

Lead in Paints in Developing Countries ***An Unfinished Agenda***

Global Study to Determine Lead in Paints in 10 Developing Countries and Associated Campaign for its removal

NIGERIA SITUATION REPORT/ANALYSIS

TO

Abhay Kumar
Toxics Link
H2 (Ground Floor)
Jangpura Extension
New Delhi-10014
INDIA

By

Ane Leslie Adogame
***Sustainable Research and Action for
Environmental Development (SRADev)***
Suite 1, 18 Olorunlogbon Street,
Anthony Village, Lagos, Nigeria.
ane_adogame@hotmail.com
sradevnigeria@yahoo.co.uk

In collaboration with Friends of the Environment (FOTE), Lagos, Nigeria

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1.0 BACKGROUND INFORMATION

The Dakar Resolution for Eliminating Lead in Paints recognizes that the Johannesburg Plan of Implementation of the World Summit on Sustainable Development in *paragraph 57* calls for the phasing out of lead in paints and in other sources of human exposure, and calls for work to prevent, in particular, children's exposure to lead and to strengthen monitoring and surveillance efforts and the treatment of lead poisoning.

The sixth session of the Intergovernmental Forum on Chemical Safety (Forum VI), decided that a global partnership to promote the implementation of the measures contained in *paragraph 57* of the Johannesburg Plan of Implementation of the World Summit on Sustainable Development is essential, especially for developing countries and countries with economies in transition.

To this end, **Toxic Link, India** (*a lead sponsor of this Global partnership*) conducted a **global study to determine Lead in Paints in 10 developing countries and associated campaign for its removal**. In achieving this, there is need to gather some information peculiar to each chosen country. The Nigeria situation is as captured in this report.

This project was funded by SSNC and IPEN.

The objective of study is as follows:

- i) To determine lead concentration in household paints in 10 developing countries in Asia, Africa, Latin America & EECCA;*
- ii) Promote national advocacy campaigns aimed at phasing out lead from paints in those participating countries where lead-containing paint is found; and*
- iii) Promote global efforts to phase-out lead-containing interior household paints in all countries.*

2.0 INTRODUCTION

Nigeria with an estimated area of 924, 000 square kilometers and a population of over 140 million has a great need for housing. Indeed Nigeria is the most urbanized nation in Africa with over 30 cities and other rural communities. This indicates a massive need for housing and other social infrastructure like schools, hospitals, worship places, hotels, offices etc.

Potentially, therefore, demand for housing and the derived demand for paints is expected to keep increasing for times to come. Currently, figures

available shows that about 40 million litres of decorative paints is being produced and utilized annually in Nigeria despite the huge population and high numbers of cities in the country. This is because great portions of house owner in Nigeria perceive paint to be a luxury without which they could still inhabit their houses, as against the practice in country like South Africa where shanties are being painted on a regular basis. Another reason for low utilization of paint in Nigeria is lack of maintenance culture among the populace.

All other things remaining equal, it is expected that the present administration in the country will get its priorities right and quickly revive the nation's economy. When this happens the disposable income of the consuming populace will improve for the better and more people will not only appreciate the importance of a decent paint finish to any shelter, but also be in a position to afford it.

2.1 What is Paint?

Paint may be described as a liquid composition capable of being applied over a surface. The viscosity of this liquid composition is adjusted to ease application by airless spray, brush, roller, etc. During the curing or drying process, this film becomes an impermeable, strongly protective, decorative coating. Modern paints have evolved due to an increasing demand for higher performance coatings. These paints have highly complicated compositions including four main components: *the binder, the pigment, the extender, and the solvent.*

Binders are the film-forming components of the paint in which the pigment and extenders are distributed. In most cases, binders produce the greatest volume of paint film and have the greatest influence on the paint characteristics (drying/curing, adhesion, hardness, strength, resistance to chemicals, etc.). Therefore, the type of binder is generally used to describe the generic type of paint.

Pigments are the small particles of solid material distributed in the paint. Pigments can be divided into two groups: anticorrosive pigments, which prevent corrosion of metals by chemical and electro-chemical means, and coloring pigments, which give permanent color and hiding capacity.

Extenders are natural or synthetic materials finely distributed in the paint. They can also be considered inert pigments. The particles have different sizes and shapes: nodular, lamellar, acicular, etc. Extenders have significant influence on the physical properties of the paint. These include the gloss, water &

chemical resistance, mechanical strength and hardness, and film build of the paint.

Solvents are used principally to facilitate application. Active solvents dissolve the binder to make a solution suitable for various methods of application. Latent solvents make the coating easier to apply, control the evaporation rate, and improve the quality of the final film. Diluents solvents are used in limited quantities in conjunction with active solvents to reduce costs. Diluents solvents do not dissolve the binder.

2.2 Types of Paints

Decorative: Various types of water based ranging from – white wash, cement paints, distempers, cheap emulsion, matt emulsion, trade emulsion – are branded and sold in the market.

Industrial: Examples of this include: Fire resistance paints, Marine anti fouling paints, Marine anti corrosive paints, Chlorinated Rubber Primers, Wood lacquer, Stoving Metal Finishes among others. Other types are Automotive, Refinishing, Wood finishing.

In Nigeria, decorative paints have **60%** of the market share, Industrial has **20%**, Refinishing **10%**, Wood finishing and Automotive have **5%** each of the market share.

3.0 PROFILE OF PAINTS MANUFACTURERS ASSOCIATION OF NIGERIA (PMA)

The **Paints Manufacturers Association of Nigeria (PMA)**, a sub-sector of the Chemical and Pharmaceuticals sectorial group of the Manufacturers Association of Nigeria (MAN) is an association of companies engaged in the manufacturing of Paints and Allied products throughout the Federal Republic of Nigeria.

The Paint Manufacturers Association (PMA) was established in 1982 with membership strength of **eighteen**, the Association now has more than **two hundred** registered members in its fold with estimated **five hundred** unregistered members.

The Paint Manufacturers Association (PMA) must also act as a vanguard for good and qualitative built environment; they must be environmentally conscious and friendly.

Its objectives are as follows:

- To promote mutual co-operation between member companies

- To promote further development of paint technology in the country.
- To actively liaise with Government bodies or other interest group e.g. The Raw Material Research and Development Council (RMRDC) in the area of local sourcing of raw materials.
- To represent the interest of members to government and appropriate authorities and other relevant associations.
- To advise Government on budgetary matters relating to paints and paints raw materials. To actively liaise with the Standard Organisation of Nigeria (SON) to establish Paints standards and review such standard from time to time.
- To do all such other things as may be considered to be incidental or conducive to the above objective or any of them.

4.0 LEAD IN PAINTS

Lead is a soft gray metal that improves the protective power of paint. Throughout the 19th century and up until about 1950, Lead was added to most paint to improve its covering power and durability. Unfortunately, lead is a powerful poison. At low levels, it reduces a person's intelligence, makes it difficult to concentrate or pay attention, and harms hearing. These effects are permanent. Naturally, in children, these effects reduce performance in school. At higher levels, lead has many additional severe effects including kidney disease, blindness, seizures, and death.

Kids eat peeling paint; it tastes like lemon drops. Starting in the 1930s, public health authorities began to realize that lead in paint was poisoning children, particularly children in dilapidated housing in inner cities. Developed nations like USA and Europe began a lead screening program as far back as 1930's. But in Nigeria inadequate attention is given to issues of lead in paints.

Nigeria has no standard or limit for lead in paints, this leaves the general public at the mercy of paints manufacturers. Lead is used during the production stage as drying agent for preservation of paints. Those that are aware of the danger of lead in paint in Nigeria are handicapped in ensuring that manufacturers stop its use in paints production. Another major challenge is the adulteration of paints, where those behind faking paint could add any poisonous chemical in the production with no regard for human health. *Often time it is difficulty to obtain quantity of lead used in paint production.*

However, there are alternatives to lead as drying agent in paint production, and this is recognized even by the Paint Manufacturers Association of Nigeria (PMA). These include *zirconium, metallic zinc, cobalt, metallic calcium* among others. An interesting fact is that, it would not require change in technology to substitute any of these for paint in paint production. But an important consideration is how safe are these alternative chemicals to human health?

5.0 HISTORY OF PAINT MANUFACTURING

Paints manufacturing commenced with the establishment of four Paints companies in 1962:

- Askar Nig. Ltd at Ibadan (an outpost of Hafia Paints Israel).
- British Paint (Berger Paints).
- International Paints (IPWA)

Before 1962 however, the bulk of paints consumed in Nigeria were imported mainly from UK and France. The 1980's however witnessed an increased plethora of indigenous paint manufacturing outfits both registered and unregistered especially in the household arena, about 200 companies while the big multinational are still the major players in the marine and auto sections of the industry.

6.0 OVERVIEW OF THE NIGERIAN PAINTS INDUSTRY

The Nigerian paint industry is not highly regulated. There are over **1000** companies producing paint in the country. The bigger ones which are less than 10% of the total numbers of companies producing paint controls about 50% of the market while the remaining market share are divided among the rest. About 40 million litres of paints are produced and used in the country annually (PMA).

There is hardly exportation of paints in the country officially, but there are reported cases of smuggling to neighbouring West African countries. The Nigerian paint industry is unsaturated because most people do not see the need to paint their houses unlike country like South African where shanties in ghettos are painted (CAPDAN, 2008).

It was found out during this investigation that there is no legislation for lead regulation in paint in Nigeria. The manufacturers claimed not to be using lead as a drying agent in the paint production. Since there is no legislature on lead in paint in the country, the issue of enforcement is not relevant. Nevertheless, it is believed that many of the smaller manufacturers still use lead in the production system. The bigger players like; **Berger, DN-Meyer, CAPL** etc have in-house laboratories for Research and Development while the smaller players cannot afford such necessity.

Paint manufacturers have blamed the rising cost of production in the industry partly on high prices of imported raw materials which they say constitute 70 percent of their production inputs. Importantly also, the uncontrolled level of

product adulteration, faking, and merchandising of paints with high nuisance value has eroded the market share and business turnover.

Total investment in the industry is about **N15 billion** with an installed capacity in excess of 150 million liters of assorted paints per annum with about 10,000 people presently employed in the industry. In 1998 the estimated production and consumption of paints was 38 million litres or 25.33% capacity utilization. In 2003, the average production level was about 30 million liters or 20% capacity utilization. In 2008, 40 million litres was estimated to have been produced and utilized in the country.

7.0 THE NIGERIAN PAINT MARKET ECONOMY

It is the general state of the economy that dictates the demand for any product. With the total extinction of the middle class by the forces of economic depression in the country, only the very rich in the upper class engage in meaningful housing construction. The few at the other end of the pole who manage to engage in building construction regard painting as a luxury without which they could still inhabit their houses.

Government as consumer has been relatively inactive compared to when it used to be the major consumer of paints on account of its various housing projects in the Federal Capital Territory, Abuja and virtually in all the various states capitals as well as the provision of social infrastructures like hospitals, schools and community centres which used to gulp some considerable gallons of paints.

But all the problems of the paints industry have not been entirely all exogenous to the paint making sector, some of its problems have also been created by the daily entry of quack producers and fake colour matchers in the name of paint manufactures who use drum and stick paddles as their mixers in the backyard with absolute disregard to anything called standard. They cash in on the prevalent abject poverty and ignorance of the consumer to market their products in the name of decorative paints.

The entrants of many low quality paint manufacturers may not entirely be a disadvantage as it has helped in the growth of cottage industries. Unfortunately it has also succeeded in sacrificing quality at the altar of encouraging self-employment.

Talking about imported paints, it is interesting to know how government measures have helped in further crippling of paint manufacturing sector in the recent past. For instance, the import duty on finished paints was 10% while the duty on raw material input was about 35%. Under this unfavourable

import tariff regime, it is impossible for locally manufactured paints to effectively compete against the imported brands.

8.0 CURRENT REGULATORY STATUS

The paint industry standards are presently regulated by the Standards Organisation of Nigeria (SON) which has only been able to set standards for household products, leaving paints manufacturers in the auto and marine sectors tied to foreign standards. SON conducts inspection of local paints factories just twice a year with little or no consideration for lead content in paint while the status of input on imported brands is not known. **Only about 15 paint companies in Nigeria have met SON NIS products standard, four have been ISO 9000 certified, while others are in the process of certification.**

Only the big time multinational and some indigenous players have shown any serious commitment to quality control by establishing their own laboratory with full time quality control staff. It is just lately that National Agency for Food and Drug Administration Control (NAFDAC) got involved in regulating the importation of some raw materials used in the paint industries.

The manufacturers see the introduction of the Mandatory Conformity Assessment Programme (MANCAP) by Manufacturer Association of Nigeria (MAN) as a welcome development. In their reckoning, the programme, going by their experience so far, has the potentials to tackle to a large extent the problem of adulteration and faking of paint products.

9.0 CHALLENGES OF THE INDUSTRY

The major challenges facing paint manufacturing industry in the country are as follows:

- Non-availability of raw materials locally.
- Very low capacity utilization.
- Competition with imported brands.
- Lack of fund for Research and Development.
- Low patronage by Government which control over 80% expenditure in the country annually.
- High rate of faking and adulteration.

10.0 SAMPLING OF PAINTS

A total number **30 decorative paint samples** meant for household use sold in the open market were purchased at *AMU Market* (one of the largest paint market in Nigeria), Mushin in Lagos in November 2008. About 100ml of each sample was collected into a sampling plastic bottle as shown in *figures 1&2*. After purchasing, samples were given a unique number by a permanent marker and an adhesive tape was stuck on the side of marking so that markings do not fade during its transportation and shipment to India for lead analysis.



Figures 1 & 2: Showing samples of paint ready for shipment

Of the 30 samples collected **7 were water-based** (plastic) paints while the remaining **23 were oil-based** (enamel) paints. The samples were of diverse colours ranging from *yellow, orange, blue, green, red, black and white* to mention a few. The brand collected were; CHEMSTAR, PRESIDENT, CAPL, PORTLAND, BERGER and MEYER.

Before shipment, all relevant information about the 30 samples was noted down as indicated in sample catalogue form shown in *table 1*.

TABLE 1: Sample catalogues forms for Global Paint Study to determine the lead Concentration in paints

S/N	Sample No	Paint brand	Date of Purchase	Location of purchase	Date of manufacturing	Price of the can	Type of paint- Plastic/enamel	Colours of the paints	Volume of paint samples
1	3044	Chemstar	22 Nov. 2008	Amu Market, Mushin, Lagos	6/11/2008	N1650 (\$14)	Enamel	Rich brown	100ml
2	9097	Chemstar	22 Nov. 2008	"	8/10/2008	N1650 (\$14)	Enamel	Dark Grey	100ml
3	4055	Chemstar	22 Nov. 2008	"	1/9/2008	N1650 (\$14)	Enamel	Jasmine Yellow	100ml
4	10	Chemstar	22 Nov. 2008	"	29/9/08	N1650 (\$14)	Enamel	National Green	100ml
5	3044	Chemstar	24 Nov. 2008	"	2/10/2008	N500 (\$4)	Plastic	Rich Brown	100ml
6	9102	Portland	22 Nov. 2008	"	Nil	N2,700 (\$23)	Enamel	White	100ml
7	9103	Portland	22 Nov. 2008	"	Nil	N2,700 (\$23)	Enamel	Black	100ml
8	3045	Portland	22 Nov. 2008	"	Nil	N2,700 (\$23)	Enamel	Bitter Chocolate	100ml
9		Portland	22 Nov. 2008	"	Nil	N2,700 (\$23)	Enamel	Dark Grey	100ml
10		Portland	24 Nov. 2008	"	Nil	N1,200 (\$10)	Plastic	Barley Cream	100ml
11	3040	President	22 Nov. 2008	"	Nil	N2,500 (\$22)	Enamel	Cream	100ml
12	3044	President	22 Nov. 2008	"	Nil	N2,500 (\$22)	Enamel	Rich brown	100ml
13	6071	President	22 Nov. 2008	"	Nil	N2,500 (\$22)	Enamel	Leaf Green	100ml
14	0-003	President	22 Nov. 2008	"	Nil	N2,500 (\$22)	Enamel	Golden Yellow	100ml

15	3040	President	24 Nov. 2008	"	Nil	N900 (\$ 8)	Plastic	Cream	100ml
16	A365-684	CAPL	22 Nov. 2008	"	Nil	N3,200 (\$28)	Enamel	Fiesta Blue	100ml
17	A365-438	CAPL	22 Nov. 2008	"	Nil	N3,200 (\$ 28)	Enamel	Post Office RED	100ml
18	A365-122	CAPL	22 Nov. 2008	"	Nil	N3,200 (\$28)	Enamel	Black	100ml
19	921-10040	CAPL	24 Nov. 2008	"	Nil	N2,500 (\$22)	Plastic	Mobil Clove Grey	100ml
20	A913-2017	CAPL	24 Nov. 2008	"	Nil	N3,200 (\$28)	Plastic	Celtel Red	100ml
21	1853	BERGER	22 Nov. 2008	"	Nil	N3,200 (\$28)	Enamel	Emrade Green	100ml
22	3	BERGER	22 Nov. 2008	"	Nil	N3,200 (\$28)	Enamel	Golden Yellow	100ml
23	G1/006	BERGER	22 Nov. 2008	"	Nil	N3,200 (\$28)	Enamel	Post Office RED	100ml
24	0012N	BERGER	22 Nov. 2008	"	Nil	N3,200 (\$28)	Enamel	Brilliant Blue	100ml
25	9999	BERGER	24 Nov. 2008	"	Nil	N2,500 (\$22)	Plastic	Brilliant White	100ml
26	0-004	MEYER	22 Nov. 2008	"	Nil	N2,600 (\$ 23)	Enamel	Orange	100ml
27	0-006	MEYER	22 Nov. 2008	"	Nil	N2,600 (\$23)	Enamel	Red	100ml
28	9103	MEYER	22 Nov. 2008	"	Nil	N2,600 (\$23)	Enamel	Black	100ml
29	0-012	MEYER	22 Nov. 2008	"	Nil	N2,600 (\$23)	Enamel	Pilot Blue	100ml
30	7-084	MEYER	24 Nov. 2008	"	Nil	N3,200 (\$28)	Plastic	Lagoon Blue	100ml

