Testing of Paint Reformulation Guidelines and the Reformulation Results

Grupo GEA – NCPC Peru
The Feedback on the Guidelines

According to the Ministry of Environment:
• Complete accordance with the Guidelines.

According to the SMEs:
• The regulation must be specific and clear. Traffic, industrial and other kind of paints must be included, many of which are not in direct contact but where people are involved throughout the process.
• The guidelines should include success stories, and the data of cost per m² or gallon is important.
• There should be incentives (financial and no financial) for the manufacturers of paints with a maximum lead content of 90 ppm.
• The certificate that verifies the low lead content in paints should be submitted by a regulated independent laboratory, considering a certification per specific product.
Reformulation overview in Peru

SMEs involved in the reformulation process:

**Soprin (S7)**
https://soprin.com.pe/

- Type of paint: Water-based
- Use of paint: Architectural
- Products chosen: Ligh blue ecolatex
- Lead-containing raw material: pigments

**Envasadora San Gabriel (S6)**
http://esg.com.pe/

- Type of paint: Traffic and primer
- Use of paint: Industrial
- Products chosen: Yellow road marking paint and Primer clark zinc chromate automotive
- Lead-containing raw material: pigments and fillers
Reformulation overview in Peru

SMEs involved in the reformulation process:

Universal Colors (SS)
https://universalcolors.com.pe/

- Type of paint: Epoxy
- Use of paint: Industrial
- Products chosen: Yellow and orange epoxy paint
- Lead-containing raw material: pigments

Larpaint (SS)
https://larpaint.com/

- Type of paint: Epoxy
- Use of paint: Industrial
- Products chosen: Epoxy enamel yellow
- Lead-containing raw material: pigments
Reformulation Results of Selected Products

Soprin: Light Blue Ecolatex

Production in 2020: 21,063 L

→ Greater demand in national market.

- Pigment:
  - Before: Azul celeste Ac 109 SDM C 25
  - After: Pasta supra azul PAFT-1021

- Viscosity:
  - Before: 109 KU
  - After: 110 KU

- Other properties:
  • Stable in all of its physical properties, stable color.

- Shade comparison:
  - Before
  - After

Actual lead content: 0.3799 ppm
Drivers and barriers to SMEs reformulation

Drivers:
• The Technical Support Committee (CAT) with 14 institutions (private, public and civil society), lead by Environment Ministry and Health Ministry.
• Formulation of the lead paint Law project and its approval per consensus in the Congress.
• Cooperation of the international big companies such as QROMA (Peru headquarters), CAPECO, Comité de Químicos.
• Baseline (study market) of the paint industries and the potential substitution of lead content in the paints.
• Suppliers of lead-free pigments willingly open to collaborate with the reformulation project (Regional support).

Barriers:
• Identification of providers of organic/alternative pigment to lead and, finding a local partner.
• The opportunity cost of the reformulation process. E.g. Adapt some process such as milling due to the use of pastes or pigment preparation.
• Covid-19 restriction: delay of information flow to NCPC, pigments shipment and paint samples to the providers’ laboratories.
• Maybe to consider the mother language.
Economic evaluation not available yet.

✓ Envasadora San Gabriel is developing the economic evaluation at the same time as the reformulation process is taking place.

✓ Soprin did not present the economic evaluation, but NCPC Peru suggested to take it into consideration.
Lessons learned and best practices

• Soprin reported that they achieved a better matching of the paint tone by substituting the original pigment for an organic one.

• SMEs reported a daunting experience when working with organic pigments, encountering disadvantages like long times during the milling stage and concerns about properties like viscosity when trying pigments.

• As a result of this, one company worked with prepared pigments paste, and 2 are also waiting for the samples to test the paste performance with the paint.

• As stated on the reformulation guidelines, active communication in the supply chain was the key to keep the project going (especially between the providers and the company).
Campaign on the free lead in paint Law

**Formulation of lead paint Law Project 5180:**
Formation of the Technical Support Committee (CAT) to assist the law formulation.

**March 18th, 2021:**
Discussion in Congress Plenary of the Law Project 5180, lead by Congressman Omar Merino.

SMEs more eager to keep working on the reformulations
Perú usa pinturas con plomo, metal pesado que afecta la salud

La fabricación de las pinturas domésticas en el Perú ha despertado las dudas en diversas instituciones internacionales referentes a su impacto en la salud, debido a que para esta elaboración se viene utilizando el plomo conocido como uno de los metales que puede perjudicar la salud de sus usuarios.

En ese sentido, según la Dirección General de Salud Ambiental (DGSEA), estas pinturas a base de plomo presentan un peligro especialmente en niños en fase de desarrollo y mujeres gestantes, debido a los daños orgánicos que pueden causar en su salud, al estar concéntrados en las paredes de los hogares y locales públicos.
The reformulation of paint that contains lead can be done by selecting the rights pigments to meet the desired characteristics.

The SMEs that haven’t finished with the reformulations yet will continue with the work until the objective is accomplished.

Considering the recent approval of the Law there will be more interest coming from manufacturers in reformulating paints to meet the new regulations.

During the development of the project, the technical guidelines were shared with the SMEs and national entities such as the Ministry of Health, Ministry of Environment and the Industrial National Society.

The updated technical guidelines will also be shared with key stakeholders to be considered in future works.

Conclusions and the way forward: views on the future of reformulation in Peru
Thank you

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