

# Testing of Paint Reformulation Guidelines and the Reformulation Results

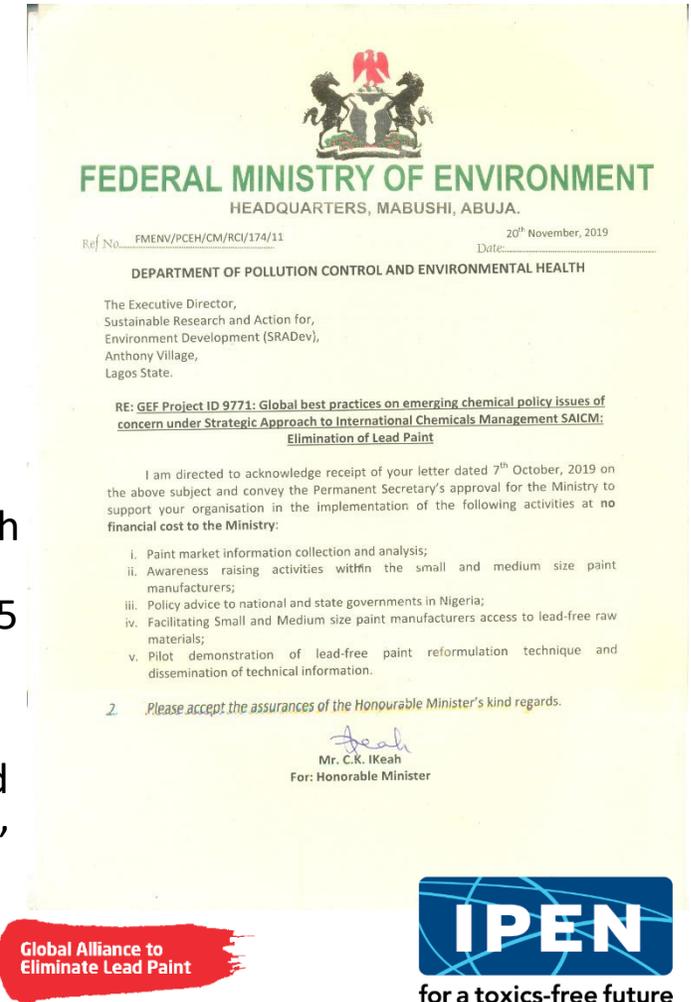
**Sustainable Research and Action for Environmental Development (SRADev Nigeria)**

**Validation workshop (21 April, 2021)**



# The Feedback on the Guidelines

- The Technical Guidelines was shared with all stakeholders – FMITI, FMENV, PMA, SON, etc.
- For the partners that reviewed the Guidelines.
- **Paint Manufacturers Association (PMA)**
  - Paint Reformulation using new /lead free raw materials is now more than necessary.
  - The Technical Guidelines document from UNEP is detailed, suitable and adaptable for the Nigerian Reformulation process
- **Federal Ministry of Industry, Trades and Investment (FMITI)** made input into the document:
  - The Global Alliance's aim is for all countries to have in place legislation that will serve to ban lead paint by 2020: Due to Pandemic, there is need to push the date forward (page 3, Paragraph 2)
  - In Table 29, accepting the lead range of 0.5 – 0.80 for long oil alkyd and 0.35 – 0.07 for short oil alkyd, the concern should be to know the minimum quantity for/to adjust driers quantities to avoid negative effects
  - On page 64 of the Lead Paint Reformulation Technical Guidelines under the sub-heading, **Properties of Selected Driers**: Manufacturers may be tempted to still use lead in the absence of alternatives, combination of 0.05% cobalt, 0.5% lead and 0.1% calcium. Availability of the alternatives is key.



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# Reformulation overview in Nigeria

Participating SMEs	Type of products	Use	Quantity of production of Lead paints(annual)	Type and the quantity of lead-containing raw materials (annual production)
<b>BLENDTECH LTD (S6)</b>	Industrial coating	Industrial	80 tonnes	Pigments- Lemon and scarlet chrome 10,000kg
<b>PRECIOUS PAINTS NIG. LTD (S6)</b>	Solvent-based	Alkyd enamel	1.1m gallons	Pigments: Red oxide, yellow oxide, Rubine Red, Scarlet, middle chrome. 0.16% per gallon. 176,000gallons
<b>PRESTIGE PAINTS COMPANY LTD (S6)</b>	Solvent-based	Alkyd enamel	4,200 litres	Middle Chrome yellow- 4,000kg Rubine Red- 2,200kg Scarlet Chrome – 275kg Total- 6,475kg
<b>INTEGRATED PAINTS AND ALLIED PRODCUTS LTD (S6)</b>	Water-based and solvent based	Building paints and alkyd enamel	120 tonnes	Middle, Lemon, Scarlet (chrome), Yellow and Red (oxides)
<b>LEAN-ON LTD (S6)</b>	Solvent based	Alkyd enamel	10 tonnes	Middle chrome-150kg Lemon chrome-150kg Mix drier- 600kg Scarlet chrome- 50kg

# Paint Brands to be reformulated



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# Reformulation Results of Selected Products

- We established partnership with Clariant SA/Parco Nigeria to provide the technical support/assistance on lead paint reformulation on **10 December 2020**.
- Clariant provided an assessment tool to get the information from the SMEs including ***drawdowns for the products to be reformulated, base or white pigmented forms of the paint*** and ***questionnaire on reformulation***. All these items were completed and sent to Clariant South Africa.
- As of **March 25, 2021**, Clariant provided a pre-reformulation technical training workshop for 25 SMEs on reformulation including the 5 SMEs.
- We await the result of the reformulation after testing by Clariant.

## Stages of lead reformulation in Nigeria

Stage 1: 6 partner SMEs were selected

“ 2: 5 signed the agreement

“ 3: The 5 SMEs selected 7 products altogether to be reformulated

“ 4: The 5 SMEs identified suppliers of suitable alternatives

“ 5: Each of the SMEs identified the pigment to be substituted

“ 6: Laboratory test of the paint still undergoing lab test by Clariant however, the SMEs carried out their in-house lab testing.

“ **7: Reformulation process in the laboratory ongoing.**

“ **8: Testing in the production**



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## CLARIANT

### Request for Technical Assistance

Business Line	Printing <input type="checkbox"/> Coating <input checked="" type="checkbox"/> Plastics <input type="checkbox"/> Special Apps <input type="checkbox"/>
Request Date	Date request is submitted: 20th January, 2021
Requestor	Name of person submitting the request: Mr. BOJE NDIRIHI
Customer	Name of customer / company: INTEGRATED PAINTS/ALLIANCE GROUP LIMITED
Customer Location	City, Country: OJOBA, LAGOS STATE, NIGERIA
Customer Contact	Name of customer contact: Mr. BOJE NDIRIHI
Contact Information	Phone number and/or email for customer contact: 080326711795
Who will approve results?	From customer's side: Mr. JAMES OJOKUNJI
Requested Completion Date	Date requested for work to be completed: 10th February, 2021

*Please provide as much details as possible:*

Project Definition	Please describe the work that is to be completed. DE-LEADING OF BULK PAINTS/FUNCTIONALIC VERNICURE OF LEAD COMPONENTS.
Samples Submitted	Please indicate full list of the samples to be submitted related to this work request: in this case, we will need a 2" sample of each uncoloured base - either transparent or white bases, as well as reference standard of all lead-chromate shades (drawings of requested shades on black and white cards with specified film thickness): 1. EMISSION PAINTS 2. LEAD FORMER PAINTS
Current system and application	Please describe the product scope - how many products / bases required for lead replacement. For example, products: Long Oil Alkyd Enamel, Short Oil Alkyd Enamel, Nitro Cellulose, PU... Bases: lead-chromate powder pigments are milled in transparent base or in white base (together with TiO2) ... Please describe the application, e.g. solvent based decorative enamels, solvent based industrial, automotive refinish: EMISSION - ACRYLIC COPOLYMER GLOSS ENAMEL - LONG OIL ALKYD REDDISH PIGMENTS ARE MILLED ALONGSIDE NITROCELLULOSE TO MAKE STAINABLES Page 1 of 3



# Drivers and barriers to SMEs reformulation

## Drivers:

- Global Alliance/SAICM phase out campaign by 2020
- Ongoing lead paint law process in Nigeria
- Cooperation of PMA, FMITI, FMENV, NESREA, SON towards lead paint substitution
- Opportunity for scale-up of reformulation to national level
- Increase awareness on concerns about the associated health problem related to the use of lead in paint (lead poisoning cases).
- Access to paint property testing equipment
- Availability of a technical assistance and provision of free alternatives by Clariant
- Price consideration in the transition for lead free.

## Barriers:

Some barriers faced by the SMEs when undertaking the reformulation process.

- High cost of port tariffs and taxes.
- Economic downturn on SMEs in Covid 19 lockdown
- Economics: Increased cost of importing raw materials, higher cost of the alternatives.
- Lack of local technical capacity on production of paint raw materials - dependency on importation.
- Paint Laws are yet to be in place to ban lead paint although the process is ongoing.
- Lack of financial motivation for the SMEs.



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# The Economic Evaluation of Reformulated Paints in Nigeria

Information yet to be available, since reformulation is ongoing.



# Lessons learned and best practices

- Relationship established with the industry has helped with driving the process.
- Funding is very important to build initial work relationship
- Earlier paint studies conducted, and sustained ILPPWA awareness events, fostered more acceptability by the Paint manufacturers and stakeholders led to the SON setting a standard of 90ppm in 2017
- **Stakeholder's identification and consultation:** Identification of the main key stakeholders and effective consultation with government agencies and industry.
- Country-specific ownership of the process by the ministries, departments and agencies (MDAs) gave it more credibility and buy-in by the paint manufacturers.
- Technical support by Clariant gave more acceptability to the process - a competent and experienced expertise engaged
- **Communication with international resource person/experts:** Regular communication with international experts/resource person either through email, zoom meetings and monthly reports has been very helpful.

## Lessons along the Stages

**Stage 1:** making the PMA drive the selection process gave better access to the SMEs

**Stage 2:** With extensive consultation, signing the agreement was easy

**Stage 3:** With previous studies identified the paint types with high lead content. Hence, many of them agreed to reformulation.

**Stage 4:** Heightened level of awareness already made 5 SMEs move towards alternative and identify suppliers.

**Stage 6:** Getting the paint samples to Clariant was very challenging but, we pushed through.



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# Influence of lead paint laws on reformulation

- SRADeV Nigeria/IPEN in 2019 assisted the government regulatory agency (NESREA) to draft lead paint law. SRADeV also tasked to work with governments to develop lead paint law section of the “National environmental (hazardous chemicals and pesticides) regulations, 2020 as amended”.
- Participated and facilitated the expert review process
- NESREA officials presented the draft regulations and different workshops organised for SMEs reformulation.
- FMENV and FMITI policy for the paint sector plans to upscale the reformulation work to cover the six geopolitical zones in Nigeria.
- SRADeV Nigeria will continue to engage with government and key stakeholders in future reformulation.



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# Conclusions and the way forward: views on the future of reformulation in NIGERIA

- ❑ Beyond the SAICM GEF project, the PMA as well as the FMITI intends to continue the reformulation campaign to the other states of the federation.
- ❑ PMA technical team domesticate Technical Guidelines and adapt it for SMEs use in Nigeria.
- ❑ The pilot paint reformulation process is ongoing and strong, hope that the project will be concluded successfully and timely.
- ❑ Continuous funding will help to scale-up the reformulation process in Nigeria.



# Thank you



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