

The Global Lead Advice and Support Service (GLASS) provides information and referrals on lead poisoning and lead contamination prevention and management, with the goal of eliminating lead poisoning globally and protecting the environment from lead.
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Lead Poisoning: The Truth Behind Consumer Products and Legislation.

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Abstract:

This research project details the world's best practice in regulating lead, whilst simultaneously exposing the countries which fail to regulate consumer products, and as a result leave consumer products open to highly toxic levels of lead which may cause adverse health effects.

Lead is a soft, heavy metal, which is malleable and inexpensive. It is for these reasons that lead is used in consumer products, and in particular children's jewellery. The pitfall of lead is its poisonous qualities when absorbed into the body, resulting in damage to the cognitive development of children and damage to the nervous system. Excessive amounts of lead in the body can also lead to death. This report analyses the best practice in lead regulation in the wide-ranging area of consumer products, concentrating on the United States (US). The report focuses on jewellery, in particular lead in children's jewellery. Lead is a potent neurotoxin, particularly harmful to children. The presence of lead within consumer products likely to be handled by children presents a serious problem. National legislation and regulation concerning lead and its hazardous properties in a variety of consumer products is described for the USA, the European Union and Australia. The report concludes with recommendations for Australia to improve legislation regarding lead. The report analyses the policies in each of the above nations and presents suggestions for Australia to increase safety for both children and adults against lead. (1)

Background of Lead:

Lead is a soft, malleable, heavy metal, used in a variety of consumer products. Lead is a potent neurotoxin, particularly harmful to children. A broad analysis of the medical effects of lead is necessary to establish a list of consequences from exposure to lead. Lead disrupts the nervous connections, thus hindering cognitive development. The presence of lead within consumer products likely to be handled by children presents a serious problem. Young children are more vulnerable to the effects of lead due to the contact of hand to mouth activities and the frequency with which young children put objects in their mouths, therefore ingesting the chemicals present on the object. Children are undergoing cognitive and physical development; consequently, lead, when ingested, damages development and can possibly damage the kidneys, liver and other organs.

Lead affects the nervous system. Studies have "associated lead overexposure with decreased intelligence, reduced short-term memory, reading disabilities, and deficits in vocabulary, fine motor skills, reaction time, and hand-eye coordination." (2) Lead paint and dust are extremely dangerous to young children, and there is no established safe limit. The United States (US) has many policies in action in response to research proving the adverse health effects lead has on both children and adults. In contrast, China has restricted, if any, policies or legislation pertaining lead. Australia's approach to lead regulations and restrictions is limited.

Lead in Consumer Products:

The toxicity of lead in consumer products is a complex matter, due to the control of lead testing and the adverse health affects of lead on children and adults alike. Humans are exposed to minute amounts of lead on a daily basis, due to the presence of lead in the atmosphere and ingestion of water and food that has been exposed to lead contamination as a result of leaded petrol and lead in paint. Lead is also naturally present in the environment. A child's "primary route of lead exposure is oral ingestion of lead-based paint and lead-containing dust and, to a lesser extent, lead contaminated soil." (3) Only a small amount of lead is eliminated from the body every day, and the damage that lead causes is related to both how high the blood lead level is and for how long the blood lead remains elevated.

There is no safe level of lead. Lead-based paint is not confined to housing and industrial paint, but is also common in children's toys. Jewellery marketed specifically for children has been found to contain unsafe levels of lead because of the tendency of young children to place objects in their mouths. A study conducted in the US found that, out of a total 139 jewellery items, "almost half (42.6%) of the items assayed were heavily leaded, exceeding 80% lead by weight. Average lead content for all items tested was 44.0%, and one or more heavily leaded items were found in samples from each retail store and each geographic location. Six of ten samples tested for leachability of lead exceeded the US Consumer Product Safety Commission guidelines of 175 µg accessible lead. Our results show that much inexpensive children's and costume jewellery imported and sold in the US is heavily leaded." (4)

This study demonstrates the necessity for an increase in regulation and legislation and the importance of action against lead in consumer products.

Lead Legislation in Consumer Products:

Lead can be found in a vast amount of consumer products, ranging from various electronic products, red lipstick, vinegars, jewellery and toys. Legislation is the key action governments can take in response to the high levels of lead in consumer products. The US has a federal policy regarding hazardous substances; this Act is followed by state legislation. There are two federal Acts which have been used to control lead in consumer products in Australia: the *Customs Act 1901* and *Trade Practices Act 1974*. The *Customs (Prohibited Imports) Regulations 1956*, under the *Customs Act*, only controls the lead content in some imported consumer products (not including jewellery).

Supplying products that do not comply with a mandatory standard or ban is an offence under the Commonwealth of Australia *Trade Practices Act 1974*.

There are no other federal laws limiting lead in any consumer product sold in Australia. The Commonwealth of Australia *Trade Practices Act 1974* only controls imported products. Eighty percent of the toys sold in Australia are imported.

Australian States and Territories have consumer product legislation which call up Federal Standards (not laws); for example, paint lead levels have been limited in the Federal Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) until 1/1/2010. The Federal Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) does not limit lead in jewellery at all. A limit on the amount of leachable lead and other heavy metals in toys, listed under Australian/New Zealand Standard AS/NZS ISO 8123.3:2003, was made law by the Federal Government for the first time under the *Trade Practices Act* which came into force on 1/1/10.

The US is the leader in the world's best practice of legislation concerning lead in consumer products, with the state of California having the world's best legislation in this regard. On the other hand, China often fails to enforce its legislation limiting toxic levels of lead in consumer products. As a result of the increased trade of consumer products streaming out of China, and many products made within the respective countries, Australia and the US are exposed to products containing levels of lead beyond the legal limit. As well, both Australia and the US fail to test every product on the market.

(A) The United States:

In the US, States have varying policies and regulations regarding lead. *The Consumer Product Safety Act of 1972* was enacted by the US Congress. The US Consumer Product Safety Commission was set up as a result of this legislation. It began operation in 1973, charged with "protecting the public from unreasonable risks of serious injury or death from thousands of types of consumer products under the agency's jurisdiction."(5) On February 10th, 2009, the Consumer Product Safety Commission (CPSC) declared that all children's products on sale must contain a maximum 600 parts per million (ppm) of lead or less, immediately applying to both current products and products already on the shelves.

"The CPSC announced that they will not impose penalties against anyone for making, importing, distributing or selling a children's product that is made of natural materials such as cotton, wool or wood, children's apparel or other textile products made from dyed or undyed textiles and non-metallic thread and trim used or children's books printed after 1985 even if the product contains more than 600ppm lead." (5)

However, the CPSC advised that if a seller has knowledge that one of these products contained more than 600ppm lead and continues to sell the product, they will be subject to corrective actions. The CPSC further advises that the manufacturer may determine whether a component part is inaccessible so long as the determination is consistent with the CPSC's proposed guidance or is based on a reasonable reading of the inaccessibility requirement laid out in the legislation.

The CPSC also used an interim final rule, effective today (February 10), which establishes alternative lead limits for certain electronic devices." (6)

The *Consumer Products Safety Improvement Act of 2008* implemented the regulation on the sale of products aimed at children 12-years' old and under, and consequently brought the restrictions on lead content down from 600 ppm to 300 parts per million post August 14 2009 and to 90 ppm effective August 14, 2009. (7) This Act is active federally throughout the US and will contribute towards ridding consumer products of unnecessary and dangerous amounts of lead.

"The lower lead limits, which took effect on February 10, 2009, was 600 parts per million (ppm) for any accessible part, reduced to 300 ppm effective August 14, 2009. The stricter limit for lead in paint and similar surface coatings, originally set by the Commission in 1978, was 600 ppm, reduced to 90 ppm, effective August 14, 2009. This limit applies not only to paint sold to consumers as such, but also to paint on toys and other articles intended for children and to certain household furniture items. (8) www.newyorkinjuries.com/blog/?p=17521

"Consumer products" is a wide-reaching generic term, and thus legislation must address all products that contain lead and are available to an unsuspecting public. According to the US Consumer Product Safety Commission, "Under the Federal Hazardous Substances Act (FHSA), 15 U.S.C. §1261(f) (1), household products that expose children to hazardous quantities of lead under reasonably foreseeable conditions of handling or use are "hazardous substances." A household product that is

not intended for children but which creates such a risk of injury because it contains lead requires precautionary labelling under the Act. 15 U.S.C. §1261(p). A toy or other article intended for use by children which contains a hazardous amount of lead that is accessible for children to ingest is a banned hazardous substance. 15 U.S.C. §1261(q)(1)(B)." (9)

Please note that the legislation of US States' legislation differs accordingly. Although the US fails to outlaw all lead from consumer products, it is the leader of action against lead in consumer products.

(B) The European Union:

The European Union's main area of lead regulation is in electronic devices. The *Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)* is the forefront leader of legislation restraining the use of hazardous chemicals, in particular lead, from being present in electrical products. The RoHS was adopted in February 2003 and took effect on 1 July 2006. The RoHS restricts its six substances to a 0.1% limit or 1000 parts per million. In contrast, the safe limit as devised by the US was 600 parts per million, and reduced down to 90 parts per million. The RoHS attempts to create legislation that regulates what can be put into electronic devices and products which ultimately results in a regulated system.

(C) Australia:

Until 1/1/10, Australia lacked any nation-wide enforceable legislation that prohibited or even limited lead in all consumer products. There are federal legislation which limit the amount of lead in some imported consumer products. It was recently found that Darrell Lea licorice contained levels of lead above the safe levels for Australia (10). This product was recalled from shelves. The recalling of products found to contain high levels of lead maintains a level of safety in consumer products.

The Commonwealth of Australia *Trade Practices Act of 1974: Consumer Protection Notice No. 1 of 2009*, does not include under the definition of children's toys "sporting goods, camping goods, bicycles, home and public playground equipment, trampolines, electronic game units, models powered by combustion or steam engines and fashion jewellery for children." (11)

"Supplying products that do not comply with a mandatory standard or ban is an offence under the Trade Practices Act." (12)

By eliminating these products from being classed as children's toys, and thus distinguishing them from being subject to the safety standards imposed for children's toys, it fails to protect children from potential lead poisoning by the products.

During testing done by an Australian researcher in 1999, all candles purchased in Australia that were found to contain a lead wick, were imported. Therefore, under the *Trade Practices Act 1974*, the Australian government imposed a permanent ban, effective 22 October 2002, on candles and candlewicks containing greater than 0.06 per cent lead by weight.

Also, in Australia, architectural and decorative paint *produced* in Australia, including paint used to decorate toys, was subject to lead limits set by the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) (Appendix I). The Appendix was adopted by State and Territory governments and administered by the State and Territory departments of health - which is typical of Australian legislation. (13)

Leaders in Lead :Legislation in Children's Jewellery:

The forefront of legislation for children's jewellery is evident in California's legislation, effective January 1, 2009. The *Assembly Bill No. 2901* expands the definition of jewellery to include a number of items previously excluded, such as watches; extends the law restrictions for items offered as part of a promotion, and requires the manufacturers and suppliers to provide proof in the form of certification of the standards of the jewellery. Unfortunately, products in the US which are *labelled* as containing lead under California's legislation, are not considered hazardous products under the *Federal Hazardous Substances Act*.

California's *Proposition 65* requires all products that contain hazardous substances be labelled to alert the consumer to the presence of the hazardous substance. This is the best practice of regulating lead in consumer products. Canada's legislation states that it is "illegal under the *Hazardous Products Act* to import, advertise or sell jewellery items intended mainly for children under 15 which contain more than 600 mg/kg total lead and 90 mg/kg migratable lead". (14) Unlike both the US and Canada, Australia does not have any legislation specifically focusing on lead in jewellery, and as a result there is no official position on lead in jewellery.

Recommendations for Australia:

Labelling: It would benefit consumers if products containing lead were so labelled, together with instructions as to how to avoid exposure to the lead, and the health implications of such exposure. Such product information assists consumers to take control of their own health and the health of those for whom they are responsible.

Blood-lead level tests It is recommended that mandatory lead blood level tests be introduced into Australia under certain circumstances, with the purpose of limiting exposure to lead by young children and adults alike. Such tests are mandatory in the USA for young children under the age of 6 in high risk housing, under the US *Lead Based Poisoning Act Title X* introduced in 1971. A similar system is suggested for Australia.

This research presents the practices that are currently in place and are successful at providing a high level of awareness for consumers and simultaneously banning consumer products that contain high levels of toxicity from being sold.

The importance of keeping lead from reaching consumer products is demonstrated by the adverse health affects experienced in both children and adults. It is an unjustifiable element of consumer products.

Proposition 65 is the best practice of lead legislation because, realistically, it is not possible to ban lead from every product. Certain aspects of *Proposition 65* would be advantageous to Australia to adopt. *Proposition 65* was enacted in California in 1968. The purpose of Proposition 65 was to deem it mandatory that citizens be alerted to the presence of chemicals that may cause birth defects or other reproductive harm. This labelling system allows for the consumer in California to make a decision to buy or not buy the product, as opposed to banning all products containing an unsafe level of hazardous chemical. This is an advanced practice concerning lead, and Australia would benefit from adopting a similar system.

It is desirable, but difficult and probably impossible that all toxic chemicals be removed from consumer products. There has been an emergence of the presence of cadmium in consumer products recently. Cadmium is a known carcinogen. It would be beneficial to the Australian public if a policy were enacted to ban any toxic substances from being present in consumer products. At the

least, a system similar to California's *Proposition 65* would allow for the consumer to have the knowledge and power to make safe and informed decisions on what product to buy and to be present within their homes and/or lives.

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