Working with paint manufacturers to phase out lead in paint

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Paint Basics

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Paint ingredients

- Pigment and fillers
- Resin
- Solvent
- Driers
- Other additives

Paint Basics

Why is lead used in paint?

- Lead-containing paint ingredients are primarily intentionally added to solvent-based paint
- Primary sources of intentionally added lead are pigments, drying agents and anti-corrosives
- Lead can also be unintentionally added through contaminated paint raw materials
- Anti-corrosives with very high levels of lead (up to 20 %) often sold for home use
- NOTE: solvent based paint typically a fraction of overall production

SME Outreach Strategy

SME Outreach Strategy

Background and IPEN approach

- In 2012, IPEN included SME outreach into its national lead paint elimination strategy
- First step: Data on lead in paint as base of discussion with the manufacturers
- Approach: Manufacturers of all sizes, both lead paint producers and non-lead paint producers
- Open dialogue

SME Outreach Strategy

Aims

- Build awareness around the hazard of lead paint
- Understanding the process manufacturers must go through to remove lead from their paint production and any obstacles they face
- Facilitate ways to overcome any obstacles
- Building support for enactment of legally binding limits on lead content of paint

SME Outreach Strategy

Conversation topics

- Why they produce lead paint (or not)
- The hazard of lead exposure to children
- If they would consider reformulating their paints
- If they have access to lead-free raw materials and advice on how to reformulate
- Any obstacles they may face
- How to overcome these obstacles

SME Outreach Strategy

Component 1.1: SME outreach

- Technical guidelines for helping SMEs are being developed
- IPEN responsible for outreach to SME in Nigeria and Indonesia
- What are the needs in this region and how can the project help?

SME Outreach Strategy

Training SMEs

⇒ Most manufacturers look for advice tailored for their paints

- Paint Manufacturers Associations conducting trainings
- Lead-free raw material producer conducted trainings with individual manufacturers

SME Outreach Strategy

Facilitation of access to advice

- Creating venues for manufacturers and suppliers to meet
- Setting up individual meetings between suppliers of lead-free raw materials and individual manufacturers

The SME Perspective

Information Received

Lead paint production

Why?

- Lack of knowledge and understanding of the problem
- Old formulas and training not up to date
- Lack of incentive for changing

Information Received

Obstacles to removing lead

- Access to advice on reformulation
- Lab access
- Access to alternatives
- Price considerations

Information Received

Support for regulations

National paint manufacturers often support regulations:

- Want to take responsibility for national situation
- Regulations create a level playing field
- Lead paint influences the paint market reputation

Cost and retail price implications

Information Received

Cost of replacing lead in paint

Is it always more expensive to produce paint without added lead?

- No!

1. Cost of raw materials
2. Time for developing new formulation
3. Cost of new formulation vs
   - Total paint production
   - Profit margin
   - Workers protection
   - Hazardous waste handling
   - Societal costs

Information Received

Cost of raw materials

The cost of lead-free raw materials depend on

- Color
- Formula (not a 1:1 replacement)
- Supplier price

Driers, no cost (more expensive raw material but less of the alternatives are needed), no research needed

Information Received

Cost of replacing lead dryers

Driers, no cost (more expensive raw material but less of the alternatives are needed), no research needed

Information Received

Cost of pigment replacement

- In some cases, the reformulation comes with a lower production cost when significantly less pigment is needed, although organic pigments are generally more expensive
- Example: Replacement of lead pigment in RAL color 300: Flame Red

	Lead free High performance		Lead free Economic		Lead containing	
Pigment calculated on solid binder		11.50%		11.20%		23.90%
Pigment in wet paint		5.40%		5.00%		11.00%

Reference E1.

Information Received

Cost of pigment replacement

- Significant cost reductions can also be made by mixing several pigments
- Example: Replacement of lead pigment in RAL color 1012: Lemon Yellow

	Formulation 1	Formulation 2	Formulation 3	Formulation 4
Pigment 1	52%	45%	28%	29%
Pigment 2	25%	21%	16%	-
Pigment 3	-	-	-	19%
Pigment 4	23%	14%	16%	12%
Pigment 5	-	20%	-	-
Pigment 6	-	-	40%	40%
Paint Price (USD) per Kg	$20.95	$19.37	$16.1	$21.26

Reference E1.

Information Received

Cost example from one manufacturer

- Lead driers: no increased cost (raw material more expensive but less is needed)
- Red decorative paint: Decrease in cost (70%)
- Yellow decorative paint: Around 25% increase
- Orange decorative paint: Around 50% increase
- However, these types of paints typically small fraction of total paint production

Information Received

Cost of replacing lead in anti-corrosive paint

- Main cost related to test of new formulations
- Performance requirements

Information Received

Lead content and retail price

- Most manufacturers manage without increasing retail price
- In 2013, retail price and lead content of paints in six Asian countries were recorded
- Only paint cans of similar size were included
- Conclusion: lead or no lead did not define the price, brand did

- PHOTO of Asia report

Summary

- Lead is intentionally added to paint as driers, pigments and anticorrosive
- Lead contaminated raw materials can contribute to lead in paint
- Cost-effective reformulation alternatives are available for all lead-containing paint ingredients
- A high retail price is not necessarily a guarantee for low lead content of the paint
- Manufacturers typically support phasing out lead, but may need time to do so

Thank you!


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