16 reporting data, and any other relevant information regarding this Act that the Secretary
17 deems important or relevant. Any member of the public may request to be added to this
18 list at any time.

19
20 **SEC. 7. *Disclosure of Mercury Content.*** A manufacturer or wholesaler may not
21 supply a mercury-added product for sale to the public without first notifying the
22 Secretary in writing of the amount of mercury in the individual product, the total amount
23 of mercury in all of the mercury added products sold by the manufacturer each year, and
24 the essential-use purpose that the mercury serves. The Secretary shall send this
25 notification letter to the mercury disclosure mailing list as established in Section 6 of this
26 Act.

27
28 **SEC. 8. *Control on the Sale of Elemental Mercury.***

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

- 31 (1) Will use the mercury only for a medical, dental, instructional, research, or
32 manufacturing purpose;
33 (2) Understands that mercury is toxic, and will store and use it appropriately
34 so that no person is exposed to the mercury unknowingly; and
35 (3) Will not place, or allow anyone under the purchaser's control to place, the
36 mercury in the trash for disposal as solid waste or in a wastewater disposal
37 system.

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

7
8 **SEC. 9. *Proper Labeling of Products Containing Mercury.*** A manufacturer or
9 wholesaler may not sell and a retailer may not knowingly sell any products, devices,
10 instruments, or equipment that contain mercury unless the item is labeled in a manner to
11 clearly inform a purchaser or consumer that mercury is present in the item and that the
12 item shall not be placed in solid waste, medical waste, hazardous waste, construction and
13 demolition waste, or flushed down the drain until the mercury is removed for reuse,
14 recycling, or otherwise processing to ensure that it does not become part of solid waste,
15 hazardous waste, or wastewater stream.

16
17 Label placement shall be on both the product and the product packaging. The label
18 should be clearly visible and be sufficiently durable to remain legible at the time of
19 purchase. Primary responsibility for affixing labels required under this section shall be on
20 the manufacturer, and not on the wholesaler or retailer.

21
22 **SEC. 10. *Mercury-Added Products Phase-Out.***

23 (A) Manufacturers are no longer allowed to sell mercury-added products in the
24 country within two (2) years from effectivity of this Act, unless they have
25 applied for and been granted an exemption from this section by the Secretary.
26 In making the determination, the Secretary shall only grant such an exemption
27 if:

- 28 (1) The mercury-added products meet an essential-use requirement;
29 (2) Finds that there are no comparable, feasible, reasonably-priced alternatives
30 to mercury-added products available; and
31 (3) Through verifiable documentation submitted by the manufacturer, assures
32 that applicants have established take back programs for all mercury-added
33 products sold in the state that are available to all residents on a regular
34 basis.

35 (B) Exemptions may only be granted for up to two (2) years and *may* be renewed
36 biannually. The renewal of each exemption shall follow the same process as
37 the initial exemption. Each year the Secretary shall list all products that have

1 been given exemptions and send this list to the mercury disclosure mailing list
2 as established by Section 6 of this Act.

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

5
6 **SEC. 11. *Ban on Mercury-Containing Toys, Games, Cosmetics, and Apparel.*** A
7 person may not sell for resale or at retail toys, games, cards, ornaments, and novelties that
8 contains mercury, or cosmetics or an item *of* clothing or wearing an apparel that contains
9 mercury.

10
11 **SEC. 12. *Ban on Sale or Distribution of Mercury Thermometers.*** A medical
12 facility, including a hospital lab or health care provider, may not ever distribute
13 thermometers containing mercury. Thermometers containing mercury shall be prohibited
14 from sale one year after the effective date of this Act.

15
16 **SEC. 13. *Ban on Mercury in School Laboratories and Purchase of Mercury by***
17 ***Schools and Universities; Clean Out of Existing Mercury Stocks.*** Within one (1) year
18 from the effectivity of this Act, elemental mercury and mercury compounds shall *not* be
19 used in laboratory procedures that elementary, secondary, or college students perform
20 and no elementary or secondary school or university shall purchase mercury for any
21 reason.

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

25
26 **SEC. 14. *Dental Office Requirements.***

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

- 30 (1) Dry sources (chairside traps, clean scrap, and elemental mercury); and
31 (2) Wet sources (amalgam sludge, and vacuum pump traps).

32
33 **SEC. 15. *Notification of Risk to Patients, Installation of Mercury Amalgam***
34 ***Dental Fillings in Pregnant Women (or Women of Childbearing Age) and Children***
35 ***Under Ten (10) Years of Age.*** After adoption of this Act, dentists shall be required to
36 provide pregnant women (or women of childbearing age) and children under ten (10)
37 years of age with information regarding the health risks of dental fillings containing
38 mercury amalgams.

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

5
6 **SEC. 16. *Health Care Provider Requirements Regarding Mercury-Containing***
7 ***Fixatives.*** All health care providers using mercury containing fixatives shall be required
8 to capture for recycling all solutions that have come in contact with said fixatives,
9 including but not limited to all tissue rinse waters, tissue processor wastes, and formalin
10 still residue.

11
12 **SEC. 17. *Mercury Disposal Prohibition.***

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

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

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

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

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

28 Such products can only be accepted at government-permitted or otherwise
29 approved private hazardous waste facilities, recycling, or permitted hazardous waste
30 facilities.

31
32 **SEC. 18. *Mercury Source Separation.*** Every person who discards solid waste,
33 medical waste, or wastewater within the country shall separate mercury-added products
34 from wastewater, municipal and medical waste streams. Any contractor who replaces,
35 removes, or transports mercury added products shall assure the proper separation of any
36 discarded mercury added product.

37
38 **SEC. 19. *Collection.*** Manufacturers of mercury-added products shall:

- 1 (a) Develop a plan or system for the collection of mercury-added products from
2 users and ensure its implementation;
- 3 (b) Clearly inform each mercury-added product purchaser of the proper system
4 for collection of the product and that disposal of the product in municipal or
5 medical waste or wastewater is prohibited; and
- 6 (c) Periodically report on the success of the collection system.
- 7 A fee may not be assessed for use of the collection system.

8

9 **SEC. 20. *Removal from Service; Products Containing Mercury.***

- 10 (A) When a mercury-added product is removed from service, the mercury in the
11 item must be source-separated for reuse, recycling, or other processing to
12 prevent its release into the environment.
- 13 (B) A person who is in the business of replacing or repairing an item in
14 households shall ensure that the mercury contained in an item that is replaced
15 or repaired is reused or recycled or otherwise processed in compliance with
16 section 19 of this Act either through personal action or delivery of the item to
17 a manufacturers' collection system established by section 19 of this Act.
- 18 (C) A person may not crush a motor vehicle unless the person has first made a
19 good faith effort to remove all of the mercury switches in the motor vehicle.
- 20 (D) Appliance recyclers shall be required to receive training and remove mercury
21 switches from appliances before any reclamation or disposal processes take
22 place. Appliance recyclers shall be required to report or manifest annually all
23 mercury items removed and submitted to manufacturers' collection programs.
- 24 (E) Building, electrical and maintenance contractors shall make a good faith
25 effort to pull all mercury-containing items from buildings before demolition
26 and shall be required to report and manifest annually all mercury items
27 removed and submitted to manufacturers' collection programs.

28

29 **SEC. 21. *Displacement Relays.***

- 30 (A) Manufacturers of displacement relays containing mercury are responsible for
31 the costs of collecting and managing their displacement relays to ensure that
32 the relays do not become part of the solid waste stream.
- 33 (B) A manufacturer of a displacement relay that contains mercury shall, in
34 addition to the requirements of Section 19 of this Act, provide incentives for,
35 and sufficient information to, purchasers and consumers of the relay to ensure
36 that the relay does not become part of the waste stream. A manufacturer that
37 has complied with this subdivision is not liable for improper disposal by
38 purchasers or consumers of its relays.

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

9 (D) For purposes of this section, a “displacement relay” shall refer to an electrical
10 flow control device having one or more poles that contain metallic mercury
11 and a plunger which, when energized by a magnetic field, moves into a pool
12 of mercury, displacing the mercury sufficiently to create a closed electrical
13 circuit.

14
15 **SEC. 22. *Recycling of Mercury-Added Lamps and Other Mercury-Added***
16 ***Products.*** Notwithstanding any general or specific law to the contrary, the Secretary shall
17 be directed to comply with Philippine environmental laws and, in so doing, be required to
18 properly manage mercury-added lamps and other mercury-added products. Recycling
19 shall be utilized, whenever possible, as the preferred method of disposal.

20
21 **SEC. 23. *Mercury Emission Monitoring for Large Emitters.***

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

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

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

31
32 **SEC. 24. *Mercury Reduction Requirement for Large Mercury Emitters.***

33 (A) Non-Utility Sources. This section applies to all mercury emitters of over 0.5
34 pounds annually except for electric utility generators. All affected sources
35 shall reduce mercury releases by 50% within five years from effectivity of this
36 Act and have zero emissions within ten (10) years from effectivity of this Act,
37 using the year in which this Act takes effect as the baseline. Within two (2)
38 years from effectivity of this Act, the Department shall establish a

1 methodology for determining the baseline annual mercury emissions limit for
2 affected sources.

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

10
11 **SEC. 25. Disposal of Ash Containing Mercury and Mercury Captured Through**
12 **Emission Controls.** Any mercury captured or recovered through the use of an emission
13 control, coal cleaning, or another method and all ash generated from combustion shall be
14 disposed of in a manner that ensures that the hazards from mercury are not transferred
15 from one environmental medium to another; and there is no release of mercury into the
16 environment.

17
18 **SEC. 26. Government Procurement of Non-Mercury-Added Products and**
19 **Submission of Annual Report.**

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

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

27
28 **SEC. 27. Implementing Rules and Regulations (IRRs).** - Within six (6) months
29 from the effectivity of this Act, the DENR shall, promulgate the Implementing Rules and
30 Regulations.

31
32 **SEC. 28. Role of Local Government Units.** Local government units (LGUs),
33 together with the DENR and the Department of Health (DOH), shall conduct long term
34 monitoring to gain a more comprehensive understanding of the sources, kinetics,
35 environmental behavior and toxicity of Hg and its impact in the affected areas especially
36 the high risk groups, i.e., pregnant women and children. LGUs shall also conduct
37 remediation / mitigation measures in the environment to ensure that exposure limits to
38 mercury will be kept at a minimum or within permissible limits.

1
2 **SEC. 29. *Separability Clause.*** If any provision of this Act or the application
3 thereof to any person or circumstance is held invalid, the invalidity shall not affect other
4 provisions or applications of this Act which can be given effect without regard to the
5 invalid provision or application, and to this end the provisions of this Act are severable.
6

7 **SEC. 30. *Effectivity Clause.*** This Act shall take effect fifteen (15) days after its
8 full and complete publication in the Official Gazette or in at least two (2) newspapers of
9 general circulation.
10

11 **SEC. 31. *Repealing Clause.*** - All laws, orders, doctrines, decrees, rules and
12 regulations or parts thereof, inconsistent with any of the provisions of this Act are hereby
13 repealed, amended or modified accordingly.
14

15 *Approved,*