Lead Paint Elimination Experience
Pacific Paint (Boysen) Philippines, Inc.,

- Founded in 1953
- Leading architectural paint manufacturer in the Philippines
- 2015-16 Turnover ~ USD 283 million
- Estimated market share: 60 – 70%
Pacific Paint (Boysen) Philippines, Inc.,

51st largest paint company globally (Coatings World 2017)

17th largest in Asia-Pacific (Asia Pacific Coatings Journal 2017)

Member of

![Nova Paint Club Logo]
Environmental Initiatives

- First Filipino company to
  - Phase out mercury in latex paints (1970s)
  - Have an ISO 14001 certified plant (2005)
  - Introduce water based primer and epoxy (first in SE Asia)
  - Introduce low VOC paints (2006)
- We realized continued use of lead in paint was completely inconsistent with our green efforts
Added Lead in Paint

- Lead based raw materials traditionally used in oil based enamels:
  - As oil drying agents: Lead octoate 36%
  - As anti-corrosive pigments: Red Lead and Zinc Chromate Pigments for metal primers
  - As color pigments: Lead Chromate Pigments Chrome Yellows and Green, Molybdate Red and Orange
Voluntary Phase Out

- Majority of Decorative Paint is water based, where lead containing raw materials are not commonly used.
- We realized a small component of our total sales could compromise customer trust:
  - Pb driers were being used in 30% of our products.
  - Red Lead and Zinc Chromate pigments in ~ 1% of our products.
  - Chrome Yellow / Green and Molybdate Orange Pigments in ~ 0.6% of our products.
Voluntary Phase Out

- In 2007, we decided to voluntary phase out our use of lead based raw materials.

- Our strategy for eliminating lead in paint:
  - Phase out Pb driers
  - Phase out Red Lead and Zinc Chromate pigments
  - Phase out Chrome Yellow / Green and Molybdate Orange Pigment

- Total process took about 18 months.
Voluntary Phase Out

- Pb (internal) driers are usually used in combination with Cobalt (surface) and Calcium (auxiliary) driers.
- Total cost component of the Pb drier is usually less than 1% of total formulation.
- Pb driers can be easily replaced by Zirconium drier (also Strontium).
- Even if per kg price of Zr 24% is > Pb 36%, there should be NO SIGNIFICANT DIFFERENCE in total formulation cost.
Voluntary Phase Out

- Phase out Red Lead and Zinc Chromate Primers
- Sales foregone ~ USD 1.2 million
- Fortunately customers were willing to use Red Oxide Primer or Epoxy Primer as replacement
- According to supplier of red lead pigment, our lost purchases were not compensated by other paint companies
Voluntary Phase Out

- Chrome Yellow and Molybdate Orange replacement with organic pigments were most technically challenging

- We committed to maintain color and performance but had to increase selling prices:
  - Lemon Yellow Enamel: 20% increase
  - Lemon Yellow Colorant: 45% increase
  - Orange Enamel: 75% increase

- Long run trend for sales were not negatively affected
Voluntary Phase Out

- By 2009 we completely stopped using raw materials with lead
- We started using Pb logo in our packaging
- We also asked our tin can manufacturers to comply with ROCHE requirements to ensure lead free packaging
Group seeks to eliminate lead in paint

Published May 12, 2009 5:40pm

MANILA, Philippines - After eliminating lead in gasoline sold in all waste and pollution watchdog now seeks to phase out the same.

The EcoWaste Coalition proposed a “national partnership” to phasing out 25 assorted paint samples that the group sent to India as part of the lead in paints showed high concentrations of the heavy metal.

Lead is a known neurotoxicant that has been blamed for reduced developmental delays, speech and language problems and other growing children.

The group partnered with India-based Toxics Link and US-based IPEN to find out the lead concentrations in major paint developing countries, including the Philippines.

'Most paints have high lead levels'

By Rhodina Villanueva | Updated November 12, 2010 - 12:00am

MANILA, Philippines - Laboratory tests show that 69 percent of household enamel paints sold locally exceed the standard for lead levels in paint set by the United States, the group EcoWaste Coalition said yesterday.

EcoWaste’s Manny Calonzo said 24 out of 35 paint samples the group bought in local hardware shops and sent to the University of Cincinnati (UC) in Ohio for testing exceeded the US lead in paint standard of 90 parts per million (ppm). More than one half of the samples had lead levels 100 times greater than the US standard.

“The high concentrations of lead in our paints underscores the need for a national regulation that will curb the presence of this toxic substance in paints to make them safe for children who are most vulnerable to lead poisoning,” he said.

UC professor Scott Clark said the fact that 12 out of 35 of the paints tested – including a yellow paint, a color that is often high in lead – meet the current US standard “is evidence that substitutes for lead in paint do exist in the Philippines and that it is technologically and economically feasible to manufacture high-quality paints sans lead additives.”
Lead in Paint Elimination - Industry

- Philippine Association of Paint Manufacturers (PAPM): industry association with 23 paint manufacturers covering > 95% of total paint production
- Member companies understood that continued use of lead in paint would damage the reputation of the whole industry
- Phasing out lead in paint had to be done as an industry to keep ‘level playing field’
SMEs have less technical resources and are not usually visited by technical experts of leading global companies.
PAPM assisted these companies by offering Elimination of Lead in Paint Technical Symposia during 2012 and 2013 Philippine Paint Industry Week (PPIW).

It helps if all of the companies get the same data about cost impacts, alternatives, etc.
Ecowaste Coalition further assisted these efforts by bringing in resource speakers to talk to PAPM member companies:

- Prof. Scott Clark, University of Cincinnati in Ohio (on lead paint elimination)
- Mr. Bill Menrath, University of Cincinnati in Ohio (on lead paint abatement)
- Mr. Perry Gottesfeld, Occupational Knowledge International (on lead safe paint certification)
Lead in Paint Elimination - Industry

- **PAPM Guidelines for the Evaluation and Control of Lead-based Paint Hazards**
  
  [www.papmpaints.org/images/papmleadguidelines.ppt](http://www.papmpaints.org/images/papmleadguidelines.ppt)

**Things to Consider**

- Determine the appropriate evaluation and control response for lead hazards.
- Workers and residents' safety should be considered.
  - Workers should wear proper protection.
    - Hair has to be covered from lead dust
    - Appropriate Respirator
    - Complete coverall.
- Residents/Tenants should stay out of the work area.
- The whole process is controlled so no new lead hazards are created.

**Abatement Methods**

- **Building Component replacement.**
  - Lightly mist the component to be replaced and its surrounding area.
  - Carefully carve all affected painted seams with a utility knife to minimize paint chipping and dust creation.
  - Lead-contaminated building component should be handled carefully. Wrap it in durable puncture resistant plastic and seal with tape.
Industry started process of dialogue and cooperation with Ecowaste Coalition to design a path forward

In 2011, Ecowaste Coalition, with the support of PAPM, petitioned the Department of Environment and Natural Resources (DENR) to develop regulation on lead in paint
Lead in Paint Elimination - Industry

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Lead in Paint Elimination - Industry

- DENR, Ecowaste and PAPM had a series of consultations and technical working group meetings to work on specifics of the regulation.
- Eliminating lead in paint was now a common objective for all parties.
- Trust and cooperation during the process, not adversarial.
DENR Administrative Order
No. 2013 - 24

Subject: CHEMICAL CONTROL ORDER (CCO) FOR LEAD AND LEAD COMPOUNDS

Pursuant to Republic Act 6969 otherwise known as the Toxic Substances and Hazardous and Nuclear Wastes Act of 1990, DENR Administrative Order (DAO) No. 29, s. 1992 (Implementing Rules and Regulations of Republic Act 6969) and DAO 05, Series of 2005 (Toxic Chemical Substances for Issuance of Chemical Control Orders), the following pertinent rules and regulations with procedural requirements for the Chemical Control Order (CCO) for Lead and Lead Compounds are hereby promulgated.

Section 1. Policy and Objectives. It is the policy of the State to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment; to prohibit the entry, even in transit, of hazardous and nuclear wastes and their

2.9 Lead Paints – paints or other similar surface coating materials containing lead or lead compounds (calculated as lead metal) in excess of .009 percent (90 ppm) of the weight of the total non-volatile content of the weight of the dried paints film.
10.4 Continuing training and information, education and communication (IEC) efforts on lead paint and other uses for both regulated community and regulators.

10.5 Harmonization and facilitation in consulting and discussing the lead paint, other allowable uses and regulation of lead and lead compounds with the following government agencies and parties:

10.5.1 Food and Drug Administration (FDA) of the Department of Health (DOH)

10.5.2 Bureau of Product Standardization (BPS) and Bureau of Trade Relation and Consumer Protection (BTRCP) of the Department of Trade and Industry (DTI)

10.5.3 Bureau of Custom (BOC) of the Department of Finance (DOF)

10.5.4 Philippine Association of Paint Manufacturers (PAPM)

10.5.5 Ecological Waste Coalition and IPEN-Philippines
Lead in Paint Elimination - Regulation

- Architectural paints must meet 90 ppm limit by January 2017
- Industrial paints by January 2020
- Requires paint can labels to carry warnings that lead dust is hazardous
DENR APPLAUDS BOYSEN, DAVIES FOR LEAD-FREE PAINT PRODUCTION; URGES OTHERS TO FOLLOW SUIT

Friday, 15 July 2016 00:00

The Department of Environment and Natural Resources (DENR) is urging other paint manufacturers in the country to follow the examples of Boysen and Davies which recently obtained their Lead Safe Paint mark under a newly launched global certification program.
Getting all stakeholders to view lead paint elimination as a common goal is valuable.

How to make the paint industry view this goal is in their self interest?

Many paint companies continue to use lead in paint due to:

- Inertia
- FOLO – Fear of Losing Out
- Lack of Technical Resources
Philippine Experience

- Working with industry association for simultaneous phase out addresses these concerns:
  - Even playing field - companies that do the switch are not penalized with lower sales.

- Media reports about lead content of paints and raising awareness about child health issues with lead paint are very effective

- Low hanging fruit - conversion from Pb driers to alternatives, do this first => quick win
Philippine Experience

- A third party lead free paint certification system before lead in paint removal regulation efforts goes into effect may be beneficial:
  - Goal of achieving lead free paints may be viewed as a positive mechanism rather than merely compliance
  - Promote healthy competition among brands to be among the first to get it – reverse FOLO
- Assistance to lower cost to achieve certification will help
Philippine Experience

- It’s very helpful to have advocates in the paint industry. Larger paint companies are more likely to see this in their self interest:
  - They have more to lose in corporate reputation if their paints are perceived to be unsafe due to lead – consumers won’t know that it’s only 1-2% of their products
  - Going lead free helps strengthen consumer trust which may more than offset any possible loss in sales from higher prices
Philippine Experience

- Multinationals have internal policies not to use lead, local players may see going lead free voluntarily as a way to be elevated to world class stature.
- Many paint companies are going green, removal of lead paint is basic step.
- Larger companies would have technical and financial resources to make the transition quickly.
Philippine Experience

- Ask the paint company leader “Would you use leaded paint in your own house?”
- Then “Why would you allow your customers to use them in their house?”
- “How much do you think would your customer be willing to pay to ensure the paints in your house did not have lead?” – this will put make any cost impact insignificant
Philippine Experience

- Provide small and medium paint companies with:
  - Technical assistance on alternative raw materials
    - Many would be more than willing to sponsor seminars and workshops
  - Financial assistance for sample testing and third party certification?
Role of civil organizations such as Ecowaste Coalition / IPEN Philippines are incredibly valuable:

- Raised awareness of dangers of lead paint to consumers and paint companies
- Provided lead content data on paint samples - put pressure on paint companies
- Pushed for revival of Chemical Control Order for Lead and Lead Compounds
Philippine Experience

- Monitored breaches to the lead paint regulation and sought corrective actions from concerned entities
- Reached out to paint companies who are not members of the paint industry association to secure their compliance to the lead paint regulation
- Promoted independent, third-party Lead Safe Paint® certification in collaboration with PAPM
EcoWaste warns of lead in household paints
By Rhodina Villanueva (The Philippine Star) | Updated October 24, 2013 - 12:00am

MANILA, Philippines - The paint you use in your house may be harmful to your health.

In a new study it released the 90 parts per million of Lead (Pb) and Cadmium (Cd) and 121 parts per million of CCl₄ compounds (CCO) present in the paint samples from 2012-13.

"Takot na takot po ako. Parang ayaw ko na siya makita."

City playgrounds in Manila deemed unsafe for play
Published May 23, 2012 5:36pm

It's unusual for a child to say this about a playground, of all things. But not after suffering a broken arm from falling off a broken ride.

Wanted: Lead-safe schools
CONSUMERLINE By Ching M. Aiano (The Philippine Star) | Updated May 17, 2016 - 12:00am

While the new President is hell-bent on flushing out criminality and corruption, there's another threat he probably should tackle with his iron fist: the prevalence of lead poisoning among children.

According to World Health Organization statistics, the prevalence of lead poisoning among children living in a rural area covers about one-third of the Philippines. Investigators have found children's elevated blood lead levels to be "associated with proximity to lead acid battery recycling or repair activities, consumption of certain foods, and playground soil."

WHO stresses the fact that "young children are particularly vulnerable to the toxic effects of lead and can suffer profound and permanent adverse health effects, particularly affecting the development of the brain and nervous system."

WHO further notes, "Lead affects children's brain development, resulting in reduced intelligence quotient (IQ), behavioural changes such as shortening of attention span and increased antisocial behaviour, and reduced educational attainment."
Ang Makulay na Bahay
(The Colorful House)

Rommel P. Germania, MD
Gilbert F. Levites

Nancy Slide is always after her family’s safety. She’s never content even inside her colored house. She didn’t expect that her house her colorful things would endanger the lives of her children. How is this situation related to the unusual behavior displayed by her son?
# Lead in Paint Elimination - Progress

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<th>2015</th>
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<td><strong>Number of Paints</strong></td>
<td>104</td>
<td>141</td>
<td>122</td>
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<tr>
<td><strong>Percentage of paints with lead content above 90 ppm / number of paints</strong></td>
<td>23 % / 24</td>
<td>69 % / 97</td>
<td>61 % / 75</td>
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<td><strong>Maximum Concentration, ppm</strong></td>
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