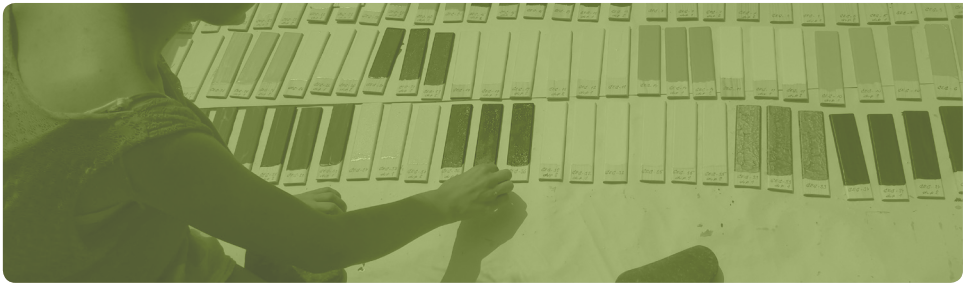

# LEAD IN SOLVENT-BASED PAINTS FOR HOME USE IN GEORGIA

*English Summary*

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GAMARJOBA

IPEN

a toxics-free future

**IPEN** is a leading global network of non-governmental organizations (NGOs) working in more than 100 developing countries and countries with economies in transition. IPEN works to establish and implement safe chemicals policies and practices to protect human health and the environment. It does this by building 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. Its mission is a toxics-free future for all.

IPEN has been engaged in the SAICM process since 2003, and its global network helped to develop the SAICM international policy framework. At its founding, in 1998, IPEN focused on advancing the development and implementation of the Stockholm Convention on persistent organic pollutants (POPs). Today, its mission also includes promoting safe chemicals management through the SAICM process (where it holds the public interest organization seat on the SAICM Bureau), halting the spread of toxic metals, and building a movement for a toxics-free future.

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# PREFACE AND ACKNOWLEDGEMENTS

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 paint by 2020 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 approximately 40 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 even though most highly industrial countries banned lead paints for household use more than 40 years ago.

This report presents new data on the total lead content of solvent-based paints for home use available on the market in Georgia. 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 Georgia. Finally, it proposes action steps by different stakeholders to protect children and others from lead paint.

We take this opportunity to thank all those who were instrumental in compiling and shaping this paint study: primarily Sara Brosché, Manny Calonzo, Valerie Denney, Jeiel Guarino, and Jack Weinberg from IPEN; Olga Speranskaya from Eco-Accord; Tatiana Biresova, Jindřich Petrlík, and Jitka Straková from Arnika; as well as to the staff of Forensic Analytical Laboratories, Inc. USA.

This study was undertaken as part of IPEN's Global Lead Paint Elimination Campaign. It was conducted in Georgia by Gamarjoba 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 Gamarjoba. 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 Gamarjoba 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.

Gamarjoba was established in Tbilisi, Georgia in 2014. Gamrajoba's mission includes the protecting environmental rights, raising awareness, and promoting the harmonization of national legislations on environmental and family issues with international standards. Gamarjoba's activities primarily focus on sustainable development and the protection of women and children.

# 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.[1] Lead is also transferred through breast milk when lead is present in a nursing mother.[2]

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.

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[3] per year. In Georgia, the economic loss is estimated to be 427 million international dollars, or 1.73 percent of Gross Domestic Product (GDP).[4]

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

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. In Georgia, there is currently no regulation in place limiting the amount of lead in paint for household and decorative use.

From June to July 2016, Gamarjoba purchased a total of 37 cans of solvent-based paint intended for home use from stores in Tbilisi, Georgia. The paints represented 15 different brands produced by 13 manufacturers. 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/7420, i.e., through acid digestion of the samples, followed by Flame Atomic Absorption Spectrometry, as recognized by the WHO as appropriate for the purpose.[5] 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.

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

# RESULTS

***12 out of 37 analyzed solvent-based paints for home use [32 percent of paints] were lead paints, i.e., they contained a total lead concentration above 600 parts per million (ppm, dry weight of paint).*** This is also the regulatory limit for lead in decorative paint in South Africa, Brazil and Sri Lanka.

***4 paints [11 percent of paints] contained dangerously high lead concentrations above 10,000 ppm.*** The highest total lead concentration detected was 68,000 ppm in a yellow nitrocellulose-based enamel paint sold for home use.

On the other hand, 20 out of 37 solvent-based paints for home use [54 percent of paints] contained total lead concentrations at, or below 90 ppm, suggesting that the technology exists to produce paint without lead ingredients.

***7 out of 15 analyzed brands [47 percent of paint brands] sold at least one lead paint, i.e., a paint with total lead concentration above 600 ppm.*** 3 out of 15 analyzed brands [20 percent of paint brands] sold at least one lead paint with dangerously high lead concentrations above 10,000 ppm.

Paints containing lead above 600 ppm were manufactured in Georgia, Germany, Russia, Turkey, and Ukraine. The highest lead concentration detected was 68,000 ppm in a yellow Eskim Nitrocellulose-based Enamel Paint sold for home use. This paint was manufactured in Turkey.

***Yellow and red paints most frequently contained dangerously high lead concentrations above 10,000 ppm.*** Of 9 yellow paints, 2 [22 percent of yellow paints] contained lead levels above 10,000 ppm, and of 12 red paints, 2 [17 percent of red paints] contained lead levels above 10,000 ppm.

The ten solvent-based 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 (Country of Manufacture) | Color | Lead Content (ppm) |
|---|---|---|---|---|---|
| 1 | GEG-10 | Eskim | Eskim Kimya San. Ve Tic. AS (Turkey) | yellow | 68,000 |
| 2 | GEG-9 | Eskim | Eskim Kimya San. Ve Tic. AS (Turkey) | red | 19,000 |
| 3 | GEG-14 | Dekor | Chemist ZAO (Russia) | yellow | 11,000 |
| 4 | GEG-13 | Euromax | OOO Litoponi (Georgia) | red | 10,000 |
| 5 | GEG-28 | Barva | PP Oleynikov (Ukraine) | yellow | 9,800 |
| 6 | GEG-2 | Dekart | OO PP Polisan (Ukraine) | yellow | 8,500 |
| 7 | GEG-25 | Kapral | Korostensky Factory Yantar (Ukraine) | yellow | 4,300 |
| 8 | GEG-15 | Dekor | Chemist ZAO (Russia) | white | 2,200 |
| 9 | GEG-16 | Dekor | Chemist ZAO (Russia) | red | 2,100 |
| 10 | GEG-12 | Euromax | OOO Litoponi (Georgia) | white | 1,300 |

***In general, paint can labels did not carry meaningful information about lead content or the hazards of lead paint.*** No paints provided information about lead on their labels and most paints carried little information about any ingredients on can labels. Most paints were merely labeled as "solvents, pigments and resin," with no further details on the type of solvents and pigments [organic or inorganic] provided on paint can labels. Manufacturing dates or batch numbers were included on the labels of all 37 paints [100 percent of paints] included in this study. 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.

# CONCLUSIONS

This study demonstrates that solvent-based paints for home use with high concentrations of lead are widely available in Georgia since the paints included in this study were from brands commonly sold in retail stores all over Georgia. However, the fact that 20 out of 37 paints [54 percent of paints] contained lead concentrations below 90 ppm indicates that the technology to produce paints without added lead exists in Georgia. 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 paints with total lead concentrations greater than 90 ppm.

## RECOMMENDATIONS

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

### *Government and Government Agencies*

The Georgian Parliament's Committee on Environment and Natural Resources should immediately draft a regulation that will ban the manufacture, import, export, distribution, sale and use of paints that contain total lead concentrations exceeding 90 ppm, the most restrictive standard in the world. 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.

### *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 lead 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 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 Georgia.


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