

MÉXICO



# LEAD IN SOLVENT-BASED PAINTS FOR HOME USE IN MEXICO

ENGLISH SUMMARY

October 2018



NATIONAL REPORT - ENGLISH SUMMARY

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# PREFACE AND ACKNOWLEDGMENTS

In 2007 and 2008, NGOs in the IPEN network collected and analyzed decorative (home use) paints on the market in 11 developing countries, and in countries with economies in transition. The results were startling. In every one of these countries, many of the paints contained dangerously high lead levels. In response, IPEN launched its Global Lead Paint Elimination Campaign, which seeks to eliminate lead in paint and raise widespread awareness among business entrepreneurs and consumers about the adverse human health impacts of lead paint, particularly on the health of children. Since then, IPEN-affiliated NGOs and others have sampled and analyzed paints on the market in more than 50 low- and middle-income countries.

These and other studies suggest that lead paints for home use continue to be widely produced, sold, and used in developing countries despite the fact that most highly industrial countries banned lead paints for household use more than 40 years ago. IPEN and its Participating Organizations are part of the global movement to eliminate lead paint by 2020 to protect children's health.

This report presents new data on the total lead content of solvent-based paints for home use available on the market in Mexico. It also presents background information on why the use of lead paint is a source of serious concern, especially to children's health; a review of national policy frameworks that are in place to ban or restrict the manufacture, import, export, distribution, sale and use of lead paint; and a strong justification to adopt and enforce further regulatory controls in Mexico. Finally, it proposes action steps by different stakeholders to protect children and others from lead paint.

Casa Cem thanks all colleagues, social service providers, interns and volunteers who contributed their effort and dedicated their time and work in compiling and shaping this paint study.

The analytical study providing data to this report was undertaken as part of IPEN's Global Lead Paint Elimination Campaign. It was conducted in Mexico by Casa Cem in partnership with IPEN and funded by the New York Community Trust (NYCT) and the Swedish Government.

While this study was undertaken with funding assistance from the New York Community Trust and the Swedish Government, responsibility for the content lies entirely with IPEN and Casa Cem. The New York Community Trust and the Swedish Government do not necessarily share the expressed views and interpretations.

IPEN is an international NGO network of health and environmental organizations from all regions of the world of which Casa Cem is a member. IPEN is a leading global organization working to establish and implement safe chemicals policies and practices to protect human health and the environment. Its mission is a toxics-free future for all. IPEN helps build the capacity of its member organizations to implement on-the-ground activities, learn from each other's work, and work at the international level to set priorities and achieve new policies.



Established in 2005, Casa Cem is a non-governmental association whose main objective is to contribute to the improvement of socio-environmental conditions through environmental governance, management, training, advocacy, education, communication, legal action, and research programs in relation to the life cycle of natural resources and their interaction with humans. To fulfill this objective, Casa Cem seeks to be a meeting point between public, private, academic sectors and civil society working to transform the condition of the socio-environmental problems of the Western region of Mexico towards sustainability through governance processes and environmental education.



## **Casa Cem**

Av. Chapultepec #376, Guadalajara, Jalisco, México  
<http://casacem.org>

# BACKGROUND

Lead is a toxic metal that causes adverse effects on both human health and the environment. While lead exposure is also harmful to adults, lead exposure harms children at much lower levels, and the health effects are generally irreversible and can have a lifelong impact.

The younger the child, the more harmful lead can be, and children with nutritional deficiencies absorb ingested lead at an increased rate. The human fetus is the most vulnerable, and a pregnant woman can transfer lead that has accumulated in her body to her developing child.<sup>1</sup> Lead is also transferred through breast milk when lead is present in a nursing mother.<sup>2</sup>

Evidence of reduced intelligence caused by childhood exposure to lead has led the World Health Organization (WHO) to list “lead-caused mental retardation” as a recognized disease. WHO also lists it as one of the top ten diseases whose health burden among children is due to modifiable environmental factors.

Lead paint is a major source of childhood lead exposure. The term lead paint is used in this report to describe any paint to which one or more lead compounds have been added. The cut-off concentration for lead paint used in the report is 90 parts per million (ppm, dry weight of paint), the strictest legal limit enacted in the world today. All lead concentrations in the report are total lead levels, unless otherwise specified.

A recent study investigating the economic impact of childhood lead exposure on national economies in all low- and middle-income countries estimated a total cumulative cost burden of \$977 billion international dollars<sup>3</sup> per year. In Mexico, the economic loss is estimated at \$32.6 billion or 1.86 percent of Gross Domestic Product (GDP).<sup>4</sup>

Most highly industrial countries adopted laws or regulations to control the lead content of decorative paints—the paints used on the interiors and exteriors of homes, schools, and other child-occupied facilities—beginning in the 1970s and 1980s. Some countries imposed controls on the lead content in paints used in toys and other applications that could contribute to the exposure of lead in children. In Mexico, there are a few mandatory standards in place on the use of lead in paint, but the threshold limiting the amount of lead in paint for household and decorative use is not explicitly stated.

The Official Mexican Standard NOM-004-SSA1-2013 (Environmental health. Limitations and sanitary specifications for the use of lead compounds) establishes in which kind of products the presence of lead components should be avoided, explicitly mentioned in clause 4.1.3. as paints, enamels, coatings and inks. However, a text in the standard which states, “the use of lead components should be avoided,” is not a prohibitive statement, but rather loosely suggestive.

The Official Mexican Standard NOM-003-SSA1-2006 (Environmental health. Sanitary Requirements to be met by the labeling of paints, inks, varnishes, lacquers and enamels) regulates the labeling of paints, inks, varnishes, lacquers and enamels as referred to in the NOM-004-SSA1-2013 regarding the permissible limits of lead content for these products.

The 2006 standard will be repealed once the Draft Official Mexican Standard NOM-003-SSA1-2018 (Environmental health. Sanitary requirements to be met by the labeling of paints and related products) gets approved soon. This draft standard states that paints and related products should not contain lead as a contaminant in an amount greater than 90 mg/kg (90 ppm).

From January to March 2018, Casa Cem purchased a total of 118 cans of solvent-based paint sold for home use from stores in the Metropolitan Area of Guadalajara (AMG) and the State of Puebla, Mexico.

1 Bellinger, D.C., Very low lead exposures and children's neurodevelopment. *Current Opinion in Pediatrics*, 2008. 20(2): p. 172-177.

2 Bjorklund, K.L., et al., Metals and trace element concentrations in breast milk of first time healthy mothers: a biological monitoring study. *Environmental Health*, 2012. 11.

3 An international dollar is a currency unit used by economists and international organizations to compare the values of different currencies. It adjusts the value of the U.S. dollar to reflect currency exchange rates, purchasing power parity (PPP), and average commodity prices within each country. According to the World Bank, “An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States.” The international dollar values in this report were calculated from a World Bank table that lists GDP per capita by country based on purchasing power parity and expressed in international dollars.

4 <http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure>

The paints represented 39 different brands produced by 38 manufacturers. All paints were manufactured in Mexico. All paints were analyzed by an accredited laboratory in the United States of America for their total lead content, based on dry weight of the paint. The paint samples were analyzed using method EPA3050B/7000B, i.e., through acid digestion of the samples, followed by Flame Atomic Absorption Spectrometry, as recognized by the WHO as appropriate for the purpose.<sup>5</sup> The laboratory participates in the Environmental Lead Proficiency Analytical Testing (ELPAT) program operated by the American Industrial Hygiene Association (AIHA), assuring the reliability of the analytical results.

## RESULTS

***Fifty-three out of 118 analyzed paints (45 percent of paints) were lead paints, i.e., they contained lead concentrations above 90 parts per million (ppm, dry weight of paint).*** This is also the regulatory limit for lead in paint for consumer use in Canada and the United States of America, as well as the regulatory limit for all paint in the Philippines, Cameroon, and in the process of being adopted in Brazil for all paint.

***Thirty-two paints (27 percent of paints) contained dangerously high lead concentrations above 10,000 ppm.*** The highest lead concentration detected was 200,000 ppm in a yellow General Paint—a high gloss anticorrosive alkyd enamel paint sold for home use.

On the other hand, 65 out of 118 paints (55 percent of paints) contained lead concentrations at, or below 90 ppm, suggesting that the technology exists to produce paint without lead ingredients.

***Twenty-seven out of 39 analyzed brands (69 percent of paint brands) sold at least one lead paint, i.e., a paint with lead concentration above 90 ppm.*** Twenty-three out of 39 analyzed brands (59 percent of paint brands) sold at least one lead paint with dangerously high lead concentrations above 10,000 ppm.

***Yellow paints most frequently contained dangerously high lead concentrations above 10,000 ppm.*** Of 35 yellow paints, 23 (66 percent of yellow paints) contained lead levels above 10,000 ppm; two out of three orange paints (67 percent of orange pants) contained lead levels above 10,000 ppm; and seven out of 41 red paints (17 percent of red paints) contained lead levels above 10,000 ppm.

The ten paints with the highest amounts of lead are summarized in Table 1.

**TABLE 1.** TOP 10 SOLVENT-BASED PAINTS WITH THE HIGHEST LEAD CONTENT.

Rank	Sample No.	Brand	Manufacturer	Color	Lead Content (ppm)
1	MEX_17	General Paint	General Paint S.A. de C.V.	Yellow	200,000
2	MEX_28	Pinturas y matices	Pinturas & Matices	Yellow	130,000
3	MEX_51	Famac	Pinturas Famac de Occidente	Yellow	110,000
4	MEX_59	Piocsa	Pinturas de Occidente, S.A. de C.V.	Yellow	110,000
5	MEX_66	Esmaxx	Esmaxx pinturas S.A de C.V.	Yellow	110,000
6	MEX_91	Osiris	Osiris	Yellow	96,000
7	MEX_105	Berel	Pinturas Berel, S.A. de C.V.	Yellow	92,000
8	MEX_64	Dekor	Pinturas agrícolas e industriales, S.A. de C.V.	Yellow	92,000
9	MEX_113	Perdura	Fábrica de Pinturas Perdura	Yellow	90,000
10	MEX_57	Cram	Pinturas Cram, S.A. de C.V.	Red	80,000

<sup>5</sup> World Health Organization, Brief guide to analytical methods for measuring lead in paint. 2011, WHO Library Cataloguing-in-Publication Data.

***In general, paint can labels have little information about lead content or the hazards of lead paint.*** Only 51 out of 118 paints provided information about lead on their labels. These include 29 paints labeled as “lead-free” or “does not contain heavy metals.” However, seven paints with such claims contained lead levels ranging from 2,700 ppm to as high as 130,000 ppm (Pinturas y Matices). In addition, 22 paints indicated they “contain lead” in their labels. Most of these paints did not provide further details on the type of solvents and pigments (organic or inorganic). Most warning symbols on the paint cans indicated the flammability of the paints but had no precautionary warnings on the effects of lead dust to children and pregnant women were provided.

## COMPARISON TO EARLIER STUDY

Lead levels in this study are still consistent with the results of a similar paint study conducted in Mexico by Red de Accion en Plaguicidas y sus Alternativas en Mexico (RAPAM)/Centro de Analisis y Accion en Toxicos y sus Alternativas (CAATA) in 2009.<sup>6</sup> In the 2009 study, all 20 solvent-based paints from seven brands that were analyzed contained lead levels above 10,000 ppm. In the new study, only 32 out of 118 paints (27 percent of paints) contained lead levels above 10,000 ppm.

A comparison between the two studies showed some improvement: the percentage of paints with lead content above 10,000 ppm decreased as did the percentage of paints with lead content exceeding 90 ppm. On the other hand, the paint with the highest level of lead remained in the same range: 164,000 ppm in 2009 and 200,000 ppm in the 2018 study.

# CONCLUSIONS

This study demonstrates that solvent-based paints for home use with high concentrations of lead are widely available in Mexico, since the paints included in this study were from brands commonly sold in retail stores all over Mexico. However, the fact that 65 out of 118 paints (55 percent of paints) contained lead concentrations below 90 ppm indicates that the technology to produce paints without added lead exists in Mexico. The study results provide a strong justification to adopt and enforce a regulation that will ban the manufacture, import, export, distribution, sale and use of all paints (including industrial paints) with total lead concentrations greater than 90 ppm.

## RECOMMENDATIONS

To address the problem of lead in paint, Casa Cem and IPEN propose the following recommendations:

### GOVERNMENT AND GOVERNMENT AGENCIES

The Ministry of Health should immediately draft a regulation that will ban the manufacture, import, export, distribution, sale and use of all types of paints (including industrial paints) that contain total lead concentrations exceeding 90 ppm, the standard recommended in the *Model Law and Guidance for Regulating Lead Paint*,<sup>7</sup> developed by the Global Alliance to Eliminate Lead Paint and published by the UN Environment Programme. They should also require paint companies to display sufficient information indicating harmful content on paint can labels such as solvents and provide a warning on possible lead dust hazards when disturbing painted surfaces. Given that a number of paint brands with “lead free” claims were found to contain very high lead levels, the government should adopt and enforce strong regulations to ensure consumer protection and prevent false advertisements.

During the period of transition to the prohibition of the use of lead in paints, health authorities should ensure that paint manufacturers provide sufficient and accurate information on paint can labels that indicate the harmful content of their products to guide consumers about its usage hazards. Once the

<sup>6</sup> Kumar, A. Lead in New Decorative Paints. 2009.

<sup>7</sup> <https://www.unenvironment.org/resources/publication/model-law-and-guidance-regulating-lead-paint>

prohibition of the use of lead in paints has been established, health authorities must follow-up paint manufacturers to monitor their compliance.

#### **PAINT INDUSTRY**

Paint companies that still produce lead paints should expeditiously stop the use of leaded paint ingredients in paint formulations. Paint companies that have shifted to non-lead paint production should get their products certified through independent, third party verification procedures to increase the customer's ability to choose paints with no added lead.

#### **INDIVIDUAL, HOUSEHOLD AND INSTITUTIONAL CONSUMERS**

Paint consumers should demand paints with no added lead from paint manufacturers and retailers, as well as full disclosure of a paint product's content. Household and institutional consumers should ask for, consciously buy, and apply only paints with no added lead in places frequently used by children such as homes, schools, day care centers, parks and playgrounds.

#### **ORGANIZATIONS AND PROFESSIONAL GROUPS**

Public health groups, consumer organizations and other concerned entities should support the elimination of lead paint, and conduct activities to inform the public and protect children from lead exposure through lead paint, lead in dust and soil, and other sources of lead.

#### **ALL STAKEHOLDERS**

All stakeholders should come together and unite in promoting a strong policy that will eliminate lead paint in Mexico.



a toxics-free future

[www.ipen.org](http://www.ipen.org)

[ipen@ipen.org](mailto:ipen@ipen.org)

[@ToxicsFree](https://www.instagram.com/ToxicsFree)