



School of Public Health and Family Medicine
Isikolo Sempilo Yoluntu kunye Namayeza Osapho
Departement Openbare Gesondheid en Huisartskunde



WELCOME TO THE SAICM/UCT LEAD IN PAINT COMMUNITY OF PRACTICE

If you have not signed up to be a part of the UCT SAICM LiP CoP, **please sign up** at the following link:

<https://saicmknowledge.org/community>

Introduce yourself (name, job title, organization and country) in the **chat section**.

Only the presenter and facilitator will speak. Any comments or questions from attendees should be typed in the **chat section**.

Please kindly keep you microphone muted and cameras off during the discussion

NOTE:

If you are having **technical issues**, please join the Lead in Paint WhatsApp group, using this link, and we will assist you: <https://chat.whatsapp.com/HOMtpqf5YG6EX53gJ6jsTR>

Discussion 2:

- Topic: **“Reformulation is entirely possible.”**
- Date: 9th June 2021
- Time: 16h00 – 17h30 (GMT+2)
- Presenters: Branko Dunjic, NCPC
Vojislavka Satric, NCPC
Jeiel Guarino, IPEN
Monica Alcalá Saavedra, PPG-Comex
- Facilitator: Andrea Rother, University of Cape Town

Lead in Paint Community of Practice

Discussion 2:

Reformulation is entirely possible

Global Alliance to
Eliminate Lead Paint

PRESENTERS



Dr Branko Dunjic has managed the Cleaner Production Centre in Serbia, established in the frame of a UNIDO-sponsored project, since 2007. He has published over 40 scientific papers and he is the co-author of 4 patents.



Jeiel Guarino works as a global campaigner of IPEN's Global Lead Paint Elimination Campaign, which aims to end the manufacture, import, export, sale, and use of lead-containing paints and similar surface coatings worldwide.



Vojislavka Satric has worked in the paint industry as Technical Manager, Executive Manager, Research and Development Manager. She has worked in the Cleaner Production Centre of Serbia as Chemical Leasing and Cleaner Production expert.



Monica Alcala Saavedra has a Ph.D. in Chemistry from The University of Texas at Austin and a 20-year career in the paint and coatings industry including her present position as Director of Quality and Technical Services for PPG-Comex, a paint industry in Mexico.

Introduction

Presented by: Dr Branko Dunjic

OUTPUT 1.1

- DEMONSTRATION PILOTS WITH PAINT MANUFACTURERS IN SMALL AND MEDIUM ENTERPRISES EXECUTED IN SEVEN COUNTRIES



GEF PROJECT ID: 9771

GLOBAL BEST PRACTICES ON EMERGING CHEMICAL POLICY ISSUES OF CONCERN UNDER SAICM

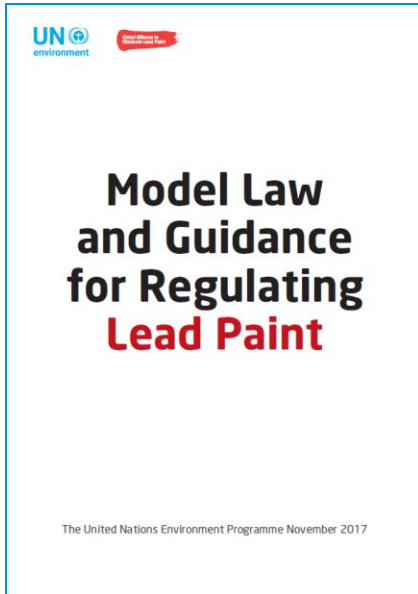


Start of Activities Implementation:
Jan 2019

End of Activities Implementation:
May 2022

Introduction (cont.)

Presented by: Dr Branko Dunjic



- Seven paint producers (in China, Jordan, Ecuador) have finished the reformulation process and are able to produce paint without added lead. Project partners are working with a total of 35 SMEs in seven countries (China, Jordan, Ecuador, Peru, Colombia, Indonesia and Nigeria). Draft technical guidelines available.
- Non-lead-based pigments, dryers and anti-corrosives are widely available for paints and are used by many manufacturers to produce high quality paints.
- Paint made with compounds that are not lead-based will have a lead content <90 ppm.
- If care is taken to source uncontaminated raw materials ingredients the lead content can be much lower than 90 ppm.

Background for Question 1 (cont.)

Presented by: Vojislavka Satric

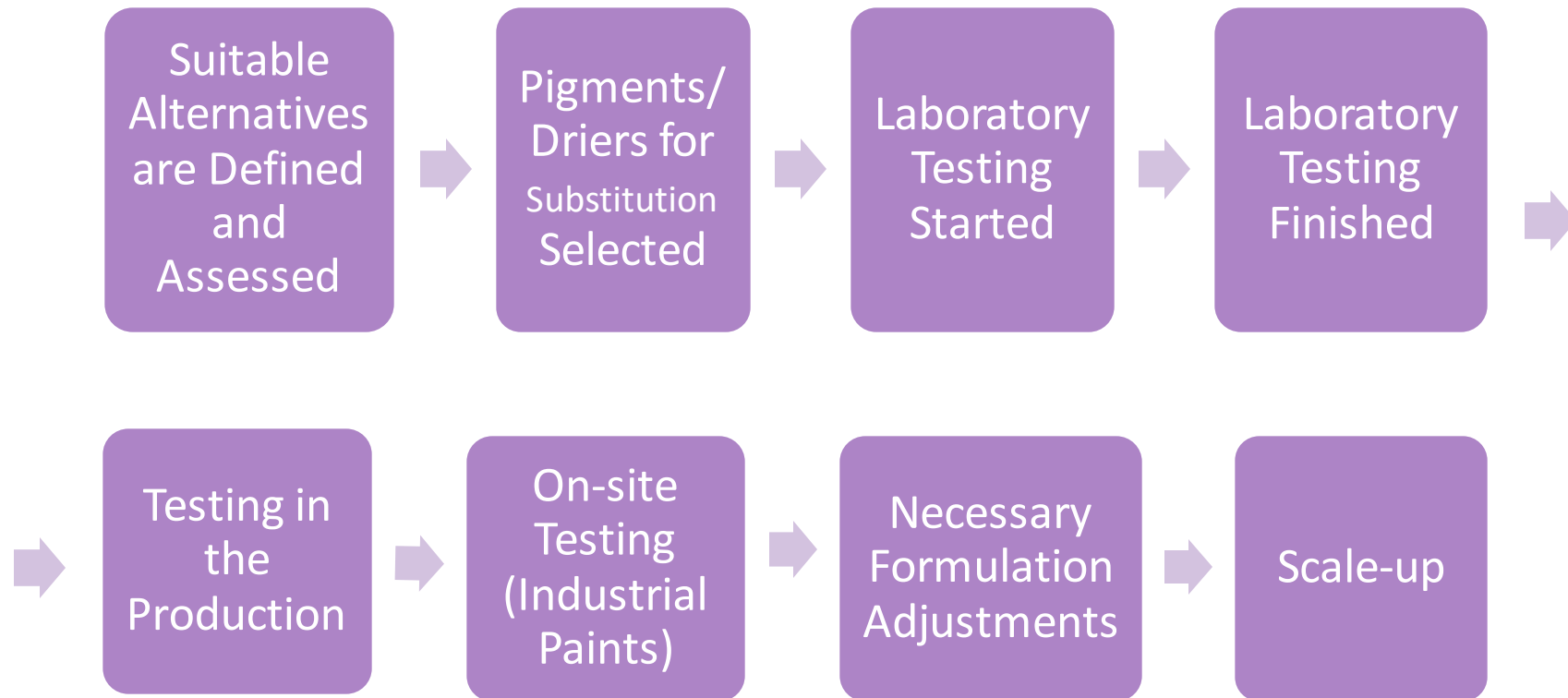
What is substitution?

- The principle of chemical substitution states that hazardous chemicals should be systematically substituted by less hazardous alternatives or, preferably, alternatives for which no hazards have been identified.
- Substitution usually leads to more than just the replacement of one chemical for another.
- The difference in the properties of the two chemicals may create a need for other changes (technical, but possibly also organizational) as well.

Background for Question 1 (cont.)

Presented by: Vojislavka Satric

Stages of reformulation



Background for Question 1 (cont.)

Presented by: Vojislavka Satric

Lessons learned

- In most of the SMEs working in the project, lead driers are not in use.
- Lead pigments are used in solvent-based and water-borne paints.
- Some small enterprises do not have all the necessary equipment to carry out testing and scale up.
- There is no commercial interest of suppliers for small markets (users) and the availability of lead-free pigments is limited.
- Supplier's technical support is important.
- Communication with international resource person/experts (email, zoom meetings) is very helpful.

Background for Question 1 (cont.)

Presented by: Vojislavka Satric

Case Study – Reformulation of Alkyd Anticorrosion Paint (China)

- The product contained Red lead – Lead tetra oxide
- Two alternatives were selected and tested
- Both alternatives have good anticorrosive and other technical properties and are not classified as hazardous to human health and to the environment
- Both are cost-effective alternatives – reformulated paints are about 10% less expensive than starting formulation

NOTE: This is the result of the GEF project “Global best practices on emerging chemicals policy issues of concern under the Strategic Approach to International Chemicals Management (SAICM)”



Question 1

Based on your knowledge, what is the **status of paint reformulation** in your company, community or country?
What reformulation **successes** are you aware of?

This question will be discussed for 20 minutes.

Please use chat only, mute your microphone, and turn your video off.

Thank you!

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Background for Question 2

Presented by: Jeiel Guarino

Lead Paint Production: Why?

- Lack of knowledge and understanding of the problem
- Old formulas not up to date
- Lack of lab capacity to test paint performance properties and personnel training/knowledge
- Lack of incentive for changing formulation

Background for Question 2 – (cont.)

Presented by: Jeiel Guarino

Incentives to Substitute Lead in Paint

- Doing the right thing for worker or consumer health
- Corporate social responsibility
- Market pressure/competition
- Regulatory reasons

Question 2

In your experience, **what motivates companies to reformulate** their paint to remove added lead?

This question will be discussed for 25 minutes.

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Background for Question 3

Presented by: Monica Alcala Saavedra

Potential Barriers

1. Supply Chain Issues: Availability of lead-free raw materials
2. Technical shift
 - a. Formulation support
 - b. Skills training
 - c. Appropriate equipment
3. Increased costs due to reformulation
 - a. One-time costs
 - b. Increased fixed costs

Background for Question 3 (cont'd)

Presented by: Monica Alcala Saavedra

Strategies to Overcome Barriers

1. Supply Chain Issues: availability of lead-free raw materials
 - Supply chains are always vulnerable to disruption
 - Identify alternate suppliers for RM – partnering with suppliers is KEY!!
 - Lead-free pigments are now commodities – many suppliers
 - If forced to allocate, consumer product formulations should be the priority
2. Technical shift
 - a. Formulation support
 - Vendors generally offer technical guidance - partnering with suppliers is KEY!!
 - Expertise from technical professional groups and associations can be leveraged
 - UN formulation Guidelines good complementary resource
 - b. Skills training
 - Look to vendors (partnering with suppliers is KEY!!) and international technical association network (WCC and regional trade associations can help: APIC <http://www.apic-paint.asia/members.html> , LATINPIN <http://www.latinpin.com/inicio/?se=1>)

Background for Question 3 (cont'd)

Presented by: Monica Alcala Saavedra

Strategies to Overcome Barriers

c. Appropriate equipment.

- Organic, lead-free pigments have a smaller particle size and are harder than equivalent inorganic pigments. Agglomerates are also bigger and harder.
- Achieving desired fineness of grind (>6 Hegman) can be a problem, especially for high-gloss finishes (i.e. automotive and similar applications).
- When the specification for fineness of grind is 6 Hegman and below, the desired gloss can generally be achieved using ordinary dispersion equipment.
- If milling is still necessary, the most common alternative to sand mills are what is known as generic Hock Meyer-type immersion or basket mills. This mills cost 40-60% less than sand mills, for example.
- If buying new equipment is not an option, pigments are also available as pre-dispersed fluids, they are a bit more expensive, but they do not require milling. Pigment dispersions are also commodities and are generally available.

Background for Question 3 (cont'd)

Presented by: Monica Alcala Saavedra

Strategies to Overcome Barriers (cont'd)

3. Increased raw material (RM) costs

- This is an ongoing challenge for any business
- Standard business strategies apply
 - Prorated price adjustments
 - Savings and efficiencies to offset increased fixed costs
 - Reduce working capital through inventory efficiencies
 - RM price is only one aspect of cost
- If ever forced to allocate resources, consumer product formulations should be the priority
- As far as partnership with suppliers, best to take advantage of competition whenever possible

Background for Question 3 (cont'd)

Presented by: Monica Alcala Saavedra

UNEP Technical Guidelines on Paint Reformulation

- Useful complement to assistance provided by raw materials supplier
- Includes notes on the following helpful topics:
 - alternatives to pigments and additives
 - cost/performance
 - impact on safety and production processes

Question 3

What ways do you see to **overcome potential barriers** to paint reformulation in your company, community or country?

This question will be discussed for 25 minutes.

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THANK YOU
for attending the
Lead in Paint
CoP
Discussion

SAVE THE DATE:

LiP CoP
Discussion 3

Date: 8th September 2021

Time: 14h00 – 15h30 (GMT+2)

**Topic: Making the case: Raising awareness about
importance of lead paint laws**



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This activity is supported by the Global Environment Facility (GEF) project ID: 9771 on *Global Best Practices on Emerging Chemical Policy Issues of Concern under the Strategic Approach to International Chemicals Management (SAICM)*.