

NATIONAL REPORT

LEAD IN ENAMEL HOUSEHOLD PAINTS IN INDIA IN 2015:

A follow-up study on lead levels in paints analyzed in 2013



Toxics Link
for a toxics-free world



a toxics-free future





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EXECUTIVE SUMMARY

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. Lead is also transferred through breast milk when lead is present in a nursing mother.

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.

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 India lead paint regulation was enacted in 1950 and subsequently revised in 1965, 1975, 1993, 2004 and 2013 respectively and it is voluntary nature.

The paint study was undertaken as part of the Asian Lead Paint Elimination Project. The Asian Lead Paint Elimination Project carries out focused activities to eliminate lead paint from the market in seven project countries – Bangladesh, India, Indonesia, Nepal, Philippines, Sri Lanka, and Thailand.

Findings

A total of 101 cans of new enamel decorative paints were purchased in Delhi-NCR, Maharashtra, West Bengal, Telangana, Andhra Pradesh and Gujarat in India and analyzed for their lead content. Results are given in parts per million (ppm) lead, based on dry weight of the paint. A majority of these paints – 70 out of 101 – were produced by small and medium business and had been found to contain lead levels above 90 ppm in year 2013 analysis. These samples were analyzed again in this study in order to determine whether lead levels had decreased. In addition, 31 paints not previously analyzed, were also added to the current study.

In general, there is very little, if any change in lead levels in paints analyzed both in 2013 and 2015.

- Thirty-two paints (46%) had very high lead concentrations above 10,000 ppm in 2015; compared with 31 paints (44%) in 2013
- Only 3 paints had reduced lead levels to less than 90 ppm as compared to 2013 and could qualify for sale on the international market
- One or more paints from 29 of the 44 brands (66% of the brands) contained dangerously high lead levels above 10,000 ppm in 2015 as compared to 27 brands (61% of the brands) in 2013
- All paint colors, including white, continue to contain high lead levels

Newly analyzed paints also have unacceptably high lead content

- Very high lead concentrations above 10,000 ppm were found in 14 of the 31 paints analyzed (45% of the paints); 26 of the paints contained lead levels above 600 ppm (84% of the paints) and 29 of the paints contained concentrations above 90 ppm (94% of the paints). Only 2 of the 31 paints would qualify for sale on the international market.
- A total 14 paints from 13 brands contained dangerously high lead levels above 10,000 ppm. Only 2 paints of 2 brands produced by SMEs were found to contain lead at levels less than 90 ppm.
- Lead concentrations above 90 ppm were found in all 14 paints of yellow color (100%), 9 out of 11 paints of white color (82%), all 6 of dark colors (blue, phiroza, green and smoke grey). Only 2 out of 11 paints of white color were observed lead level less than 90 ppm.

Conclusions

Since Toxics Link began studying the lead content of paints sold in India in 2007 and advocating for the elimination of lead in paint, most paint brands with the largest market share have reduced the lead content in most paints sold to less than 90 ppm. Brands representing 60 to 70 percent of total market share now sell paint that would meet the most stringent regulation anywhere in the world. This demonstrates that paint with low lead content can be produced cost-effectively in India,

and that companies are willing and able to make the shift. On other hand, small and medium paint manufacturers continue to add lead in their paints.

Additionally, since Toxics Link began investigating lead in decorative paint and advocating for a mandatory lead paint standard, government agencies revised India's voluntary standard downward from 1,000 ppm to 90 ppm. This action demonstrates that government officials have become aware of the danger lead paint poses to young children and the nation's economy and are willing to prevent childhood lead exposure.

Advocacy by Toxics Link also has raised awareness of the hazard of lead paint among consumers. Nevertheless, it remains virtually impossible for consumers to identify which paints contain unacceptable levels of lead.

Recommendations

Government

- Government should establish a national mandatory regulatory framework to control the manufacture, import, export, sale, and use of lead paints and products coated with lead paint immediately
- Government should monitor lead in paint in order to achieve a strict compliance with mandatory standards once established

Paint Industry

- Produce paints without using lead
- Become a part of third party certification
- Include uniform logo on the product

Public Awareness

- Purchase lead free paints from the market
- Be especially aware of paint contents when choosing the paint for children's room

1

BACKGROUND

1.1 Health and Economic Impact of Lead Exposure

Children are exposed to lead from paint when deteriorating paint on walls, windows, doors, or other painted surfaces begins to chip or deteriorate and lead is released to dust and soil. When a surface previously painted with lead paint is sanded or scraped in preparation for repainting, very large amounts of lead-contaminated dusts also are produced and spread and can constitute a severe health hazard.¹

Children playing indoors or outdoors get house dust or soil on their hands, and then ingest it through normal hand-to-mouth behavior. If the house dust or the soil is contaminated with lead, the children ingest lead. Hand-to-mouth behavior is especially prevalent in children aged six years and under, the age group most easily harmed by exposure to lead. A typical one- to six-year-old child ingests between 100 and 400 milligrams of house dust and soil each day.²

In some cases, children pick up paint chips and put them directly into their mouths. This can be especially harmful because the lead content of chips is typically much higher than what is found in dust and soils. When toys, household furniture, or other articles are painted with lead paint, children may chew on them and directly ingest the lead-contaminated, dried paint. Nonetheless, the most common way that children ingest lead is through lead-contaminated dust and soil that gets onto their hands.³

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.⁴ The younger the child, the more harmful lead can be, and children with nutritional deficiencies absorb ingested lead at an increased rate.⁵ The human fetus is the most vulnerable, and a pregnant woman can transfer lead that has accumulated in her body to her developing child.⁶ Lead is also transferred through breast milk when lead is present in a nursing mother.⁷

Once lead enters a child's body through ingestion, inhalation, or across the placenta, it has the potential to damage a number of biological systems and pathways. The primary target is the central nervous system and the brain, but lead can also affect the blood system, the kidneys, and the skeleton.⁸

It is generally agreed that one key element in lead toxicity is its capacity to replace calcium in neurotransmitter systems, proteins, and bone structure, altering function and structure and thereby leading to severe health impacts. Lead is also known to affect and damage cell structure.⁹

According to the World Health Organization (WHO): "Lead has no essential role in the human body, and lead poisoning accounts for about 0.6% of the global burden of disease."¹⁰ Evidence of reduced intelligence caused by childhood exposure to lead has led 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.¹¹

In recent years, medical researchers have been documenting significant health impacts in children from lower and lower levels of lead exposure.¹²⁻¹³ According to WHO: "There is no known safe level of exposure to lead."¹⁴

When a young child is exposed to lead, the harm to her or his nervous system makes it more likely that the child will have difficulties in school and engage in impulsive and violent behavior.¹⁵ Lead exposure in young children is also linked to increased rates of hyperactivity, inattentiveness, failure to graduate from high school, conduct disorder, juvenile delinquency, drug use, and incarceration.¹⁶ Lead exposure impacts on children continue throughout life and have a long-term impact on a child's work performance, and—on average—are related to decreased economic success.

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^b per year.¹⁷ The study considered the neurodevelopmental effects on lead-exposed children, as measured by reduced IQ points, and it correlated lead exposure-related reductions in children's IQ scores to reductions in lifetime economic productivity, as expressed in lifelong earning power. The study identified many different sources of lead exposure in children, with lead paint as one major source. Broken down by region, the economic burden of childhood lead exposure as estimated by this study was:

- Africa: \$134.7 billion of economic loss, or 4.03% of Gross Domestic Product (GDP)
- Latin America and the Caribbean: \$142.3 billion of economic loss, or 2.04% of GDP
- Asia: \$699.9 billion of economic loss, or 1.88% of GDP 1.877 trillion USD (2013)

b. 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. The data from the table (at: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>) was accessed by the report's authors in February 2012.

1.2 The Use of Lead in Paint

Lead is a toxic metal that is found in some paints.

Paints contain lead when the paint manufacturer intentionally adds one or more leaded compounds to the paint for some purpose. A paint product may also contain some amount of lead when paint ingredients contaminated with lead are used, or when there is cross-contamination from other product lines in the same factory. Water-based paints are rarely contaminated with lead, but solvent-based enamel paints have been found to have high lead content in many countries.^{18, 19}

The leaded compounds most commonly added to paints are pigments. Pigments are used to give the paint its color, make the paint opaque (so it covers well), and protect the paint and the underlying surface from degradation caused by exposure to sunlight. Lead-based pigments are sometimes used alone, and sometimes used in combination with other pigments.

Leaded compounds also may be added to enamel paints for use as driers (sometimes called drying agents or catalysts). Leaded compounds are also sometimes added to paints used on metal surfaces to inhibit rust or corrosion. The most common of these is lead tetroxide, sometimes called red lead or minium.

Non-leaded pigments, driers, and anti-corrosive agents have been widely available for decades, and are used by manufacturers producing the highest quality paints. When a paint manufacturer does not intentionally add lead compounds in the formulation of its paints, and takes care to avoid the use of paint ingredients that are contaminated with lead, the lead content of the paint will be very low—less than 90 parts per million (ppm) total lead by dry weight and frequently down to 10 ppm or less.

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. Many also imposed controls on the lead content of paints used on toys and for other applications likely to contribute to lead exposure in children. These regulatory actions were taken based on scientific and medical findings that lead paint is a major source of lead exposure in children, and that lead exposure in children causes serious harm, especially to children aged six years and under.

The use of lead in production of decorative paint is prohibited in the European Union through regulations related to safety of consumer products and specific prohibitions for most leaded raw materials. In the U.S., Canada, Australia and other countries with regulations restricting the use of leaded ingredients in decorative paint, standards specifying a maximum lead limit are in place. The current standard for household paints in the U.S. and Canada is 90 ppm, and adherence to this ensures that a manufacturer can sell its paint anywhere in the world. Some other countries have established standards of 600 ppm.^{20, 21}

1.3 Paint Market and Regulatory Framework in India

Paint Market in India

Over the past few years, the Indian paint market has grown substantially and caught the attention of many international paint manufacturers. The country continues to enjoy a healthy growth rate compared to other economies, due to the increasing level of disposable income, and demand from the infrastructure, industrial and automotive sectors, according to new research report, “Indian Paint Industry Forecast to 2015”.²²

The Indian paint industry is likely to surge from its current level of about Rs. 40,600 crore annually to about Rs. 62,000 crore by 2016, a breathtaking double-digit compound annual growth rate (CAGR) of about 20%. A recent report on “Indian Paint Industry: 2014” reveals that India is the second-largest consumer of paint in Asia. Top players include Asian Paints, Kansai Nerolac Paints, Berger Paints, Akzo Nobel and Shalimar Paints.

The rural market has grown at a rate of around 20% a year (in financial year 2014). The rural sector has a major share of the decorative paints segment. Thus, any benefit to the rural sector due to improving in dispensable income is directly co-related to the growth of the paint industry.

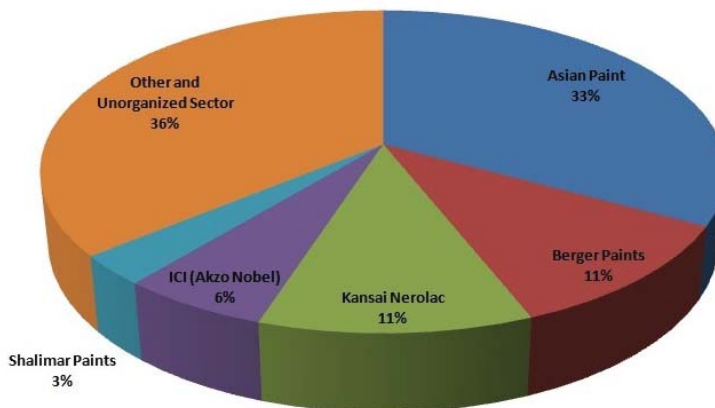
The decorative segment made up nearly 73 percent (at Rs 29,638 crore) at of the paint market while the remaining Rs 10,962 crore was contributed by the industrial segment. “Demands for decorative paints arise from household paintings, architectural and other display products. The demand for paint increases during festive seasons. The major boost to the growth in Indian paint market has been provided by the decorative paint segment, which is anticipated to grow at a CAGR of more than 18% during the period 2014-15, said Mr. D S Rawat, Secretary General Associated Chambers of Commerce and Industry of India (ASSOCHAM).²³

The decorative paint market is further segmented into emulsions, enamel, distemper and cement paints. Similarly, the industrial paint market is also segmented into automotive coating, high performance coating, powder coating and coil coating.

Some of the major reasons for the rise in the paint industry are awareness about environment and increases in disposable income are leading to demand for premium paints. The rising income levels and exposure to global trends have made consumers very aspiring, and they also have become health conscious and interested in using environmental friendly products.²⁴

The unorganized sector accounts for approximately 35% of the paint market, with the organized sector accounting for the balance. In the unorganized segment, there are approximately 2,500 units having small and medium sized paint manufacturing plants. Top organized players include Asian Paints, Kansai Nerolac, Berger Paints, Shalimar Paints and ICI dulux (Akzo Nobel). (Fig. 1)

FIGURE 1 – MARKET SHARE OF MAJOR PAINT MANUFACTURERS IN INDIA



Lead Paint Regulatory Framework

Most highly industrial countries enacted laws, regulations or mandatory standards to protect the health of their people in the 1970's and 1980's. These laws generally prohibit the manufacture, import, sale or use of lead paint for interiors or exteriors of homes, schools and commercial buildings. In recent years, these regulations have become increasingly stringent. The standard adopted by the United States imposes an upper limit of 90 parts per million (ppm) on total lead (dry weight) for house paints and many other paint categories. Other countries have adopted mandatory limits in the range of 90 to 600 ppm total lead (dry weight).

Toxics Link and the NGOs across the globe associated with the IPEN network generally promote the 90-ppm standard and the same value has been revised for household and decorative paint in India by the Bureau of Indian standards.

In India, lead paint regulation was enacted in 1950 and subsequently revised in 1965, 1975, 1993, and 2004, resulting in a voluntary standard of 1000 ppm. However, continuous effort and pressure by Toxics Link resulted in the Bureau of Indian Standards (BIS) revising its voluntary household and decorative paint standards to 90 ppm in 2013.

2

MATERIALS AND METHODS

From October 2014 to February 2015, Toxics Link purchased 101 cans of enamel decorative paints from various stores in India (Fig. 2). These paints from 64 different brands were produced by 51 manufacturers. In most cases, Toxics Link selected one White paint and one or more bright-colored paints such as red, orange or Yellow. The availability of these paints in retail establishments suggested that they were intended to be used within home environments. Excluded were automotive and industrial paints that are not typically used for domestic housing applications or for painting toys.

During the paint sample preparation, information such as color, brand, country where manufactured, purchase details, date manufactured as provided on the label of the paint can was recorded. The formats used for date of manufacturer varied with some companies providing day, month and year and others providing only month and year. In addition, some paint companies used only a single word to describe some colors, such as “red,” while others used “bright red.” Colors were recorded as provided on the can. For the red and yellow paints the protocol called for obtaining “bright” or “strong” red and yellow paints when available. Dates of purchase were recorded in the day/ month/year format in most cases.

Paint sampling preparation kits containing individually numbered, untreated wood pieces, single-use paintbrushes and stirring utensils made

FIGURE 2 – PAINT SAMPLING LOCATIONS



from untreated wood sticks were assembled and shipped to the Toxics Link by the staff of the IPEN partner NGO, Arnika, in the Czech Republic.

Each can of paint was thoroughly stirred and was subsequently applied onto individually numbered triplicates of untreated wood pieces using different unused single-use paintbrushes by the staff of Toxics Link (Fig. 3).

FIGURE 3 – PREPARATION OF PAINT SAMPLE



3

RESULTS

A total of 101 cans of new enamel decorative paints were purchased in Delhi-NCR, Maharashtra, West Bengal, Telangana, Andhra Pradesh and Gujarat in India and analyzed for their lead content. A majority of these paint samples, 70 out of 101, were produced by small and medium businesses and had been found to have high lead content in a 2013 analysis.

Because all paints analyzed in the 2013 study produced by major paint brands (representing 65% of the market) contained lead levels below 90 ppm (see Table 8 in the appendix), the current study only analyzed those paints with lead levels above 90 ppm in order to determine whether small and medium sized paint business also had begun to reduce lead levels in their paints. In addition, 31 new samples, never previously analyzed, also were added to the current study. Results are given in parts per million (ppm) lead, based on dry weight of the paint. Please see Appendix A for full analysis results.

In general, there was very little, if any change in lead levels in analyzed paint samples between 2013 and 2015. A total of 70 paints from 44 brands that contained high lead levels in 2013 were re-analyzed for this study. Detailed results comparing results of the 70 paints analyzed in both 2013 and 2015 are presented in Table 4. Please see Appendix A for full analysis results.

Lead concentrations did not decrease in the paint samples with high lead levels in 2013

- The average concentration of the 70 paint samples in 2015 was 30,000 ppm compared to 20,300 ppm in 2013.
- Thirty-two paints had very high lead concentrations above 10,000 ppm in 2015; compared with 31 paints in 2013
- Only 3 paints had reduced lead levels in 2015 to less than 90 ppm and could qualify for sale on the international market

The number of paint brands producing high lead paint increased between 2013 and 2015

- One or more paint from 29 of the 44 brands (66% of the brands) contained dangerously high lead levels above 10,000 ppm in 2015 compared to 27 brands (61% of the brands) in 2013
- Only 3 paints from 3 brands were found to have reduced lead at levels less than 90 ppm between 2013 and 2015.

All paint colors, including white, continue to have high lead levels

- Lead concentrations above 90 ppm were found in all 28 yellow paints (100%); the same result as in 2013 study.
- A total 36 out of 39 white paints (92%) contained lead levels above 90 ppm, compared to 39 (100%) of the paints in 2013.
- All 3 dark colored paints (mint green and ox blue) had lead levels above 90 ppm in both 2015 and 2013 study. (Fig. 5 and 6)
- The average lead concentration in yellow color paints has increased in 2015 which indicates the use of lead containing raw materials and in white color paints lead concentration has decreased in 2015 indicating use of lead free drier (Fig. 8)

Overall, small and medium size paint producers are producing paint with high lead content in 2015

- Out of the 101 paints representing 64 brands analyzed in 2015, 46 paints from 41 brands (64% of the brands) contain dangerously high lead level above 10,000 ppm. Only 5 paints from 5 brands produced by SMEs were found to contain lead levels less than 90 ppm.
- The majority of paints from all collected colors contain lead concentrations above 90 ppm (Fig. 4, Table 5). Lead concentrations above 90 ppm were found in all 42 yellow paints (100%), 45 out 50 white paints (90%), all 9 dark color paints (blue, green, smoke grey) (100%). (Table 5)
- No manufacturers provided information and or statements about lead on their product labels.

Previously unanalyzed paint samples also have high lead content. Thirty-one paints not previously analyzed were included in the current study.

- Very high lead concentrations above 10,000 ppm were found in 14 of the 31 paints analyzed (45% of the paints); 26 of the paints contained lead levels above 600 ppm (84% of the paints) and 29 of the paints contained concentrations above 90 ppm (94% of the paints). Only 2 of the 31 paints would qualify for sale on the international market.

- A total 14 paints from 13 brands contained dangerously high lead levels above 10,000 ppm. Only 2 paints of 2 brands produced by SMEs were found to contain lead at levels less than 90 ppm.
- Lead concentrations above 90 ppm were found in all 14 yellow paints (100%), 9 out of 11 white paints (82%), all 6 dark colors (blue, phiroza, green and smoke grey). Only 2 out of 11 white paints were observed to have lead level less than 90 ppm. (Fig. 7)

FIGURE 4 – LEAD CONCENTRATIONS IN ALL ANALYZED PAINTS IN 2015 GROUPED ACCORDING TO CONCENTRATION AND COLOR.

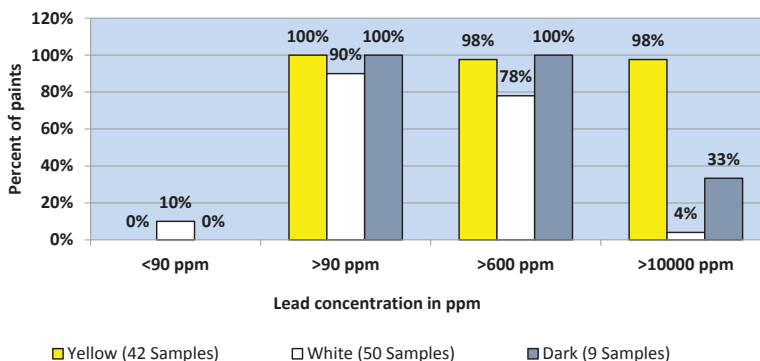


FIGURE 5 – THE 2015 LEAD CONCENTRATIONS IN THE 70 PAINTS ANALYZED IN BOTH 2013 AND 2015 GROUPED ACCORDING TO CONCENTRATION AND COLOR.

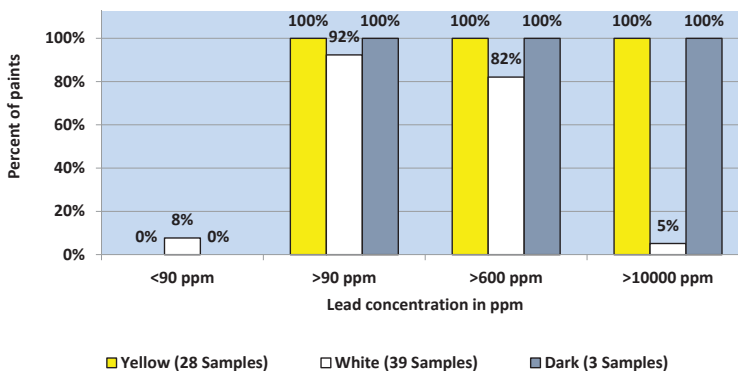


FIGURE 6 – THE 2013 LEAD CONCENTRATIONS IN THE 70 PAINTS ANALYZED IN BOTH 2013 AND 2015 GROUPED ACCORDING TO CONCENTRATION AND COLOR.

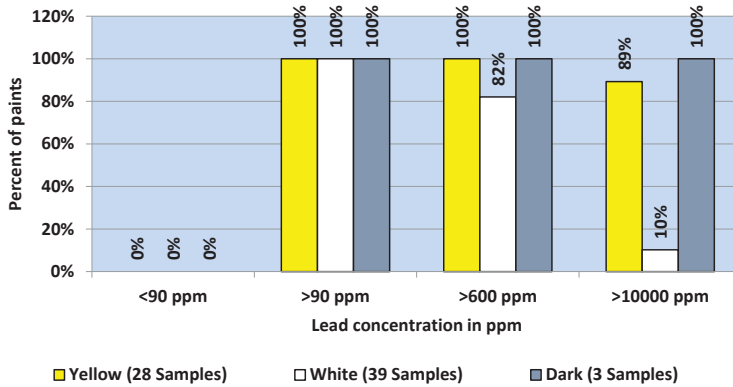


FIGURE 7 – LEAD CONCENTRATIONS IN THE 31 PAINTS ANALYZED ONLY IN 2015 GROUPED ACCORDING TO CONCENTRATION AND COLOR.

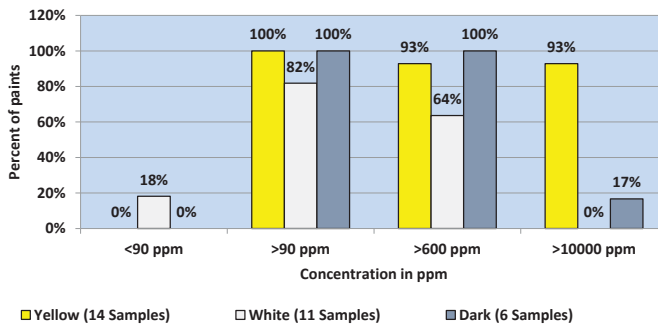
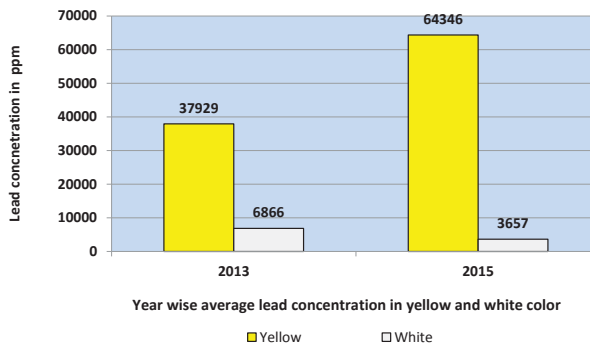


FIGURE 8 – AVERAGE LEAD CONCENTRATION IN YELLOW AND WHITE COLOR IN 2013 AND 2015.



4

DISCUSSION & CONCLUSIONS

Since Toxics Link began studying the lead content of paints sold in India in 2007, most paint brands with the largest market share reduced lead in most paints sold to less than 90 ppm. Brands representing 60-70 percent of total market share now sell paint that would meet the most stringent regulation anywhere in the world. This demonstrates that paint with low lead content can be produced cost-effectively in India, and that companies are willing and able to make the shift.

Additionally, since Toxics Link began investigating lead in decorative paint and advocating for lead paint standards, government agencies revised India's voluntary paint standard downward from 1000 ppm to 90 ppm. These actions demonstrate that government officials have become aware of the danger lead paint poses to young children and the nation's economy and are willing to prevent childhood lead exposure.

Nevertheless, though advocacy by Toxics Link also has raised awareness of the hazard of lead paint among consumers, it remains virtually impossible for consumers to identify which paints contain unacceptable levels of lead, since most companies don't provide information on their labels and those that do can't be independently verified.

Additionally, paint with high lead levels continue to be sold by small and medium-sized manufacturers representing less than 30% of the paint market. These producers often face special barriers in shifting to low lead products and may require additional technical information, better access to suppliers of non-lead paint ingredients and other types of help in re-formulating their products. All lead-containing paints that were applied to surfaces in the past decades continue to represent a hazard when the surfaces where they were applied deteriorate or are scraped or sanded prior to the application of new paints.

5

RECOMMENDATIONS

Government

- Government should establish a national mandatory regulatory framework to control the manufacture, import, export, sale, and use of lead paints and products coated with lead paint immediately
- In the design of the mandatory regulatory framework, consideration should be given to the inclusion of provisions for compliance, monitoring, and enforcement
- Special attention should be given to the elimination of lead decorative paints and lead paints for other applications most likely to contribute to childhood lead exposure
- Monitor in order to achieve stricter compliance with mandatory standards
- Ministry of Environment Forest and Climate Change need to take and appropriate action immediately
- Governments should provide information to the public to reduce health hazards from previously applied paints that contained lead.

Paint Industry

- Produce paints without using lead
- Become a part of third party certification
- Include uniform logo on the product
- Mandatory labeling requirements including information about the hazard associated with disturbing surfaces coated with lead paint when preparing for repainting
- Post information about lead in paint in shops where paint is being sold

Public Awareness

- Purchase lead free paints from the market
- Be especially aware of paint contents when choosing the paint for children's room
- Be aware of health hazards from lead dust that may be created when previously painted surfaces are prepared for repainting.

A

APPENDIX

TABLE 1 – DETAILS OF ALL 101 SOLVENT-BASED, ENAMEL PAINTS ANALYZED IN 2015

| Sample ID | Color of Paint | Paint Can Size | Price of Paint in INR | Date Manufactured | Date of Purchase | Is there website on Label? |
|-----------|----------------|----------------|-----------------------|---------------------------|------------------|----------------------------|
| IND-650 | G. Yellow | 1 L | Rs. 168 | Sept 14 B. No.-010714 | 16/12/2014 | No |
| IND-651 | White | 500ml | Rs.85 | B. No.-121023-Mar 14 | 16/12/2014 | No |
| IND-652 | Yellow | 500ml | Rs.85 | B No.-150914-October 13 | 16/12/2014 | No |
| IND-653 | White | 500ml | Rs.85 | 011410 November 14 | 16/12/2014 | No |
| IND-654 | Snow White | 1L | Rs.185 | B No.-0112-September 2014 | 16/12/2014 | No |
| IND-655 | White | 100ml | Rs.30 | May-13 | 16/12/2014 | No |
| IND-656 | White | 200ml | Rs.40 | September | 16/12/2014 | No |
| IND-657 | White | 1L | Rs.180 | April-2014-B.No.-007 | 16/12/2014 | No |
| IND-658 | White | 100 ml | Rs.36 | Mar-14 | 27/10/2014 | No |
| IND-659 | Yellow | 100 ml | Rs.36 | Mar-14 | 27/10/2014 | No |
| IND-660 | G. Yellow | 50 ml | Rs.22 | Sep-13 | 28/10/2014 | No |
| IND-661 | White | 50 ml | Rs.22 | Sep-13 | 28/10/2014 | No |
| IND-662 | G. Yellow | 500 ml | Rs.50 | May-12 | 29/10/2014 | No |
| IND-663 | White | 200 ml | Rs.50 | Oct-14 | 29/10/2014 | No |
| IND-666 | White | 200ml | Rs.65 | Mar-14 | 29/11/2014 | No |
| IND-667 | G. Yellow | 200ml | Rs.58 | Sep-12 | 29/11/2014 | No |
| IND-668 | G. Yellow | 100 ml | Rs.35.7 | Not Available | 29/11/2014 | No |
| IND-669 | White | 100 ml | Not Available | Not Available | 29/11/2014 | No |
| IND-670 | Bus Green | 200 ml | Rs.56 | Not Available | 29/11/2014 | No |
| IND-671 | G. Yellow | 200ml | Rs.56 | Jun-13 | 29/11/2014 | No |
| IND-672 | White | 50ml | Rs.15 | Not Available | 29/11/2014 | No |
| IND-673 | G. Yellow | 200ml | No Information | No Information | 14/11/2014 | No |
| IND-674 | White | 200ml | No Information | No Information | 14/11/2014 | No |
| IND-675 | White | 500ml | Rs.138 | Jun-14 | 14/11/2014 | No |

| Sample ID | Color of Paint | Paint Can Size | Price of Paint in INR | Date Manufactured | Date of Purchase | Is there website on Label? |
|-----------|----------------|----------------|-------------------------|---------------------------|------------------|----------------------------|
| IND-676 | G. Yellow | 500ml | Rs.90 | Sep-13 | 14/11/2014 | No |
| IND-677 | Smoke Grey | 200ml | Rs.43 | Mar-13 | 14/11/2014 | No |
| IND-678 | White | 200ml | Rs.51 | Jun-14 | 14/11/2014 | No |
| IND-679 | White | 200ml | Rs.40 | Not Mentioned | 14/11/2014 | No |
| IND-680 | Yellow | 200ml | Rs.80 | Sep-14 | 14/11/2014 | No |
| IND-681 | Ox Blue | 50ml | Rs.20 | Not Available | 14/11/2014 | No |
| IND-684 | G. Yellow | 200ml | Rs.77 | B. No. B7508-Pkd. 09/2014 | 14/11/2014 | No |
| IND-699 | G. Yellow | 500 ml | Rs.50 | May-12 | 29/10/2014 | No |
| IND-700 | White | 200 ml | Rs.50 | Oct-14 | 29/10/2014 | No |
| IND-701 | White | 200ml | Rs.73 | Dec-14 | 20/01/2015 | No |
| IND-702 | G. Yellow | 200ml | Rs.70 | Jul-14 | 20/01/2015 | No |
| IND-703 | Blue | 50ml | Not Mentioned | Not Mentioned | 28/10/2014 | Yes |
| IND-704 | White | 100ml | Rs.34 | AWH054 | 28/10/2014 | No |
| IND-705 | Yellow | 50ml | Rs.17 | 01/2014-01-08-2013 | 28/10/2014 | No |
| IND-706 | G. Yellow | 100ml, | Rs.42 | Not Properly Seen | 20/01/2015 | No |
| IND-707 | Pale Yellow | 100ml, | Rs.30 | Not Properly Seen | 20/01/2015 | No |
| IND-708 | G. Yellow | 200ml | Rs.75 | Aug-14 | 20/01/2015 | No |
| IND-709 | G. Yellow | 500ml | Rs.80 | B. No. 007/ 01-10-2013 | 20/01/2015 | No |
| IND-710 | G. Yellow | 200ml | Rs.60 | B. No. 008/April 2013 | 20/01/2015 | No |
| IND-711 | UI White | 50ml | Rs.20.25 | SP-50-Pkd on :Jan 14 | 20/01/2015 | No |
| IND-712 | G. Yellow | 50ml | Not clear | Not clear | 20/01/2015 | No |
| IND-713 | Yellow | 200ml | Rs.55 | Apr-13 | 20/01/2015 | No |
| IND-714 | White | 200ml | Rs.55 | Apr-13 | 20/01/2015 | No |
| IND-715 | G. Yellow | 200ml | Rs.59 | Oct 2014-Lot no. NJ124 | 20/01/2015 | No |
| IND-716 | White | 200ml | Rs.63 | Oct 2014-Lot no. NJ94 | 20/01/2015 | No |
| IND-717 | G. Yellow | 100ml | Not Clear | Not Clear | 20/01/2015 | No |
| IND-718 | White | 100ml | Not Clear | Not Clear | 20/01/2015 | No |
| IND-719 | Blue | 50ml | Not Mentioned | Not Mentioned | 28/10/2014 | Yes |
| IND-720 | White | 50 ml | Rs. 24 | 2014 | 28/10/2014 | No |
| IND-721 | Yellow | 50 ml | Rs. 26 | Feb-14 | 28/10/2014 | No |
| IND-722 | White | 50 ml | Rs. 26 | Apr-14 | 29/10/2014 | No |
| IND-723 | Yellow | 100 ml | Rs. 30 | 13-Dec-11 | 29/10/2014 | No |
| IND-724 | White | 100 ml | Rs. 34 | 01-Jun-12 | 31/10/2014 | No |
| IND-725 | Yellow | 50 ml | Rs 20 (as per retailer) | Not clear | 31/10/2014 | No |

| Sample ID | Color of Paint | Paint Can Size | Price of Paint in INR | Date Manufactured | Date of Purchase | Is there website on Label? |
|-----------|----------------|----------------|-----------------------|-------------------|------------------|----------------------------|
| IND-727 | Yellow | 50 ml | Rs. 13 | Aug-14 | 4/11/2014 | No |
| IND-728 | White | 50 ml | Rs. 27 | Jul-13 | 4/11/2014 | No |
| IND-729 | White | 100 ml | Rs. 30 | 04-Mar | 7/11/2014 | No |
| IND-730 | Pale Cream | 50 ml | Rs. 19 | 29-06-13 | 7/11/2014 | No |
| IND-731 | White | 50 ml | Rs. 20 | 09-08-14 | 14/11/2014 | No |
| IND-732 | Yellow | 50 ml | Rs.20 | Not clear | 14/11/2014 | No |
| IND-733 | White | 50 ml | Rs.25 | Jul-14 | 14/11/2014 | No |
| IND-734 | Yellow | 50 ml | Rs. 35 | Aug-14 | 14/11/2014 | No |
| IND-735 | White | 50 ml | Rs. 35 | Aug-14 | 14/11/2014 | No |
| IND-736 | Yellow | 50 ml | Rs.35 | Aug-14 | 14/11/2014 | No |
| IND-737 | White | 50 ml | Rs. 35 | Aug-14 | 18/11/2014 | No |
| IND-738 | White | 100ml | NA | Not clear | 18/11/2014 | No |
| IND-739 | Yellow | 50 ml | NA | Not clear | 18/11/2014 | No |
| IND-740 | White | 500 ml | Rs.110 | May-14 | 31/12/2014 | No |
| IND-741 | G. Yellow | 200 ml | Rs.60 | Mar. 2012 | 31/12/2014 | No |
| IND-742 | White | 200 ml | Rs.60 | Aug. 2013 | 31/12/2014 | No |
| IND-743 | White | 200 ml | Rs.60 | Jan. 2014 | 31/12/2014 | No |
| IND-744 | Yellow | 200 ml | Rs.60 | May. 2014 | 31/12/2014 | No |
| IND-745 | Yellow | 200 ml | Rs.50 | Aug. 2014 | 31/12/2014 | No |
| IND-746 | White | 200 ml | Rs.50 | Sep. 2014 | 31/12/2014 | No |
| IND-747 | White | 200 ml | Rs.65 | Oct. 2013 | 31/12/2014 | No |
| IND-748 | White | 200 ml | Rs.40 | Nov. 2012 | 31/12/2014 | No |
| IND-749 | White | 200 ml | Rs.40 | Oct. 2014 | 31/12/2014 | No |
| IND-750 | Sky Blue | 200 ml | Rs.40 | Sep. 2014 | 31/12/2014 | No |
| IND-751 | Phiroja | 200 ml | Rs.70 | Oct. 2012 | 31/12/2014 | No |
| IND-752 | Yellow | 200 ml | Rs.70 | July. 2014 | 31/12/2014 | No |
| IND-753 | White | 100ml, | Rs.44 | Nov-14 | 20/01/2015 | No |
| IND-756 | White | 50ml, | Rs.22.5 | Mar-14 | 20/01/2015 | No |
| IND-757 | Yellow | 50ml, | Rs.22.5 | Nov-14 | 21/01/2015 | No |
| IND-760 | Mint Green | 50ml, | Rs.26.5 | Jun-14 | 21/01/2015 | No |
| IND-761 | Br. White | 50ml, | Rs.24.5 | Oct-14 | 21/01/2015 | No |
| IND-762 | Mint Green | 50ml | Rs.35 | Mar-14 | 21/01/2015 | No |
| IND-763 | White | 50ml | Rs.35 | Aug-14 | 21/01/2015 | No |

| Sample ID | Color of Paint | Paint Can Size | Price of Paint in INR | Date Manufactured | Date of Purchase | Is there website on Label? |
|-----------|----------------|----------------|-----------------------|-------------------|------------------|----------------------------|
| IND-764 | White | 50ml, | Rs.22 | Jul-14 | 21/01/2015 | No |
| IND-765 | Yellow | 50ml, | Rs.20 | Apr-14 | 21/01/2015 | No |
| IND-766 | Yellow | 50ml, | Rs.22.5 | Jan-14 | 22/01/2015 | No |
| IND-767 | White | 200ml, | Rs.75 | Mar-14 | 22/01/2015 | No |
| IND-768 | Yellow | 200ml, | Rs.75 | Aug-14 | 22/01/2015 | No |
| IND-771 | G. Yellow | 100ml, | Rs.21 | Aug-14 | 22/01/2015 | No |
| IND-772 | White | 100ml | Rs.22 | Dec-14 | 22/01/2015 | No |
| IND-773 | G. Yellow | 50ml, | Rs.21 | Aug-12 | 22/01/2015 | No |
| IND-774 | White | 50ml | Rs.25 | 20-Oct-14 | 23/01/2015 | No |
| IND-776 | White | 200ml, | Rs.70 | Jun-14 | 23/01/2015 | No |

TABLE 2 – RESULTS OF LAB ANALYSIS OF ALL 101 SOLVENT-BASED ENAMEL PAINTS ANALYZED IN 2015

| Sample ID | Color of Paint | Parts Per Million Lead (dry weight) | Country of Brand Head-quarters | Country Where Manufactured | Is there information on can about lead content of paint? |
|-----------|----------------|-------------------------------------|--------------------------------|----------------------------|--|
| IND-650 | G. Yellow | 56,000 | India | India | No |
| IND-651 | White | 430 | India | India | No |
| IND-652 | Yellow | 68,000 | India | India | No |
| IND-653 | White | 69 | India | India | No |
| IND-654 | Snow White | 3,100 | India | India | No |
| IND-655 | White | 660 | India | India | No |
| IND-656 | White | 330 | India | India | No |
| IND-657 | White | 38 | India | India | No |
| IND-658 | White | 3,800 | India | India | No |
| IND-659 | Yellow | 69,000 | India | India | No |
| IND-660 | G. Yellow | 56,000 | India | India | No |
| IND-661 | White | 3,400 | India | India | No |
| IND-662 | G. Yellow | 102,000 | India | India | No |
| IND-663 | White | 3,800 | India | India | No |
| IND-666 | White | 3,200 | India | India | No |
| IND-667 | G. Yellow | 37,000 | India | India | No |
| IND-668 | G. Yellow | 14,300 | India | India | No |
| IND-669 | White | 3,400 | India | India | No |
| IND-670 | Bus Green | 46,000 | India | India | No |
| IND-671 | G. Yellow | 43,000 | India | India | No |
| IND-672 | White | 1,230 | India | India | No |
| IND-673 | G. Yellow | 50,000 | India | India | No |
| IND-674 | White | 6,200 | India | India | No |
| IND-675 | White | 5,500 | India | India | No |
| IND-676 | G. Yellow | 61,000 | India | India | No |
| IND-677 | Smoke Grey | 2,300 | India | India | No |
| IND-678 | White | 3,700 | India | India | No |
| IND-679 | White | 3,000 | India | India | No |
| IND-680 | Yellow | 77,000 | India | India | No |
| IND-681 | Ox Blue | 3,000 | India | India | No |
| IND-684 | G. Yellow | 530 | India | India | No |
| IND-699 | G. Yellow | 97,000 | India | India | No |
| IND-700 | White | 3,800 | India | India | No |

| Sample ID | Color of Paint | Parts Per Million Lead (dry weight) | Country of Brand Head-quarters | Country Where Manufactured | Is there information on can about lead content of paint? |
|-----------|----------------|-------------------------------------|--------------------------------|----------------------------|--|
| IND-701 | White | 3,000 | India | India | No |
| IND-702 | G. Yellow | 52,000 | India | India | No |
| IND-703 | Blue | 840 | India | India | Yes |
| IND-704 | White | 27 | India | India | No |
| IND-705 | Yellow | 127,000 | India | India | No |
| IND-706 | G. Yellow | 38,000 | India | India | No |
| IND-707 | Pale Yellow | 28,000 | India | India | No |
| IND-708 | G. Yellow | 19,400 | India | India | No |
| IND-709 | G. Yellow | 26,000 | India | India | No |
| IND-710 | G. Yellow | 44,000 | India | India | No |
| IND-711 | UI White | 1,030 | India | India | No |
| IND-712 | G. Yellow | 116,000 | India | India | No |
| IND-713 | Yellow | 65,000 | India | India | No |
| IND-714 | White | 188 | India | India | No |
| IND-715 | G. Yellow | 69,000 | India | India | No |
| IND-716 | White | 490 | India | India | No |
| IND-717 | G. Yellow | 49,000 | India | India | No |
| IND-718 | White | 2,500 | India | India | No |
| IND-719 | Blue | 2,100 | India | India | Yes |
| IND-720 | White | 3,200 | India | India | No |
| IND-721 | Yellow | 59,000 | India | India | No |
| IND-722 | White | 5,800 | India | India | No |
| IND-723 | Yellow | 50,000 | India | India | No |
| IND-724 | White | 5,700 | India | India | No |
| IND-725 | Yellow | 56,000 | India | India | No |
| IND-727 | Yellow | 58,000 | India | India | No |
| IND-728 | White | 10,400 | India | India | No |
| IND-729 | White | 710 | India | India | No |
| IND-730 | Pale Cream | 7,000 | India | India | No |
| IND-731 | White | 5,500 | India | India | No |
| IND-732 | Yellow | 86,000 | India | India | No |
| IND-733 | White | 4,100 | India | India | No |
| IND-734 | Yellow | 87,000 | India | India | No |
| IND-735 | White | 1,640 | India | India | No |

| Sample ID | Color of Paint | Parts Per Million Lead (dry weight) | Country of Brand Head-quarters | Country Where Manufactured | Is there information on can about lead content of paint? |
|-----------|----------------|-------------------------------------|--------------------------------|----------------------------|--|
| IND-736 | Yellow | 94,000 | India | India | No |
| IND-737 | White | 5,500 | India | India | No |
| IND-738 | White | 3,400 | India | India | No |
| IND-739 | Yellow | 99,000 | India | India | No |
| IND-740 | White | 10,200 | India | India | No |
| IND-741 | G. Yellow | 61,000 | India | India | No |
| IND-742 | White | 2,500 | India | India | No |
| IND-743 | White | 43 | India | India | No |
| IND-744 | Yellow | 58,000 | India | India | No |
| IND-745 | Yellow | 75,000 | India | India | No |
| IND-746 | White | 8,200 | India | India | No |
| IND-747 | White | 4,700 | India | India | No |
| IND-748 | White | 2,600 | India | India | No |
| IND-749 | White | 5,500 | India | India | No |
| IND-750 | Sky Blue | 2,500 | India | India | No |
| IND-751 | Phiroja | 3,100 | India | India | No |
| IND-752 | Yellow | 84,000 | India | India | No |
| IND-753 | White | 82 | India | India | No |
| IND-756 | White | 94 | India | India | No |
| IND-757 | Yellow | 86,000 | India | India | No |
| IND-760 | Mint Green | 77,000 | India | India | No |
| IND-761 | Br. White | 3,900 | India | India | No |
| IND-762 | Mint Green | 77,000 | India | India | No |
| IND-763 | White | 5,100 | India | India | No |
| IND-764 | White | 4,200 | India | India | No |
| IND-765 | Yellow | 74,000 | India | India | No |
| IND-766 | Yellow | 92,000 | India | India | No |
| IND-767 | White | 3,200 | India | India | No |
| IND-768 | Yellow | 109,000 | India | India | No |
| IND-771 | G. Yellow | 78,000 | India | India | No |
| IND-772 | White | 470 | India | India | No |
| IND-773 | G. Yellow | 118,000 | India | India | No |
| IND-774 | White | 4,000 | India | India | No |
| IND-776 | White | 2,900 | India | India | No |

TABLE 3 – DISTRIBUTION OF LEAD CONCENTRATION BY BRAND OF ALL 101 SOLVENT-BASED ENAMEL PAINTS ANALYZED IN 2015.

| Sample ID | Number of Paints | Number of Paints Above 90 ppm lead | Number of Paints Above 600 ppm Lead | Number of Paints Above 10,000 ppm lead | Minimum Lead Content (ppm) | Maximum Lead Content (ppm) |
|------------------------------------|------------------|------------------------------------|-------------------------------------|--|----------------------------|----------------------------|
| IND-650, IND-651 | 2 | 2 | 1 | 1 | 430 | 56,000 |
| IND-652, IND-653 | 2 | 1 | 1 | 1 | 69 | 68,000 |
| IND-654 | 1 (White) | 1 | 1 | 0 | 3,100 | 3,100 |
| IND-655, IND-656 | 2 | 2 | 1 | 0 | 330 | 660 |
| IND-657 | 1 (White) | 0 | 0 | 0 | 38 | 38 |
| IND-658, IND-659 | 2 | 2 | 2 | 1 | 3,800 | 69,000 |
| IND-660, IND-661 | 2 | 2 | 2 | 1 | 3,400 | 56,000 |
| IND-662, IND-663, IND-699, IND-700 | 4 | 4 | 4 | 2 | 3,800 | 102,000 |
| IND-666, IND-667 | 2 | 2 | 2 | 1 | 3,200 | 37,000 |
| IND-668, IND-669, IND-670 | 3 | 3 | 3 | 2 | 3,400 | 46,000 |
| IND-671 | 1 (G. Yellow) | 1 | 1 | 1 | 43,000 | 43,000 |
| IND-672 | 1 (White) | 1 | 1 | 0 | 1,230 | 1,230 |
| IND-673, IND-674 | 2 | 2 | 2 | 1 | 6,200 | 50,000 |
| IND-675 | 1 (White) | 1 | 1 | 0 | 5,500 | 5,500 |
| IND-676 | 1 (Yellow) | 1 | 1 | 1 | 61,000 | 61,000 |
| IND-677 | 1 (Grey) | 1 | 1 | 0 | 2,300 | 2,300 |
| IND-678 | 1 (White) | 1 | 1 | 0 | 3,700 | 3,700 |
| IND-679 | 1 (White) | 1 | 1 | 0 | 3,000 | 3,000 |
| IND-680 | 1 (Yellow) | 1 | 1 | 1 | 77,000 | 77,000 |
| IND-681 | 1 (Blue) | 1 | 1 | 0 | 3,000 | 3,000 |
| IND-684 | 1 (Yellow) | 1 | 0 | 0 | 530 | 530 |
| IND-701, IND-702 | 2 | 2 | 2 | 1 | 3,000 | 52,000 |
| IND-703, IND-719 | 2 | 2 | 2 | 0 | 840 | 2,100 |
| IND-704 | 1 (White) | 0 | 0 | 0 | 27 | 27 |
| IND-705 | 1 (Yellow) | 1 | 1 | 1 | 127,000 | 127,000 |
| IND-706 | 1 (Yellow) | 1 | 1 | 1 | 38,000 | 38,000 |
| IND-707 | 1 (Yellow) | 1 | 1 | 1 | 28,000 | 28,000 |
| IND-708 | 1 (Yellow) | 1 | 1 | 1 | 19,400 | 19,400 |
| IND-709, IND-710 | 2 | 2 | 2 | 2 | 26,000 | 44,000 |
| IND-711 | 1 (White) | 1 | 1 | 0 | 1,030 | 1,030 |

| Sample ID | Number of Paints | Number of Paints Above 90 ppm lead | Number of Paints Above 600 ppm Lead | Number of Paints Above 10,000 ppm lead | Minimum Lead Content (ppm) | Maximum Lead Content (ppm) |
|------------------------------------|------------------|------------------------------------|-------------------------------------|--|----------------------------|----------------------------|
| IND-712 | 1 (Yellow) | 1 | 1 | 1 | 116,000 | 116,000 |
| IND-713, IND-714 | 2 | 2 | 1 | 1 | 188 | 65,000 |
| IND-715, IND-716 | 2 | 2 | 1 | 1 | 490 | 69,000 |
| IND-717, INF-718 | 2 | 2 | 2 | 1 | 2,500 | 49,000 |
| IND-720 | 1 (White) | 1 | 1 | 0 | 3,200 | 3,200 |
| IND-721, IND-722 | 2 | 2 | 2 | 1 | 5,800 | 59,000 |
| IND-723, IND-724 | 2 | 2 | 2 | 1 | 5,700 | 50,000 |
| IND-725 | 1 (Yellow) | 1 | 1 | 1 | 56,000 | 56,000 |
| IND-727, IND-728 | 2 | 2 | 2 | 2 | 10,400 | 58,000 |
| IND-729 | 1 (White) | 1 | 1 | 0 | 710 | 710 |
| IND-730, IND-731 | 2 | 2 | 2 | 0 | 5,500 | 7,000 |
| IND-732 | 1 (Yellow) | 1 | 1 | 1 | 86,000 | 86,000 |
| IND-733 | 1 (White) | 1 | 1 | 0 | 4,100 | 4,100 |
| IND-734, IND-735 | 2 | 2 | 2 | 1 | 1,640 | 87,000 |
| IND-736, IND-737 | 2 | 2 | 2 | 1 | 5,500 | 94,000 |
| IND-738 | 1 (White) | 1 | 1 | 0 | 3,400 | 3,400 |
| IND-739 | 1 (Yellow) | 1 | 1 | 1 | 99,000 | 99,000 |
| IND-740 | 1 (White) | 1 | 1 | 1 | 10,200 | 10,200 |
| IND-741, IND-742 | 2 | 2 | 2 | 1 | 2,500 | 61,000 |
| IND-743, IND-744 | 2 | 1 | 1 | 1 | 43 | 58,000 |
| IND-745, IND-746 | 2 | 2 | 2 | 1 | 8,200 | 75,000 |
| IND-747 | 1 (White) | 1 | 1 | 0 | 4,700 | 4,700 |
| IND-748 | 1 (White) | 1 | 1 | 1 | 2,600 | 2,600 |
| IND-749, IND-750 | 2 | 2 | 2 | 0 | 2,500 | 5,500 |
| IND-752, IND-752 | 2 | 2 | 2 | 1 | 3,100 | 84,000 |
| IND-753 | 1 (White) | 0 | 0 | 0 | 82 | 82 |
| IND-756, IND-757 | 2 | 2 | 1 | 1 | 94 | 86,000 |
| IND-760, IND-761 | 2 | 2 | 2 | 1 | 3,900 | 77,000 |
| IND-762, IND-763 | 2 | 2 | 2 | 1 | 5,100 | 77,000 |
| IND-764, IND-765, IND-771, IND-772 | 4 | 4 | 3 | 2 | 470 | 78,000 |
| IND-766 | 1 (Yellow) | 1 | 1 | 1 | 92,000 | 92,000 |
| IND-767, IND-768 | 2 | 2 | 2 | 1 | 3,200 | 109,000 |
| IND-773 | 1 (Yellow) | 1 | 1 | 1 | 118,000 | 118,000 |
| IND-774, IND-776 | 2 | 2 | 2 | 0 | 2,900 | 4,000 |

TABLE 4 – COMPARISON OF LEAD CONCENTRATION BY BRAND FOR SOLVENT-BASED ENAMEL PAINTS INCLUDED IN BOTH THE 2013 AND 2015 STUDY (70 PAINTS)

| Sample ID | Number of Paints | Number of Paints Above 90 ppm lead | | Number of Paints Above 600 ppm lead | | Number of Paints Above 10,000 ppm lead | | Minimum Lead Content (ppm) | | Maximum Lead Content (ppm) | |
|------------------------------------|------------------|------------------------------------|------|-------------------------------------|------|--|------|----------------------------|--------|----------------------------|---------|
| | | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 |
| IND-650, IND-651 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 450 | 430 | 26,000 | 56,000 |
| IND-652, IND-653 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 47,000 | 68,000 | 47,000 | 68,000 |
| IND-654 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 3,700 | 3,100 | 3,700 | 3,100 |
| IND-655, IND-656 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 710 | 330 | 710 | 660 |
| IND-657 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 580 | 38 | 580 | 38 |
| IND-658, IND-659 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2,500 | 3,800 | 29,000 | 69,000 |
| IND-660, IND-661 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 3,400 | 3,400 | 115,000 | 56,000 |
| IND-662, IND-663, IND-699, IND-700 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 4,100 | 3,800 | 4,100 | 102,000 |
| IND-666, IND-667 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1,700 | 3,200 | 10,800 | 37,000 |
| IND-668, IND-669 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 2,500 | 3,400 | 29,000 | 14,300 |
| IND-672 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1,650 | 1,230 | 1,650 | 1,230 |
| IND-673, IND-674 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2,500 | 6,200 | 28,000 | 50,000 |
| IND-675 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 4,000 | 5,500 | 4,000 | 5,500 |
| IND-681 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 3,900 | 3,000 | 3,900 | 3,000 |
| IND-702 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 24,000 | 52,000 | 24,000 | 52,000 |
| IND-706 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 57,000 | 38,000 | 57,000 | 38,000 |
| IND-707 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 4,700 | 28,000 | 4,700 | 28,000 |
| IND-708 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 65,000 | 19,400 | 65,000 | 19,400 |
| IND-720 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 6,400 | 3,200 | 6,400 | 3,200 |
| IND-721, IND-722 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1,410 | 5,800 | 27,000 | 59,000 |
| IND-723, IND-724 | 2 | 2 | 2 | 2 | 2 | 0 | 1 | 2,800 | 5,700 | 6,900 | 50,000 |
| IND-725 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 19,800 | 56,000 | 19,800 | 56,000 |

| Sample ID | Number of Paints | Number of Paints Above 90 ppm lead | | Number of Paints Above 600 ppm lead | | Number of Paints Above 10,000 ppm lead | | Minimum Lead Content (ppm) | | Maximum Lead Content (ppm) | |
|------------------------------------|------------------|------------------------------------|------|-------------------------------------|------|--|------|----------------------------|--------|----------------------------|---------|
| | | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 |
| IND-727, IND-728 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 10,600 | 10,400 | 27,000 | 58,000 |
| IND-729 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 250 | 710 | 250 | 710 |
| IND-730, IND-731 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 6,900 | 5,500 | 15,600 | 7,000 |
| IND-732 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 33,000 | 86,000 | 33,000 | 86,000 |
| IND-733 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2,100 | 4,100 | 2,100 | 4,100 |
| IND-734, IND-735 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 195 | 1,640 | 20,000 | 87,000 |
| IND-736, IND-737 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2,200 | 5,500 | 95,000 | 94,000 |
| IND-738 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 2,500 | 3,400 | 2,500 | 3,400 |
| IND-740 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 138 | 10,200 | 138 | 10,200 |
| IND-741, IND-742 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2,300 | 2,500 | 47,000 | 61,000 |
| IND-743, IND-744 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 3,300 | 43 | 16,500 | 58,000 |
| IND-745, IND-746 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 64,000 | 8,200 | 80,000 | 75,000 |
| IND-747 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 6,400 | 4,700 | 6,400 | 4,700 |
| IND-748 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 3,600 | 2,600 | 3,600 | 2,600 |
| IND-749, IND-750 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 3,600 | 5,500 | 3,600 | 5,500 |
| IND-752, IND-752 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 53,000 | 84,000 | 53,000 | 84,000 |
| IND-753 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 147 | 82 | 147 | 82 |
| IND-756, IND-757 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 112 | 94 | 55,000 | 86,000 |
| IND-760, IND-761 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 4,600 | 3,900 | 13,600 | 77,000 |
| IND-762, IND-763 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 3,800 | 5,100 | 76,000 | 77,000 |
| IND-764, IND-765, IND-771, IND-772 | 4 | 4 | 4 | 4 | 3 | 2 | 2 | 1,320 | 470 | 1,320 | 78,000 |
| IND-767, IND-768 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 3,900 | 3,200 | 44,000 | 109,000 |

TABLE 5 – LEAD CONCENTRATION (PPM) BY COLOR FOR ALL 101 SOLVENT-BASED ENAMEL PAINTS

| Color | Number of Samples | Average Parts per Million (ppm) Lead | Number of Samples Above 90 ppm Lead | Number of Samples Above 600 ppm Lead | Number of Samples Above 10,000 ppm Lead | Minimum ppm | Maximum ppm |
|--------------------------------|-------------------|--------------------------------------|-------------------------------------|--------------------------------------|---|-------------|-------------|
| Yellow | 42 | 66,400 | 42 | 41 | 41 | 530 | 127,000 |
| White | 50 | 3,270 | 45 | 39 | 2 | 27 | 10,400 |
| Dark Color (Blue, Green, Grey) | 9 | 23,800 | 9 | 9 | 3 | 840 | 77,000 |

TABLE 6– COMPARISON OF LEAD CONCENTRATION (PPM) BY COLOR FOR SOLVENT-BASED ENAMEL PAINTS INCLUDED IN BOTH THE 2013 AND 2015 STUDY (70 PAINTS)

| Color | Number of Samples | Average Parts per Million (ppm) Lead | | Number of Samples Above 90 ppm Lead | | Number of Samples Above 600 ppm Lead | | Number of Samples Above 10,000 ppm Lead | | Minimum ppm | | Maximum ppm | |
|--------|-------------------|--------------------------------------|--------|-------------------------------------|------|--------------------------------------|------|---|------|-------------|--------|-------------|---------|
| | | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 | 2013 | 2015 |
| Yellow | 28 | 37,929 | 64,346 | 28 | 28 | 28 | 28 | 25 | 28 | 1,320 | 14,300 | 115,000 | 109,000 |
| White | 39 | 6,866 | 3,657 | 39 | 36 | 32 | 32 | 4 | 2 | 112 | 38 | 80,000 | 10,400 |
| Dark | 3 | 31,167 | 52,333 | 3 | 3 | 3 | 3 | 2 | 2 | 3,900 | 3,000 | 76,000 | 77,000 |

TABLE 7 – CONSUMER INFORMATION ABOUT LEAD ON PAINT CANS

| | Number of Samples | Lead content or other lead information on the label (yes/no) | Independent, third party certification of “lead safe” claims? (yes/no) | Information about lead hazard to children (yes/no) | Information about lead hazard when painting or remodeling (yes/no) | Specific language about lead on label |
|------------------------------------|-------------------|--|--|--|--|---------------------------------------|
| IND-650, IND-651 | 2 | No | No | No | No | No |
| IND-652, IND-653 | 2 | No | No | No | No | No |
| IND-654 | 1 | No | No | No | No | No |
| IND-655, IND-656 | 2 | No | No | No | No | No |
| IND-657 | 1 | No | No | No | No | No |
| IND-658, IND-659 | 2 | No | No | No | No | No |
| IND-660, IND-661 | 2 | No | No | No | No | No |
| IND-662, IND-663, IND-699, IND-700 | 4 | No | No | No | No | No |
| IND-666, IND-667 | 2 | No | No | No | No | No |
| IND-668, IND-669, IND-670 | 3 | No | No | No | No | No |
| IND-671 | 1 | No | No | No | No | No |
| IND-672 | 1 | No | No | No | No | No |
| IND-673, IND-674 | 2 | No | No | No | No | No |
| IND-675 | 1 | No | No | No | No | No |
| IND-676 | 1 | No | No | No | No | No |
| IND-677 | 1 | No | No | No | No | No |
| IND-678 | 1 | No | No | No | No | No |
| IND-679 | 1 | No | No | No | No | No |
| IND-680 | 1 | No | No | No | No | No |
| IND-681 | 1 | No | No | No | No | No |
| IND-684 | 1 | Yes | No added lead | No | No | No |
| IND-701, IND-702 | 2 | No | No | No | No | No |
| IND-703, IND-719 | 2 | Yes | No added lead | No | No | No |
| IND-704 | 1 | No | No | No | No | No |
| IND-705 | 1 | No | No | No | No | No |
| IND-706 | 1 | No | No | No | No | No |

| | Number of Samples | Lead content or other lead information on the label (yes/no) | Independent, third party certification of "lead safe" claims? (yes/no) | Information about lead hazard to children (yes/no) | Information about lead hazard when painting or remodeling (yes/no) | Specific language about lead on label |
|------------------|-------------------|--|--|--|--|---------------------------------------|
| IND-707 | 1 | No | No | No | No | No |
| IND-708 | 1 | No | No | No | No | No |
| IND-709, IND-710 | 2 | No | No | No | No | No |
| IND-711 | 1 | No | No | No | No | No |
| IND-712 | 1 | No | No | No | No | No |
| IND-713, IND-714 | 2 | No | No | No | No | No |
| IND-715, IND-716 | 2 | No | No | No | No | No |
| IND-717, INF-718 | 2 | No | No | No | No | No |
| IND-720 | 1 | No | No | No | No | No |
| IND-721, IND-722 | 2 | No | No | No | No | No |
| IND-723, IND-724 | 2 | No | No | No | No | No |
| IND-725 | 1 | No | No | No | No | No |
| IND-727, IND-728 | 2 | No | No | No | No | No |
| IND-729 | 1 | No | No | No | No | No |
| IND-730, IND-731 | 2 | No | No | No | No | No |
| IND-732 | 1 | No | No | No | No | No |
| IND-733 | 1 | No | No | No | No | No |
| IND-734, IND-735 | 2 | No | No | No | No | No |
| IND-736, IND-737 | 2 | No | No | No | No | No |
| IND-738 | 1 | No | No | No | No | No |
| IND-739 | 1 | No | No | No | No | No |
| IND-740 | 1 | No | No | No | No | No |
| IND-741, IND-742 | 2 | No | No | No | No | No |
| IND-743, IND-744 | 2 | No | No | No | No | No |
| IND-745, IND-746 | 2 | No | No | No | No | No |
| IND-747 | 1 | No | No | No | No | No |
| IND-748 | 1 | No | No | No | No | No |
| IND-749, IND-750 | 2 | No | No | No | No | No |
| IND-752, IND-752 | 2 | No | No | No | No | No |
| IND-753 | 1 | No | No | No | No | No |

| | Number of Samples | Lead content or other lead information on the label (yes/no) | Independent, third party certification of "lead safe" claims? (yes/no) | Information about lead hazard to children (yes/no) | Information about lead hazard when painting or remodeling (yes/no) | Specific language about lead on label |
|------------------------------------|-------------------|--|--|--|--|---------------------------------------|
| IND-756,IND-757 | 2 | No | No | No | No | No |
| IND-760, IND-761 | 2 | No | No | No | No | No |
| IND-762, IND-763 | 2 | No | No | No | No | No |
| IND-764, IND-765, IND-771, IND-772 | 4 | No | No | No | No | No |
| IND-767, IND-768 | 2 | No | No | No | No | No |
| IND-766 | 1 | No | No | No | No | No |
| IND-773 | 1 | No | No | No | No | No |
| IND-774, IND-776 | 2 | No | No | No | No | No |

TABLE 8 – PAINT SAMPLES ANALYZED IN 2013 HAS LEAD LEVEL LESS THAN 90 PPM

| Product Brand Name/Paint Type | Paint Color | Lead Concentration in 2013 study |
|-------------------------------|---------------|----------------------------------|
| Nerolac | Brill White | 8 |
| ICI Dulux | Blazing White | 8 |
| ICI Dulux | Golden Yellow | 8 |
| Berger Luxol | Golden Yellow | 9 |
| Homecare Premium | Ultra White | 12 |
| Amul | White | 12 |
| Shalimar | Dazz White | 13 |
| Nerolac | Golden Yellow | 15 |
| Berger Luxol | Snow White | 17 |
| Shalimar | Golden Yellow | 18 |
| British Paint | Ultra White | 25 |
| Asian Paint Premium | G. Yellow | 29 |
| Asian Paint Premium | Blz White | 32 |
| Vitty | Yellow | 34 |
| Emerald | White | 34 |
| Libra | White | 42 |
| Rolac | white | 44 |
| Asha Lite | Br. White | 45 |
| Kalpana | yellow | 47 |
| Kalpana | white | 53 |
| Homecare Premium | Golden Brown | 60 |
| Rayol Gold | White | 70 |
| Maruti Delux | White | 71 |
| Snowlac | P. O. Red | 72 |
| British Paint | Smoke Grey | 73 |
| Aqua | White | 77 |

B

APPENDIX

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Toxics Link
for a toxics-free world

Toxics Link is an Indian environmental research and advocacy organization set up in 1996, engaged in disseminating information to help strengthen campaign against toxics pollution, provide cleaner alternatives and bring together groups and people affected by this problem. Toxics Link's Mission Statement is "Working together for environmental justice and freedom from toxics. We have taken upon ourselves to collect and share both information about the sources and the dangers of poisons in our environment and bodies, and information about clean and sustainable alternatives for India and the rest of the world"



IPEN is an international NGO network of health and environmental organizations from all regions of the world in which Toxics Link participates. 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.

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