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STUDY REPORT ON THE TRADE AND USE OF LEAD CHROMATES IN PAINT IN KENYA



September 2026

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Executive summary

Lead is a highly toxic substance associated with serious and often irreversible health effects. Despite Kenya's adoption of a 90 parts per million (ppm) maximum lead limit for paints in 2018, important gaps remain in the regulation and monitoring of lead chromate pigments, which are used to produce bright yellow, orange, and red colors in paints and other products. Existing standards primarily regulate finished paint products and do not specifically control the importation and use of raw lead chromate pigments. Recent evidence has also continued to identify lead chromates in paints available in Kenya, including yellow road-marking and residential paints.

This study assessed the trade and use of lead chromates in Kenya to generate evidence to support regulatory action, strengthen engagement with policymakers and enforcers, increase awareness of the health risks and availability of lead-free alternatives, and support efforts to list lead chromates under the Rotterdam Convention. The study adopted a mixed-methods approach, combining analysis of Kenya Revenue Authority (KRA) customs data and United Nations Commodity Trade Statistics Database (UN Comtrade) data with Key Informant Interviews (KIIs) involving paint manufacturers. The KRA dataset covered 2021–2025 and comprised 321 records, while two paint manufacturing companies participated in the KIIs.

The KRA customs data demonstrate continued importation of lead chromate pigments into Kenya. A total of 983.62 tons of chromium based pigments were documented as imported between 2021 and 2025 under HS Code 3206.20. Imports occurred continuously throughout the five years, with annual volumes exceeding 200 tons in 2021 and 2022, declining to 164.18 tons in 2024, and increasing again to 181.81 tons in 2025. The data therefore do not show a sustained decline or phase-out of lead chromate imports.

The import market is highly concentrated, Eighteen companies were identified in the KRA records, with four accounting for 66.7% of documented imports and the top six accounting for more than 80%. Five paint manufacturers imported lead chromates directly and together accounted for 27.3% of the documented volume.This concentration presents an opportunity for targeted regulatory engagement, while the involvement of chemical distributors, suppliers, and other industrial users indicates that controls would need to extend beyond paint manufacturers.

India was the principal source of chromium based pigments in the KRA data, accounting for 98.6% of recorded imports between 2021 and 2025. UN Comtrade data similarly identify India as the dominant supplier, although there were also reported imports from Viet Nam, Italy, and South Africa that are not reflected in the corresponding KRA records. The differences between the two datasets indicate the need for further investigation of trade classifications, reporting, indirect supply routes, and the traceability of lead chromate supply chains.

The study also identified a diverse range of lead chromate grades and formulations entering Kenya, including Lemon Chrome, Middle Chrome, and Scarlet Chrome products. Lead-free alternatives were also identified in the customs records, demonstrating the availability of substitutes for similar applications. No published evidence reviewed in the study indicated domestic production of lead chromate pigments. The KRA data did not indicate exports during the period under review, although UN Comtrade reported 96.6 tons of exports from Kenya to other East African Community countries between 2021 and 2024. This discrepancy also requires further verification.

The regulatory assessment found that Kenya has no operative instrument specifically restricting the import, sale, or use of lead chromates. The existing 90 ppm standards apply primarily to finished paints and do not regulate raw lead chromate pigments entering the supply chain. While the Environmental Management and Coordination (Amendment) Act, 2015 (EMCA), the Standards Act, and other existing frameworks provide a basis for regulatory action, specific subsidiary measures addressing lead chromates have not been operationalized.

The study found a clear discrepancy between manufacturer interviews and KRA customs records. While interviewed manufacturers reported that they no longer use or procure lead chromate pigments and are adopting or considering lead-free alternatives, customs records indicate that significant quantities of lead chromate-related materials continued to enter Kenya during 2021-2025, including imports associated with some of the interviewed companies. This discrepancy highlights the limitations of voluntary self-reporting in verifying compliance. It also reinforces the need for mandatory import registration and end-use declarations, supported by strengthened regulatory oversight and enforcement.

Although lead-free alternatives are available, their uptake is influenced by the cost of alternatives, customer acceptance, awareness, and performance requirements. Manufacturers identified tax incentives, reduced import duties on alternatives, and public awareness as measures that could facilitate substitution.

An immediate ban on lead chromate imports would have minimal impact on the manufacturers' operations as reported during interviews; however, this finding cannot be generalized to the wider sector because the interviews covered only a few manufacturers and did not include all importers, distributors, downstream users, or manufacturers.

Overall, the study confirms that lead chromates continue to enter Kenya despite the 90ppm lead limit, highlighting the need to trace their destination and use across the wider supply chain, while addressing the regulatory, economic, and market barriers to substitution. The study recommends stronger import controls and traceability, lead chromate-specific regulations, improved enforcement, support for alternatives, harmonized EAC measures, and continued efforts to secure PIC listing under the Rotterdam Convention.

Contents

Executive summary iii

1 Introduction 8

1.1 Background 9

1.2 Objectives of the Study 10

1.3 Approach and Methodology 10

1.3.1 Approach 10

1.3.2 Methodology 11

1.3.3 Ethical Considerations 12

2 The status of lead paint elimination in Kenya 14

2.1 History of Lead Paint Elimination Activities in Kenya 15

2.2 The legal status of lead paint in Kenya 15

2.2.1 Regulatory Controls 15

2.2.2 Legal Framework 16

2.2.3 Compliance of Lead Paint in Kenya 18

2.3 Lead Paint Studies in Kenya 18

3 The Impacts of lead exposure in Kenya 20

4 Key findings of the country's use of lead pigments 23

4.1 Overview of KRA Dataset 23

4.1.1 HS Code and Application Pathway 23

4.1.2 Import Volumes 24

4.1.3 Importer Profile 24

4.1.4 Annual Import Distribution by Importer Category 26

4.1.5 Country of Origin 27

4.1.6 Product Diversity and Grades 28

4.1.7 Lead Chromate Pigments Production in Kenya 29

4.1.8 Lead Chromate Exports from Kenya 29

4.2 Findings from Key Informant Interviews 31

4.2.1 Manufacturers Profile 31

4.2.2 Current Use and Procurement of Lead Chromates 31

4.2.3 Availability of Alternatives 31

4.2.4 Product Lines in Which Alternatives Are Available 31

4.2.5 Comparative Performance of Lead-Free Alternatives 32

4.2.6 Regulatory Awareness and Compliance 32

4.2.7 Product Labelling 32

4.2.8 Transition Challenges to Lead-Free Production 32

4.2.9 Support Required for Full Transition 33

4.2.10 Potential Impact of an Immediate Import Ban 34

4.3 Synthesis of the findings 34
5 Conclusions and next steps 36
5.1 Conclusion 37
5.2 Recommendations 38
6 References 39

List of Acronyms and Abbreviations

ARSO	African Organization for Standardization
CEJAD	Centre for Environment Justice and Development
EAC	East African Community
EMCA	Environmental Management and Coordination Act
GAELP	Global Alliance to Eliminate Lead Paint
GFC	Global Framework on Chemicals
HS CODE	Harmonized System Code
KEBS	Kenya Bureau of Standards
KIIs	Key Informant Interviews
KRA	Kenya Revenue Authority
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organization
Pb Cr	Lead Chromate
PIC	Prior Informed Consent
UN COMTRADE	United Nations Commodity Trade Statistics Database
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organization



1 Introduction

1.1 Background

Lead is a highly toxic, naturally occurring metal found in the Earth's crust and is recognized by the World Health Organization (WHO) as one of the top ten chemicals of major public health concern. It has been widely used across industries, particularly in pigments and paints, for its durability, opacity, and stabilizing properties. As a result, lead-based paint remains one of the most significant global sources of lead exposure. The United Nations Environment Programme (UNEP) broadly defines lead paint as any paint or coating material intentionally containing lead compounds, including varnishes, lacquers, enamels, and primers (UNEP, 2023).

Lead exposure occurs throughout the lifecycle of lead-containing products, from production and application to deterioration and disposal, leading to environmental contamination and human health risks. As paint ages, it releases dust and flakes that can be inhaled or ingested, posing serious long-term risks, especially in households and communities. According to the WHO, there is no safe level of lead exposure, and children are particularly vulnerable due to their developing nervous systems (WHO, 2023).

The health effects of lead exposure are severe and often irreversible. Acute exposure can damage the central nervous system, leading to coma, convulsions, or death. Children who survive may develop permanent intellectual disabilities and behavioral disorders. Globally, lead exposure contributes to about 143,000 deaths annually and accounts for about 600,000 new cases of intellectual disability in children each year, with 99% of affected children living in low- and middle-income countries. Even at lower exposure levels, lead can cause reduced cognitive performance, attention disorders, hypertension, kidney damage, and reproductive toxicity (WHO, 2023).

In response, the international community has undertaken concerted efforts to eliminate lead from paints through initiatives such as the Global Alliance to Eliminate Lead Paint (GAELP). Many countries have introduced legally binding limits on lead content in paints to reduce human exposure. Kenya has aligned with international best practice by adopting a national standard in 2018 that limits lead content in paints to a maximum of 90 parts per million (ppm) (KEBS, 2018).

Despite this regulatory progress, important enforcement gaps remain. Existing regulations primarily target finished paint products, while the importation and use of lead chromates, the principal lead-based pigments used to produce bright yellow, orange, and red paints, remain inadequately monitored and controlled. This regulatory gap creates opportunities for the continued use of lead chromates in paint manufacturing and raises concerns about possible illicit trade.

Emerging evidence suggests that lead chromates continue to be used in Kenya despite the regulatory limit on lead in finished paints. A recent study by the University of Nairobi detected high concentrations of lead chromates in 80% of yellow road-marking paints and 25% of residential paints sampled across the country (Were, 2025). These findings point to persistent non-compliance and weaknesses in the monitoring of lead-containing raw materials entering the paint supply chain.

Despite these findings, significant information gaps remain regarding the importation, trade volumes, distribution, and end uses of lead chromates in Kenya. Addressing these gaps is critical to strengthen regulatory enforcement, protect public health and the environment, and generate the evidence needed to support ongoing international efforts to subject lead chromates to the Prior Informed Consent (PIC) procedure under the Rotterdam Convention.

1.2. Objectives of the study

1. To monitor the use and trade of Lead Chromate in Kenya to support regulatory action on its use in products.
2. To engage policymakers and enforcers in strengthening and enforcing regulations on the importation and use of lead chromates in Kenya.
3. To create public awareness regarding the health risks of lead chromate and the availability of lead-free alternatives.
4. To generate support for the listing of lead chromate in the Rotterdam Convention among key stakeholders, i.e., government and industry players.

1.3. Approach and methodology

1.3.1. Approach

The study adopted a mixed-methods approach, integrating quantitative analysis of national and international trade data with qualitative engagement with industry stakeholders to assess the importation, use, and regulation of lead chromates in paints in Kenya.

The quantitative component involved analysis of customs and international trade data to examine import and export volumes, trade trends, source countries, key importers, and trade flows over time. CEJAD obtained national customs data from the Kenya Revenue Authority (KRA) through collaboration with the Ministry of Environment, Climate Change and Forestry and complemented these data with international trade statistics from the United Nations Commodity Trade Statistics Database (UN Comtrade). Relevant Harmonized System (HS) codes were identified and used to examine trade patterns and market dynamics and to identify potential regulatory gaps.

The qualitative component involved engagement with industry stakeholders, particularly paint manufacturers, through Key Informant Interviews (KIIs). The consultations explored the current use and procurement of lead chromates, the availability and uptake of safer alternatives, and the economic, technical, and regulatory factors influencing their use or substitution.

Findings from the quantitative trade analysis and qualitative stakeholder consultations were synthesized to provide a comprehensive understanding of the trade and use of lead chromates in Kenya. The findings were subsequently shared with relevant stakeholders through a multi-stakeholder workshop to validate the findings, facilitate dialogue, and support informed decision-making on the regulation and phase-out of lead chromates in paints in Kenya.

1.3.2. Methodology

1.3.2.1. Data collection

Both secondary and primary data were collected to assess the trade and use of lead chromates in paints in Kenya.

Secondary data comprised customs and international trade data on lead chromates, including import and export records. Customs data were obtained from the Kenya Revenue Authority (KRA) following a formal request made in collaboration with the Ministry of Environment, Climate Change and Forestry. The request, submitted through CEJAD letter Ref. MEF/EMC/55 dated 16 April 2026, covered two Harmonized System (HS) codes: HS 3206.20, covering pigments and preparations based on lead chromates, and HS 2841.50, covering other chromates and dichromates. The KRA dataset provided covered the five years (2021–2025) and comprised 321 individual line records. The records provided for analysis were under HS 3206.20, while no records under HS 284150 were included in the dataset provided by KRA. The KRA data were complemented by data from the United Nations Commodity Trade Statistics Database (UN Comtrade), an international database providing statistics on the import and export of goods reported by countries.

For primary data collection, appointment letters from CEJAD seeking participation in the study were sent to five selected paint manufacturing companies. The letters were accompanied by an introductory letter from the Ministry of Environment, Climate Change and Forestry, introducing the study and highlighting the Ministry's collaboration with CEJAD. The semi-structured KII questionnaire was also shared alongside the letters to provide the companies with an overview of the information sought and enable the industry representatives to understand the scope and areas of inquiry before confirming their participation. Following this engagement, two companies agreed to participate, and appointments were scheduled with their representatives.

The two KIIs were subsequently conducted by the CEJAD research team with industry representatives involved in the production and formulation of decorative and industrial paints, particularly those with knowledge of raw material procurement, pigment selection, and paint formulation. The questionnaire-guided interviews collected information on the use and procurement of lead chromates, their applications in paint production, the availability of alternative pigments, and factors influencing the selection of lead chromates or alternatives. The completed questionnaires provided the primary data for the study.

1.3.2.2. Sampling and sample size

The study employed purposive sampling to identify industry stakeholders for primary data collection. The sampling frame was developed from an analysis of Kenya Revenue Authority (KRA) customs import records for the period 2021–2025, which identified 18 companies associated with imports of lead chromate pigments during the study period. From these, eight companies were purposively identified and targeted for primary data collection, with the selection focusing primarily on paint manufacturers because of their direct involvement in paint formulation, raw material procurement, pigment selection and use, and compliance with applicable lead paint requirements.

Appointment letters introducing the study were sent to the eight selected companies, accompanied by an introductory letter from the Ministry of Environment, Climate Change and Forestry. Of the eight companies approached, five accepted the appointment letters while only two ultimately granted interviews and provided primary data. The final sample therefore comprised two paint manufacturing companies that participated in the Key Informant Interviews (KIIs).

Other companies identified in the KRA import records, including suppliers and distributors, were not prioritized for the KIIs because their primary role is the supply and distribution of pigments rather than the formulation and manufacture of paints. The purposive sampling approach therefore sought to engage stakeholders with the most direct knowledge of the use and procurement of lead chromates in paint production and the feasibility of transitioning to safer alternatives.

1.3.2.3. Data analysis and presentation

The secondary and primary data were analyzed according to the nature of the data and the objectives of the study. The KRA customs and UN Comtrade data were reviewed, cleaned, organized, and analyzed using descriptive statistics to identify patterns and trends in the importation and international trade of lead chromate pigments. The analysis considered variables such as import and export volumes, trade trends, source countries, key importers, and trade flows over time. The findings from the two trade data sources were also examined comparatively to identify similarities and differences in the reported trade patterns.

The findings from the KRA customs and UN Comtrade data were presented primarily through tables to highlight key trends and observations. The KII data were analyzed thematically based on the key areas covered by the semi-structured questionnaire and presented primarily through narrative descriptions, drawing on the perspectives and information provided by the industry respondents. To protect the confidentiality and identity of the participating companies, findings from the KIIs were presented anonymously, without attributing specific responses or findings to individual companies or respondents.

1.3.3. Ethical considerations

Prior to data collection, ethical considerations were observed throughout the study to ensure appropriate institutional permissions, voluntary participation, informed consent, and confidentiality.

Before data collection, an official request was submitted to the Kenya Revenue Authority (KRA) for customs and trade data, accompanied by an introductory and endorsement letter from the Ministry of Environment, Climate Change and Forestry outlining the purpose of the study and supporting the request. For the primary data collection, CEJAD sent official appointment letters to selected paint manufacturing companies introducing the study and seeking their participation. The letters were accompanied by the Ministry's endorsement letter. Only companies that agreed to participate and granted appointments were included in the interview process.

During data collection, consent was confirmed through the semi-structured KII questionnaire, which provided respondents with an option to indicate their willingness to participate, and was further confirmed verbally at the beginning of each interview. Respondents were informed of the purpose of the study and that participation was voluntary. They were also informed that they could decline to answer any question or discontinue the interview at any point without being penalized or adversely affected.

Confidentiality was maintained throughout the data collection and reporting processes. Information provided by participants was treated confidentially, and findings from the customs data and KIIs were presented anonymously without attributing specific responses to individual respondents or companies. This approach protected the identity of participating institutions and respondents while supporting open and accurate participation in the study.



2 The status of lead paint elimination in Kenya

2.1. History of lead paint elimination activities in Kenya

Kenya's efforts to eliminate lead in paint mark a progressive shift from largely unregulated market practices to the establishment of one of Africa's most stringent regulatory frameworks. This transformation has been driven by coordinated, multi-stakeholder collaboration among government agencies, non-governmental organizations, researchers, industry players, and academia. Table 2.1-1 below summarizes the history of lead-paint elimination activities in Kenya.

Table 2.1-1 History of lead paint elimination activities in Kenya

Year	Key Activities
2013	High levels of lead in Kenyan paint were identified, raising health concerns.
2014	WHO and UNEP organized and supported the 3rd Global Alliance to Eliminate Lead Paint (GAELP) meeting to set legal limits on lead paint.
2015	15 African countries, including East African Community (EAC) members, agreed on a 90-ppm lead limit.
2016	Review of Kenya's national paint standards, lowering lead limits from 100 ppm to 90 ppm.
2017	Harmonization of the East African Paints and Allied Products Standard (90 ppm) with respect to total lead.
2018	Gazette notice issued for the new 90 ppm lead paint standard. The Kenya Bureau of Standards developed and gazetted standards KS 2661-1:2017 and KS 2661-2:2017, establishing a maximum lead limit of 90-ppm in all Paints, varnishes, coatings and related products in Kenya.
2019-2020	Implementation of the East African Standard (90-ppm) lead limit.
2021	A draft sound chemical management regulation proposed to ban lead paints in Kenya.
2024-Present	Kenya is in the early stages of harmonizing lead paint standards across Africa through the African Organization for Standardization (ARSO). While significant progress has been made in developing common standards and fostering regional cooperation, full implementation and enforcement remain uneven, and the harmonization process is still ongoing.

Source: KEBS, 2025

2.2. The legal status of lead paint in Kenya

2.2.1. Regulatory controls

Lead chromate pigments appear to enter Kenya through standard commercial procedures for industrial chemicals, with no evidence from customs records of import permits, special authorizations, or other lead chromate-specific controls. However, customs data alone cannot confirm the complete absence of regulatory requirements, and further review of relevant legislation on hazardous chemicals, industrial chemicals, and paints is warranted. The analysis suggests potential regulatory gaps, including the absence of import licensing, volume limits, pre-shipment inspection requirements, end-use declarations, and importer registration mechanisms for lead chromate products.

2.2.2. Legal framework

Kenya has no operative instrument restricting the import, sale, or use of lead chromates in paint or other products. Five years of KRA data confirm uninterrupted commercial importation through standard customs channels. The legal architecture to address this gap exists; what is absent is a specific subsidiary regulation or mandatory standard anchored to it. The existing environmental and chemicals management framework provides the broad legislative basis for action on lead chromates, but has not been operationalized specifically for this substance class:

Table 2.2-1 Assessment of Key Regulatory Instruments Relevant to Lead Chromate Control in Kenya

Instrument	Scope/Purpose	Current Provisions	Key Gaps	Recommended Action
KS 2661-1:2017(Determination of Total Lead in Paints – Chemical Digestion Method)	Laboratory determination of total lead in paints, varnishes and related products	Maximum allowable lead concentration: 90 ppm. Analysis by wet acid digestion followed by ICP-OES or Atomic Absorption Spectrometry (AAS).	Applies only to finished paint products; does not regulate raw lead chromate pigments entering the supply chain.	Expand regulatory coverage to include raw lead-containing pigments and imported pigment formulations.
KS 2661-2:2017(Determination of Total Lead in Paints – XRF Spectrometry Method)	Rapid screening of lead content in paints	Maximum allowable lead concentration: 90 ppm. Uses X-ray Fluorescence (XRF) spectrometry for field and laboratory screening.	Studies comparing portable XRF to confirmatory laboratory methods have shown that pXRF instruments may underestimate lead concentrations by approximately 27% in paint matrices containing chromate pigments (WHO, 2023; Gottesfeld et al., 2018), requiring confirmatory analysis under KS 2661-1 for regulatory purposes.	Use as a screening tool, with KS 2661-1 serving as the confirmatory analytical method.
Environmental Management and Coordination Act (EMCA), Cap. 387	National framework for environmental protection and hazardous substance management	'EMCA (Management of Toxic and Hazardous Chemicals and Materials) Regulations, 2024 - Legal Notice 182/2024'. Include: scope (lifecycle management of toxic and hazardous industrial chemicals); provisions (import/export/manufacture permits, registration, labelling, penalties).	No subsidiary regulations specifically govern the manufacture, import, or use of lead chromate.	Develop lead chromate-specific regulations under EMCA to restrict importation and use.

Instrument	Scope/Purpose	Current Provisions	Key Gaps	Recommended Action
Standards Act, Cap. 496	Establishes KEBS standards and market surveillance powers	Sections 9, 10 and 12 provide for compulsory standards; Sections 13–14 establish inspection and enforcement powers. Gazette Notice No. 675 (2018) makes KS 2661 compulsory.	Enforcement applies primarily to finished paint products rather than imported pigments.	Extend compliance monitoring to imported pigments and industrial raw materials.
Import Controls (HS Codes 320620 & 284150)	Regulation of lead chromate imports	No import permits, quotas, or prohibitions currently apply specifically to lead chromate pigments or raw lead chromate compounds.	Imports continue without substance-specific customs controls despite estimated annual imports of approximately 175–230 metric tons (Author's analysis, 2025).	Engage the EAC Council to apply the authority available under the EAC Customs Management Act, 2004, to introduce harmonised import controls on HS 3206.20 and HS 2841.50, preventing regulatory arbitrage among Partner States. The EAC has authority to act; what is currently absent is a Council decision applying that authority to lead chromate pigments
Global Framework on Chemicals (GFC, Bonn 2023)	International framework for sound chemicals management	Identifies lead in paint as a global priority issue. Kenya serves as a National Focal Point.	No domestic legal instrument currently implements GFC commitments relating to lead paint.	Develop and implement a national lead paint elimination strategy consistent with GFC priorities.
Rotterdam Convention (Prior Informed Consent Procedure)	International control of trade in hazardous chemicals	Kenya is a Party to the Convention. Lead chromates are not currently listed under Annex III and therefore are not subject to Prior Informed Consent (PIC).	Listing of lead chromates requires recommendation by the Chemical Review Committee and adoption by the Conference of the Parties, a process that can be lengthy.	Continue supporting international efforts to list lead chromates under Annex III while pursuing domestic regulatory measures.
East African Community Standardization, Quality Assurance, Metrology and Testing Act, 2006 (EAC SQMT Act, 2006).	Harmonization of standards within the East African Community	Harmonized East African Standard adopts the 90-ppm lead limit for paints. Enforcement remains the responsibility of national standards agencies.	No harmonized regional restriction on the import or trade of lead chromate pigments.	Develop an EAC-wide approach to regulating lead chromate imports to prevent regulatory arbitrage among Partner States.

KS 2661-1:2017 [LO2.1]and KS 2661-2:2017 are standards that apply specifically to all finished paints, varnishes, and related products placed on the market. As such, their scope is limited and does not extend to several categories of materials and applications. The standards do not regulate the importation of raw pigments, including those classified under HS codes 320620 and 284150. In addition, the standards are restricted to paint and coating products and therefore do not address the use of lead chromate in other applications such as plastics, rubber, ceramics, or printing inks.

2.2.3 Compliance of Lead Paint in Kenya

Compliance with lead paint standards in Kenya has improved significantly over time, driven by strengthened regulatory oversight and expanded market surveillance. Before regulation, lead levels in paints were extremely high, averaging over 10,000 ppm and far exceeding safe limits. A 2016 market survey by the International Pollutants Elimination Network (IPEN) and Centre for Environment Justice and Development found lead concentrations of up to 180,000 ppm in decorative paints. At that time, only 12% of manufacturers voluntarily complied with global safety standards (UNICEF, 2025).

The introduction of a legal limit of 90 ppm in 2018 marked a major policy milestone and catalyzed notable improvements across the sector. According to the Kenya Bureau of Standards, independent testing shows a substantial decline in lead content in paints manufactured after 2020, with more than 80% of decorative paint manufacturers now complying with the national standard. This progress has also been accompanied by increased availability of lead-free alternatives, reflecting a gradual shift toward safer production practices (ibid).

However, instances of non-compliance in terms of compliance monitoring, enforcement gaps, and awareness among informal sector manufacturers are still a challenge, indicating the need for continued monitoring and enforcement to ensure that all paints on the market meet the 90ppm lead limit and that remaining lead-containing products, particularly in imported or informal markets, are fully eliminated.

2.3 Lead Paint Studies in Kenya

Several studies conducted in Kenya have documented the presence of lead in paints on the market, particularly in decorative solvent-based and household paints, with some products containing lead levels that far exceed the 90-ppm limit set by national regulations. While compliance has improved over time, certain paints, especially those sold in informal markets and in specialized sectors such as automotive coatings, continue to contain high levels of lead. The table below summarizes key studies highlighting the extent of lead paint contamination in Kenya.

Table 2.3-1 Lead Paint Contamination in Kenya

Study / Year	Conducting Organization(s)	Sample	Key Findings
Lead in Kenyan Household Paint (2012)	IPEN/iLima	31 oil-based (enamel) household paint samples from 11 paint brands purchased in Nairobi.	27 of the 31 paint samples (87%) contained lead above the 90-ppm limit. Of these, 25 samples contained more than 600 ppm, while 9 samples contained more than 10,000 ppm. The average lead concentration was approximately 14,900 ppm. Notably, all 11 paint brands tested had at least one sample exceeding the 90-ppm lead limit, demonstrating that lead contamination was widespread across the brands tested.

Study / Year	Conducting Organization(s)	Sample	Key Findings
Lead in Solvent-Based Paints for Home Use in Kenya (2017)	IPEN/CEJAD	51 solvent-based decorative paints from 21 brands purchased in Nairobi.	69% of paints contained lead above the 90-ppm limit; 33% exceeded 10,000 ppm. Some paints contained extremely high lead levels (up to 160,000 ppm). 19 out of 21 brands had at least one paint above the limit.
Lead in Solvent-Based Paints for Home Use in Kenya (2017)	IPEN/CEJAD	51 solvent-based decorative paints from 21 brands purchased in Nairobi.	69% of paints contained lead above the 90-ppm limit; 33% exceeded 10,000 ppm. Some paints contained extremely high lead levels (up to 160,000 ppm). 19 out of 21 brands had at least one paint above the limit.
Market Surveillance of Paint Products (2021)	Kenya Bureau of Standards (KEBS)	50 paint samples from several counties in Kenya.	Only 3 samples were non-compliant with the 90-ppm limit, indicating improved compliance following the adoption of standards.
Automotive Paint Study in Nairobi (2023)	University of Nairobi (UoN)	32 automotive paint samples (red, blue, green, and white) collected from 8 formal and informal retail shops supplying spray painters in Nairobi	Most samples exceeded the 90-ppm lead limit, particularly those from informal retailers, with concentrations ranging from approximately 220 ppm to over 2,700 ppm. Only one sample from formal retail outlets met the recommended limit.
Lead in Road Marking and Residential Paints (2025)	University of Nairobi (UoN)	Yellow road marking paints and oil-based residential paints (green, red, yellow)	80% of yellow road-marking paints exceeded the 90-ppm lead limit, with concentrations up to 18,509 ppm. Among residential paints, 25% of green, 30% of red, and 35% of yellow samples exceeded the limit. Chromium levels reached 4,509 ppm, indicating the use of lead chromate pigments. Chromium levels reached 4,509 ppm, indicating the use of lead chromate pigments .' The co-occurrence of high lead and chromium concentrations in the same samples is consistent with the use of lead chromate pigments, in which both elements are present in a fixed stoichiometric ratio. However, the study does not report chromium speciation data. Future studies should include Cr(VI)/Cr(III) speciation, given that hexavalent chromium is classified as a Group 1 human carcinogen (IARC, 2012) , while trivalent chromium is relatively non-toxic.



3 The impacts of lead exposure in Kenya

Published research from Kenya indicates that lead exposure remains a significant public health concern, affecting both occupational groups and the general population through environmental contamination. Studies have documented elevated airborne lead concentrations and increased blood lead levels among workers in industries such as battery manufacturing and recycling, welding, and automotive repair, where lead-containing materials are commonly handled. Environmental studies have also detected lead contamination in crops, fish, soil, and water, highlighting dietary and environmental exposure pathways.

Table 3.1-1 summarizes published evidence on lead exposure and associated impacts in Kenya, providing detailed information on study populations, sample types, exposure sources, and key findings.

Table 3.1-1 Impacts of Lead Exposure in Kenya

Study/Year	Sample	Exposure Source	Key Findings
Environmental Lead Pollution and Contamination in Food around Lake Victoria (2008)	Food samples from the Lake Victoria region (Kisumu)	Environmental contamination affecting the food chain.	Lead contamination was detected in soil, fish, vegetables, and water. Lead concentrations exceeded the WHO maximum limits for drinking water (10 µg/L), fish (0.2 mg/kg), vegetables (0.3 mg/kg), and soil (0.3 mg/kg), indicating potential dietary and drinking-water exposure pathways for nearby communities.
Animal Health Problems Attributed to Environmental Contamination in Lake Nakuru National Park (2007)	Waterbuck (*Kobus ellipsiprymnus defassa*) in Lake Nakuru National Park	Environmental contamination of soil and water by heavy metals, including lead	Elevated lead concentrations were detected in the liver, kidney, and muscle tissues of waterbuck.
Environmental and Occupational Exposure to Lead (2008)	Workers in several industrial sectors	Industrial activities, including battery manufacturing and metal works.	Documented occupational exposure and associated health risks, such as neurological and cardiovascular effects.
Blood Lead Levels and Potential Environmental Exposures among Children in Kibera (2009)	Children under five years living in the Kibera informal settlement	Environmental contamination (soil, dust, waste)	Elevated blood lead levels above 10 µg/dL were detected among approximately 7% (n = 387) of the children tested, indicating high exposure risks as a result of the very high levels of lead detected in soil, ranging from 3,365 to 89,570 µg/kg, far exceeding the WHO guideline range of 100–120 µg/kg.

Study/Year	Sample	Exposure Source	Key Findings
Lead Poisoning from Used Lead-Acid Battery Recycling: Owino-Uhuru Case Study (2012)	Community members living near the battery recycling site in Mombasa	Informal lead-acid battery recycling	Severe environmental contamination and community exposure linked to recycling activities. Resulted in miscarriages, sterility, tumors, and deaths among children and adults.
Evaluation of Occupational Lead Exposure in Informal Work Environment in Kenya (2021)	Air samples collected from 34 informal sector production sheds and 2 control areas	Informal sector activities, including welding, fabrication, spray painting, handling, and processing of lead-containing materials	56% of production sheds recorded elevated airborne lead concentrations above the OSHA permissible exposure. The highest levels occurred during welding and spray-painting activities.

Collectively, the studies indicate that lead exposure in Kenya is widespread, encompassing both occupational and environmental sources, with vulnerable populations, particularly children and pregnant women, facing ongoing health risks despite regulatory and industry efforts.

4 Key findings of the country's use of lead pigments

4.1. Overview of KRA dataset

The Kenya Revenue Authority (KRA) customs dataset provided an important source of secondary data on the importation of lead chromate pigments into Kenya during the study period. The dataset was examined to establish the nature, volume, sources, and importers associated with lead chromate pigment imports. This section provides an overview of the dataset and presents the key characteristics of the import records for the period 2021-2025, providing a basis for understanding patterns and trends in the importation of lead chromates into Kenya. See summary in Table 4.1-1 below.

Parameter	Value
Total line records	321
Years covered	2021- 2025
HS codes present	*3206.20 ONLY - HS 2841.50 = zero records*
Total verified import volume	983,615.65 kg (983.62 tons)
Total verified export volume	None
Countries of origin	India (98.6%), China (0.5%), USA (0.5%), Japan (0.4%), Portugal (0.01%)
Unique importers identified	18 distinct companies
Data source	KRA I&E Department - Ref KRA/I&E/2/1(480)26, 4 June 2026

4.1.1. HS code and application pathway

Import records show that HS Code 3206.20, covering lead chromate-based inorganic pigments used in paints and coatings, accounts for the majority of lead chromate imports into Kenya, while no imports were recorded under HS Code 2841.50 for raw lead chromate compounds. This suggests that Kenya primarily imports ready-to-use pigment formulations for decorative and industrial paint production rather than raw chemical inputs, although the possibility of incomplete data extraction cannot be entirely ruled out. The findings indicate that regulatory measures focused solely on HS Code 2841.50 would fail to capture the main trade pathway for lead chromates, underscoring the need to target the paint formulation, manufacturing, and retail sectors where products under HS Code 3206.20 are predominantly utilized.

4.1.2. Import volumes

The import data indicate continuous, year-round importation of lead chromate pigments into Kenya throughout the 2021-2025 period, with no observable interruptions. The consistency of import activity suggests that lead chromate pigments remain commercially available and actively traded within the Kenyan market despite enacting a regulatory limit on lead in paints in 2018.

Total documented imports over 2021-2025 amount to 983.62 tons; nearly one thousand tons of chromium based pigments entered Kenya over five years. The dataset year-by-year totals are definitive, not estimated.

Table 4.1 2 Annual Import Volumes of chromium based pigments (KRA Customs Data)

Year	Total (kg)	Total (tonnes)	Active Importers	Entries
2021	234,796.00	234.80	12	69
2022	227,158.21	227.16	14	69
2023	175,674.20	175.67	13	59
2024	164,177.62	164.18	12	62
2025	181,809.62	181.81	12	62
TOTAL 2021–2025	**983,615.65**	**983.62**	**18 unique (all years)**	**321**

Key volume finding

Over five years, Kenya imported 983.62 tonnes (983,615.65 kg) of lead chromate pigments under HS 3206.20. This is nearly one full thousand tonnes of a substance classified as a carcinogen and reproductive toxicant, entering the country under standard commercial import procedures with no restriction, declaration, or monitoring requirement.

The peak years were 2021 and 2022, with volumes above 227 tons each. The 2021-2022 volume doubling likely reflects post-COVID-19 supply chain normalization combined with increased construction activity and paint demand. The 2023–2024 decline likely reflects a combination of post-pandemic demand rationalization, while the 2025 rebound is a significant policy signal; it indicates no sustained phase-down is underway and that the market is re-expanding. The data also shows the continued appearance of major paint manufacturers as direct importers in 2024-2025.

4.1.3. Importer profile

KRA customs records show that Kenya's recorded lead chromate imports are concentrated among a relatively small number of firms. Between 2021 and 2025, about 18 entities accounted for all imports captured in the dataset. For confidentiality, the firms are referred to as Importer A to Importer R, ranked by total import volumes during the period (See Table 4.4-1). The sector of each importer is retained because it helps explain how lead chromate enters and moves through the Kenyan market, and where controls may be most relevant.

Import concentration is particularly high. Four entities, Importers A, B, C, and D, accounted for 66.7% of all recorded imports, while the top six importers handled over 80%. Furthermore, five paint manufacturers (Importers B, H, K, L, and M) imported a significant amount of lead chromate directly, representing 27.3% of total documented volume. This confirms that certain paint manufacturers prefer to

source raw pigments directly through import, rather than relying entirely on local chemical suppliers. See Table 4.1-3.

Table 4.1-3 Importers of Lead Chromate

Rank	Importer	Total kg	Total tonnes	Market share	Category	Year
1	Importer A	230,521	230.5	23.4%	Chemical distributor	All 5 years
2	Importer B	183,826	183.8	18.7%	Paint manufacturer	All 5 years
3	Importer C	131,810	131.8	13.4%	Chemical distributor	All 5 years
4	Importer D	110,026	110.0	11.2%	Chemical distributor	All 5 years
5	Importer E	65,444	65.4	6.7%	Chemical distributor	All 5 years
6	Importer F	64,872	64.9	6.6%	Chemical distributor	All 5 years
7	Importer G	62,187	62.2	6.3%	Chemical distributorr	All 5 years
8	Importer H	45,146	45.1	4.6%	Paint manufacturer	2021-2022
9	Importer I	25,120	25.1	2.6%	Chemical distributor	2024-2025 (New entrant)
10	Importer J	14,056	14.0	1.4%	Chemical distributor	2021-2022
11	Importer K	13,923	13.9	1.4%	Paint manufacturer	2022-2025
12	Importer L	13,023	13.0	1.3%	Paint Manufacturer	2021-2022 2024-2025
13	Importer M	12,950	13.0	1.3%	Paint Manufacturer	2023-2025 (Multi-origin)
14	Importer N	6961	6.9	0.6%	Chemical distributor	2021-2023, 2025
15	Importer O	2628	2.6	0.2%	Paint manufacturer	2021-2023
16	Importer P	725	0.73	0.07%	Shoe Manufacturer	2024
17	Importer Q	200	0.2	0.02%	Paint manufacturer	2021
18	Importer R	195	0.2	0.02%	Paint Manufacturer	2022-2024

Note: Importers N–R comprise five entities with marginal import volumes individually (each <1% market share). They include representatives from the paint manufacturing, footwear, and general industrial supply sectors. One entity (Importer M) sourced from multiple countries of origin, including India, the United States, and China

This concentration offers a clear regulatory advantage. Focusing compliance and engagement efforts on the top six importers immediately covers over 80% of documented import volume, making them the most efficient starting point for import controls, compliance monitoring, and pigment substitution efforts. Additionally, because paint manufacturers import lead chromates directly, regulator engagement must target the paint industry as a whole to successfully phase out lead-based pigments.

Evidence demonstrates ongoing risks of lead exposure from both automotive

and decorative paints across formal and informal retail sectors. In a Kenya-based study on automotive paints, products purchased from informal vendors contained lead concentrations of 220 to 2,740 ppm. In contrast, those from formal retail outlets registered lower concentrations ranging from 80.7 to 580 ppm (Mwai et al., 2023). The authors noted that lead chromates are frequently incorporated into these automotive formulations (Mwai et al., 2023). Recent studies showed lead concentrations in decorative paints sold in the country were above the 90ppm regulatory threshold (Were et al., 2023; CEJAD, 2023). The findings suggest that reducing exposure will require controls at several points in the supply chain, from importation and manufacturing to distribution, retail, and market surveillance, rather than relying on import controls alone.

4.1.4. Annual import distribution by importer category

The annual import data show that Importer A and Importer B, a paint manufacturer, were among the two most consistent major importers throughout 2021-2025, although their ranking changed from year to year. Together, they remained among the leading importers in each year, indicating that a substantial share of Kenya's recorded lead chromate imports was concentrated among a relatively small number of firms.

The data also warrant consideration of potential indirect sourcing arrangements, as some paint manufacturers may source lead chromate from chemical suppliers and distributors rather than importing it directly. Therefore, although the recorded import volumes of some paint manufacturers may be smaller than those of major chemical suppliers and distributors, the volumes imported by these suppliers may partly reflect demand from paint manufacturers and other downstream users. The import data alone do not, however, allow the final end-use or purchaser of the imported lead chromate to be established.

Table 4.1-4 Year-by-Year Dominant Importers (Anonymized)

Year	#1 Importer (tonnes, share)	#2 Importer (tonnes, share)	#3 Importer (tonnes, share)	Year total
2021	Importer A (56.6 t, 24.4%)	Importer B(41.2 t, 17.7%)	Importer H(34.2 t, 14.7%)	234.8 t
2022	Importer B (47.2 t, 20.5%)	Importer A(44.4 t, 19.4%)	Importer F(41.0 t, 17.8%)	227.6 t
2023	Importer A (47.3 t, 26.9%)	Importer C(45.4 t, 25.8%)	Importer B(23.5 t, 13.4%)	175.7 t
2024	Importer B (42.7 t, 26.0%)	Importer A(39.3 t, 24.0%)	Importer D(21.5 t, 13.1%)	164.2 t
2025	Importer A (42.9 t, 23.6%)	Importer C(30.2 t, 16.6%)	Importer B(29.2 t, 16.1%)	181.8 t

Source: Author's analysis

Importers A and B are the two consistently dominant importers across all five years. The annual figures also show that the overall volume of recorded imports declined from 232.4 tons in 2021 to 164.2 tons in 2024, before increasing to 181.8 tons in 2025. This suggests some fluctuation in the market over the study period, although the available customs data do not by themselves establish the reasons for these changes.

Overall, the year-by-year pattern points to a concentrated yet evolving import structure. The continued prominence of Importers A and B suggests that a relatively small number of firms could be key targets for engagement in any programme aimed at monitoring or reducing lead chromate imports. However, the import data capture only direct imports and therefore may not fully reflect the downstream distribution and use of lead chromates in Kenya.

In particular, major chemical suppliers and distributors may resell imported lead chromates to paint manufacturers and other users who may appear lower in the import records or may not appear among the direct importers at all. Regulatory attention should therefore extend beyond the largest direct importers to include chemical suppliers and distributors, as well as the paint manufacturers and other downstream users purchasing lead chromates from these firms. The emergence of new or previously smaller importers further reinforces the need for a comprehensive approach that considers the broader supply chain rather than focusing solely on the largest direct importers.

4.1.5. Country of origin

The import data reveal an overwhelming dependence on India, Kenya's primary source of lead chromate pigments. India accounted for 313 import transactions and 969,791 kg(or roughly 970 tons), representing 98.6% of total imports from 2021 to 2025. This indicates a highly concentrated supply chain in which Kenyan manufacturers rely predominantly on Indian producers for lead chromate pigments.

Imports from other countries were negligible in comparison. China and the United States each accounted for approximately 0.5% of total imports, while Japan accounted for 0.4% and Portugal for only 0.01%. These limited volumes suggest occasional or specialized shipments rather than established alternative supply chains. (See Tabcle 4.1-5a)

Table 4.1-5a Country of origin of chromium based pigments imports (Custom Data)

Country	No. of Entries	Import Volume (Kgs) (2021-2025)	Import Percentage
India	313	969,791	98.6%
China	1	5,230	0.5%
USA	1	4,450	0.5%
Japan	2	4000	0.4%
Portugal	4	145	0.01%

Source: KRA Custom Data

For the comparable period of 2021–2024, KRA data recorded approximately 793 tons of imports from India, compared with 1,013 tons reported by UN Comtrade, a difference of approximately 220 tons (27.7%). Despite this discrepancy, both datasets identify India as the dominant supplier.

UN Comtrade also records Viet Nam, Italy, and South Africa as additional sources that are not reflected in the corresponding KRA records. These discrepancies may result from differences in trade reporting and classification, indirect supply routes, or transshipment. They highlight the need for improved trade-data harmonization and supply-chain traceability, particularly given Kenya's heavy reliance on a single source country.

Table 4.1-5b Country of origin of chromium based pigments imports (UN-Comtrade)

Year	#1 Importer (tons)	#2 Importer (tons)	#3 Importer (tons)	Year total
2021	India (311.3 t)	Japan (4t)	Italy (2.7 t)	318.6 t
2022	India (266.3 t)	Viet Nam (28t)	Italy (4.9t)	299.5t
2023	India (238.4t)	Italy (1.3t)	South Africa (0.76t)	241t
2024	India (197.2t)	South Africa (4.5t)	Portugal (0.07t)	201.7t

Source: UN Comtrade

According to Comtrade data, imports from India recorded an annual decline from 311.3 tons in 2021 to 197.2 tons in 2024, indicating a gradual reduction in import volumes. While alternative suppliers appeared intermittently, none accounted for a substantial share of total imports, reinforcing Kenya's continued dependence on Indian producers.

Kenya's heavy reliance on India for lead chromate pigment imports has significant policy implications as global chemical controls evolve. Changes in India's export policies, future measures under the Global Framework on Chemicals (GFC), or stronger international controls could affect Kenya's access to these pigments. Although lead chromate is not currently subject to the Rotterdam Convention's Prior Informed Consent (PIC) procedure, Kenya should strengthen chemical safety management, promote safer alternatives and substitution, and support the gradual phase-out of lead chromate use in paints.

In addition, Kenya should strengthen Customs and border controls on lead chromate imports, including improved importer registration, product disclosure, traceability and pre-shipment verification. These measures should be implemented within the existing framework of KEBS standards, the Environmental Management and Coordination Act (EMCA), relevant EAC requirements and the GFC, to ensure that lead chromates entering the country are properly identified, monitored and controlled.

4.1.6. Product diversity and grades

The customs data indicate that Kenya imports a diverse range of lead chromate pigments and related yellow and red pigment formulations, comprising various commercial brands, proprietary product lines, and color grades rather than a single standardized product. The identified products include key color categories such as Lemon Chrome, Middle Chrome, and Scarlet Chrome, alongside several proprietary formulations, with imports sourced primarily from Indian manufacturers and suppliers. Importantly, the review also identified lead-free alternatives designed to replicate the color characteristics of lead chromate pigments, including L34, M34, and DCC 5012 MC Yellow LSL. These alternatives demonstrate that lead-free substitutes are available within the range of products serving similar applications. The identified products and their respective classifications are summarized in Table 4.1-6.

Table 4.1-6: Lead chromate grades and formulations

Product family	Key grades	Suppliers named in records
Anuchrome series (Anupam Colours)	L-21 (Lemon), M-11/M-16 (Middle), S-41/S-46 (Scarlet)	Anupam Colours & Chem Ind Pvt Ltd
Sudadur series (Sudarshan Chemical)	1221C, 1222C, 1222K, 1310K, 1322C, 1322K, 1475K, 1483C	Sudarshan Chemical Industries Ltd
Voxco series	VOS-250 (Lemon), VOS-350 (Middle), VOS-750 (Scarlet)	REDA Industrial Materials / Voxco
Meghna Colour Chrome	YU-26 (Lemon), YU-35 (Middle), OR-75 (Scarlet), 9048	Meghna Colour Chem Pvt Ltd
Sparchrome / Pillar series	L34, M34 (Yellow)	Pillar Chemicals Pvt Ltd
Pinnacle Lemon Chrome	Chrome 122	Pinnacle Solutions FZC
Kevin Chrome	Lemon, Middle, Scarlet	Kevin (India) CO.
Deep Chem	Lemon, Middle, Scarlet	Deep Chem
Alliance Organics	Pigment Yellow 34 (Middle), Pigment Red 104 (Scarlet)	Alliance Organics LLP
DCC / Neuce series	DCC 5012 MC Yellow LSL	Neuce Industria de Tintas SA (Portugal)

Source: KRA Customs Data

The diversity of lead chromate grades, product names, suppliers, and end uses in Kenya indicates that the substance is used across multiple industrial applications beyond paints, including footwear production. This highlights a regulatory gap where controls based solely on product or grade names could allow similar materials to enter the market under different classifications. Effective regulation should therefore cover the substance itself, irrespective of grade, trade name, supplier, or intended end use, to ensure comprehensive control of lead chromate imports.

4.1.7. Lead chromate pigments production in Kenya

No published evidence indicates that lead chromates are produced domestically in Kenya. Available studies and KRA data indicate that Kenya is primarily an importer rather than a manufacturer of lead chromate pigments. Given the absence of identified domestic production, stronger controls and support for listing lead chromates under the Rotterdam Convention are unlikely to have significant economic repercussions for local manufacturers/industries and could facilitate a safer transition to alternatives.

4.1.8. Lead chromate exports from Kenya

The import data provided by KRA do not indicate any exports of lead chromate pigments from Kenya during the period under review. However, data from the United Nations Comtrade Database suggest otherwise, showing that Kenya exported 96.6 tons of chromium based pigments to several East African Community countries, including Uganda, Rwanda, Tanzania, and Burundi, between 2021 and 2024 (see Table 4.1.8). No trade data for 2025 were available in the Comtrade database at the time of this assessment.

The discrepancy between the KRA and Comtrade records may be attributable to differences in reporting methodologies, product classifications, re-export activities, or the aggregation of chrome-based pigments under broader HS codes that do not exclusively represent lead chromates. The reported exports may also involve chemical suppliers or distributors in Kenya redistributing imported PbCr to other

EAC countries, rather than exports originating from Kenyan manufacturers. Similarly, some Kenya-based paint manufacturers could potentially redistribute PbCr stocks to affiliated companies, branches, or paint manufacturers in other EAC countries. The available data, however, do not provide sufficient information to establish the specific actors or sources of these exports.

The reported cross-border trade highlights a potential policy gap within the EAC. While the region has adopted limits on lead in paints, continued cross-border movement of lead chromate pigments could facilitate their transfer between Partner States and undermine efforts to eliminate lead-containing paints. Further verification with customs authorities, chemical suppliers, distributors, and manufacturers is therefore necessary to establish the nature and extent of this trade and to assess the need for strengthened regional controls on the cross-border movement of lead chromates.

Table 4.1-8 Chromium based pigments exports from Kenya (UN-Comtrade)

Year	#1 Exporter (tons)	#2 Exporter (tons)	#3 Exporter (tons)	Year total
2021	Uganda (14.6t)	Rwanda (6.3t)	Burundi (4.5t)	28.6t
2022	Uganda (19.4t)	Rwanda (12.3t)	Burundi (4.1t)	37.5t
2023	Uganda (25.9t)	Tanzania (0.5t)	Burundi (0.45t)	26.9t
2024	Uganda (2.3t)	Tanzania (1.4t)	-	3.6t

According to the Comtrade data, Kenya's exports of lead chromate pigments increased from 28.6 tons in 2021 to 37.5 tons in 2022, indicating growing regional demand during this period. Uganda emerged as the dominant export destination, with imports increasing from 14.6 tons in 2021 to 25.9 tons in 2023. Rwanda was also a significant market between 2021 and 2022, receiving 6.3 tons and 12.3 tons, respectively, while Burundi consistently imported smaller quantities. Tanzania appeared as an export destination only in 2023 and 2024, accounting for relatively modest volumes.

Total exports declined to 26.9 tons in 2023 and then fell sharply to 3.6 tons in 2024. This decline may reflect shifting market demand, increased regulatory controls on lead-containing pigments, a transition towards safer alternatives, or changes in trade reporting practices. Regulatory developments within the EAC may also have contributed to this trend. Uganda amended its paint standards in November 2021 to align with the EAC 90-ppm lead limit. In Rwanda, the Rwanda Standards Board applied the 90-ppm limit, with LEEP supporting efforts to strengthen compliance and enforcement. The reported implementation of the EAC lead limit may have contributed to the decline in Rwanda's reported imports of lead chromate pigments from 2023 onwards. These developments suggest that strengthening regulatory controls on lead in paint may influence regional demand for lead-containing pigments.

Overall, the findings demonstrate the importance of strengthening regional controls on the importation, use, and cross-border movement of lead chromates to prevent regulatory gaps from enabling continued trade within the EAC.

4.2. Findings from key informant interviews

To complement the analysis of Kenya Revenue Authority (KRA) customs data, qualitative interviews were conducted with paint and coatings manufacturers to assess current use of lead chromates, procurement practices, the availability and performance of alternatives, regulatory compliance, and manufacturers' experiences and perspectives on the potential restriction of lead chromate imports. Five companies were initially approached for participation, and two agreed to participate and subsequently completed the Key Informant Interviews (KIIs). The two respondents represented manufacturers producing decorative paints, industrial coatings, road-marking paints, and metal protective/anti-corrosion coatings.

4.2.1. Manufacturers profile

The manufacturers represented different production scales, product portfolios, and market orientations. Their reported annual production capacities ranged from approximately 600 to 1,000 tons. Their products serve both domestic and export markets, with one manufacturer reporting a market distribution of approximately 60% domestic and 40% export.

4.2.2. Current use and procurement of lead chromates

Two of the interviewed companies denied importing lead chromate pigments during the study period, yet both appear in the KRA customs records as having made documented imports under HS 3206.20. However, it is important to note that manufacturer 2 last recorded year of import was 2024. This discrepancy between interview responses and customs data underscores the limitations of voluntary self-reporting as a compliance mechanism. It reinforces the case for mandatory import registration and end-use declaration requirements with regulatory enforcement authority.'This finding contrasts with the KRA customs records, which show that lead chromate-related materials were imported into Kenya during the 2021-2025 period.

The discrepancy between the manufacturers' reported current practices and the customs records suggests that the imported materials may be entering the market through chemical distributors, other industrial users, or manufacturers not captured in the interviews, or may reflect procurement for purposes other than current paint production. Further investigation of importers, distributors and downstream users is consequently necessary to establish the destination, applications and current use of the imported materials.

4.2.3. Availability of alternatives

The manufacturers indicated that alternatives to lead chromates are available or are being considered. The identification of specific alternative pigments suggests that the availability of alternatives may not, on its own, constitute the principal barrier to eliminating lead chromates from paint production.

4.2.4. Product lines in which alternatives are available

The interviewed manufacturers indicated that alternatives to lead chromates are available across different paint applications, including decorative paints and industrial applications.

The alternatives are sourced through established international supply chains, with manufacturers identifying suppliers from European countries, including Italy, Spain, Portugal, Poland, and Germany, as well as China and India. This indicates that there is physical availability of lead-free pigments, which further provides a basis for paint ingredient reformulation and compliance with existing lead paint regulations.

4.2.5. Comparative performance of lead-free alternatives

The study assessed lead-free alternatives in terms of cost, availability, and customer acceptance. Manufacturers generally considered the alternatives to be comparable to lead chromate pigments in terms of availability; however, differences were reported in cost and customer acceptance. Both manufacturers noted that awareness among buyers remains low and that cost continues to influence purchasing decisions, contributing to uncertainty regarding the uptake of lead-free alternatives. Addressing these factors will therefore be important in facilitating a sustainable transition away from lead chromates. "*Customers overlook lead-free paints in favor of those containing lead chromates, making it difficult for us to remain competitive in the Kenyan market. We look forward to a harmonized pricing framework for paints in Kenya that would provide a level playing field and enable us to compete more effectively with our counterparts. Currently, we have to adjust our prices to match those of paints containing lead chromates to remain competitive, despite the higher cost of lead-free alternatives, leading to lower profit margins and losses*," said manufacturer 2.

4.2.6. Regulatory awareness and compliance

All manufacturers indicated awareness of Kenyan regulatory requirements relating to lead content in paints and related products. Compliance was supported through various mechanisms, including internal laboratory testing, supplier certifications, third-party certification, and engagement with the Kenya Bureau of Standards (KEBS). Manufacturers also reported undergoing regulatory inspections and compliance audits related to chemical safety. Overall, the findings indicate that manufacturers have established regulatory awareness and compliance mechanisms, supported by a combination of internal controls, supplier information, certification processes, and regulatory oversight.

4.2.7. Product labelling

The manufacturers indicated that their products are not labelled as "lead-free," as the applicable KEBS guidelines and standards do not require such information to be included on product labels. This may limit consumer awareness and informed decision-making, as consumers may be unable to distinguish products that are manufactured without lead chromates from those that contain them. The absence of a "lead-free" or similar labels and pictograms such as "lead-safe" and "no lead" may also reduce market transparency by making it difficult for manufacturers to communicate the use of safer products to consumers. As manufacturer 2 explained: "*Our products are not labelled as 'lead-free' because the KEBS guideline we follow does not provide for or require such labelling*". While no Kenyan law categorically prohibits manufacturers from voluntarily labelling their products as lead-free, such claims are subject to applicable KEBS standards and labelling guidelines. KEBS has indicated that it does not encourage or permit specific lead-related claims on paint labels, citing the risk that manufacturers of lead-containing products could

misuse such claims to mislead consumers. This position creates a practical barrier to voluntary lead-free certification and highlights the need for a clear, KEBS-endorsed protocol for verifiable lead-free product claims

4.2.8. Transition challenges to lead-free production

The manufacturers indicated that they had adopted alternatives to lead chromates and were already operating lead-free production. However, the availability, affordability, and suitability of alternatives vary by application. The main barriers identified were the higher cost of alternatives, particularly for industrial applications, as well as technical requirements such as performance and durability in applications such as road-marking paints. Customer resistance may also limit uptake where lead-free products are more expensive. Health considerations, however, provide an important justification for continued substitution given the potential risks associated with lead exposure.

At the time of the interviews, Manufacturer 2 indicated that the high cost of lead-free alternatives had affected the production of road-marking paints, with the company shifting to an order-based model for clients able and willing to meet the additional cost. The manufacturer noted, "*I have stopped the production of road-marking paints because the available alternatives are too expensive for many clients to afford. We have therefore resorted to producing road-marking paints on an order basis, specifically for clients who are able and willing to meet the additional cost of reformulating the paints using these alternatives*." This illustrates how the cost of substitution can affect both manufacturers and consumers.

These findings are consistent with the 2025 University of Nairobi study, which detected lead chromates in 80% of yellow road-marking paints and 25% of oil-based residential paints sampled across the country (Were, 2025). The continued detection of lead chromates despite the availability of alternatives highlights the need to address both economic and technical barriers to substitution while strengthening awareness of the health benefits of safer alternatives.

Measures should therefore be introduced to reduce the cost and improve the competitiveness of lead-free alternatives, while manufacturers should engage their customers and communicate the relevant KEBS requirements and the benefits of safer paint products. KEBS could complement these efforts by conducting awareness-raising among end users, including painters, contractors, and consumers, to encourage informed purchasing and greater demand for lead-free paints.

4.2.9. Support required for full transition

Tax incentives for alternative pigments and public awareness campaigns were identified as measures that could support a full transition to lead-free production. Economic incentives, including reduced import duties on alternative pigments, could help address the higher cost of lead-free alternatives and facilitate further substitution. In addition, strengthening awareness among painters, architects, construction workers, consumers, and the general public could help increase demand for safer alternatives, given the influence of these groups on paint selection and purchasing decisions. As noted by Manufacturer 1, "*There are very low levels of awareness among consumers and the general public. Therefore, I am requesting NGOs to kindly consider creating awareness among consumers, particularly painters, who largely influence the purchasing of paints for their clients.*

The paints purchased often end up containing lead chromates because they do not have sufficient information about their effects."

The government could further support the transition through public procurement policies, particularly for public infrastructure projects, by requiring the procurement and use of paints without added lead, in line with relevant laws and standards. Such measures would not only reduce potential exposure to lead in publicly funded projects but could also create stronger market demand for safer, lead-free alternatives and encourage manufacturers to accelerate the transition away from lead-containing pigments.

4.2.10. Potential impact of an immediate import ban

Both manufacturers indicated that an immediate restriction on lead chromate imports would have no significant impact on their current operations, suggesting that they have already transitioned away from lead chromate or have access to suitable alternatives. This finding provides useful context to the continued imports recorded in KRA customs data.

However, the manufacturers' ability to operate without lead chromate does not mean that continued imports are without public health or market implications. Continued availability and potential use of lead chromates may sustain risks of lead exposure among workers, consumers, and the general public. An import restriction could therefore not only reduce potential public health risks but also help address these competitive disparities by encouraging a more consistent transition towards lead-free production across the sector.

These findings should nevertheless be interpreted with caution, as the interviews involved only two manufacturers and may not reflect the practices of chemical distributors, downstream users, or other manufacturers that may still rely on lead chromate-related materials.

4.3. Synthesis of the findings

The manufacturer interviews provide an important perspective for interpreting the KRA customs findings. While the customs data show that significant quantities of lead chromate-related materials entered Kenya between 2021 and 2025, the interviewed manufacturers indicated that they do not currently use or procure lead chromates. This discrepancy suggests that import records do not necessarily correspond to current use by some paint manufacturers. The materials may instead be entering the market through chemical distributors, being supplied for other industrial applications, or reaching downstream users and manufacturers not covered by the interviews. Further investigation of these actors is therefore necessary to establish the destination and applications of the imported chemicals.

The interviews nevertheless indicate that substitution is technically feasible for several applications, with manufacturers identifying alternatives such as Solvent Red, Solvent Yellow, Solvent Green, Solvent Orange and Solvent Violet pigments for road-marking applications. Both manufacturers also reported taking steps to reduce, phase out, or avoid the use of lead chromates. However, the transition presents economic and market-related challenges, particularly for road-marking paints.

The cost of alternatives, concerns about performance and durability, and customer acceptance were identified as important barriers. Manufacturers further noted that painters can significantly influence customers' purchasing decisions, underscoring the need for awareness among market intermediaries and consumers.

To facilitate the transition to safer paint products, manufacturers identified measures including tax incentives, reduced import duties on alternative pigments, and public awareness campaigns. Such interventions could improve the affordability and uptake of alternatives while strengthening awareness of the health and environmental benefits of lead-safe paints.

The potential impact of regulatory action is also significant. Both manufacturers indicated that an immediate ban on lead chromate imports would have no significant effect on their operations, suggesting that at least some manufacturers may already be positioned to operate without lead chromates. However, this finding cannot be extrapolated to the wider sector, given the possible involvement of chemical distributors, downstream users, and manufacturers not covered by the interviews.

Against this background, stronger controls on the importation of lead chromate-related materials could be considered. Applying a Prior Informed Consent (PIC) procedure could provide an interim or complementary control mechanism by subjecting imports and their intended uses to appropriate notification, information-sharing, and regulatory oversight. This would help identify legitimate remaining uses, improve traceability of importers and downstream users, and generate additional evidence to inform decisions on further restrictions.

Overall, the findings demonstrate the need to reconcile KRA import records with current use across the wider supply chain. While the customs data confirm that lead chromate-related materials are entering Kenya, the manufacturer interviews do not indicate current use or procurement. Further investigation of importers, chemical distributors, other manufacturers, and downstream users is therefore warranted. At the same time, the availability of alternatives and the limited anticipated impact of an import ban on the interviewed manufacturers provide a basis for considering stronger restrictions. Such measures should be complemented by improved traceability, support for affordable alternatives, and awareness among painters, consumers, including government institutions, schools, private developers, architects, and other market actors to facilitate an effective transition away from lead chromates.



5 Conclusions and Next Steps

5.1 Conclusion

The Kenya Revenue Authority (KRA) customs dataset identifies approximately 18 companies that account for the majority of lead chromate imports into Kenya, indicating a highly concentrated importer base. Analysis of the five-year customs dataset (2021-2025) yields five principal conclusions.

1. Kenya has an active and well-established market for lead chromate imports. The data indicate sustained annual imports of lead chromate pigments, amounting to hundreds of metric tons over the study period. Imports enter through a stable, commercially organized supply chain that primarily serves the domestic paint manufacturing sector, with no evidence of a sustained market decline or voluntary phase-out.
2. The absence of lead chromate-specific regulatory controls represents a significant policy gap. The customs data do not indicate import licensing, quotas, or other controls specific to lead chromate pigments. This observation is consistent with the absence of dedicated regulatory measures governing lead chromate imports and their use in paints. At the international level, the Global Framework on Chemicals (GFC) identifies lead in paint as a priority issue for risk reduction, reinforcing the need for national action to strengthen chemical management and public health protection (UNEP, 2023; WHO, 2021).
3. Several regulatory measures could be implemented using existing legal and institutional frameworks. Potential policy options include establishing an importer registration system, adopting mandatory lead-content limits through the Kenya Bureau of Standards (KEBS), and implementing a phased restriction or prohibition on lead chromate pigments under the Environmental Management and Coordination Act (EMCA). These measures could be pursued within existing regulatory mandates, subject to the applicable legal and administrative processes.
4. Targeted industry engagement is both practical and achievable. Because approximately 18 companies account for most recorded imports, regulatory authorities can engage a relatively small group of stakeholders to facilitate reformulation planning and implementation. International experience demonstrates that technically feasible and commercially available alternatives to lead chromate pigments are already widely used in jurisdictions that have adopted lead paint restrictions (UNEP, 2023; IPEN, 2022).
5. Regional coordination would strengthen the effectiveness of national action. Kenya's import profile may reflect broader patterns of lead chromate use across East Africa. Coordinated regulatory approaches through the East African Community (EAC) could reduce the risk of regulatory arbitrage, promote harmonized product standards, monitor cross-border trade, and enhance the public health benefits of lead-paint elimination initiatives (Author's analysis, 2025).

5.2 Recommendations

Based on the analysis of Kenya Revenue Authority customs data and the current regulatory framework, the following actions are recommended to support the phased elimination of lead chromate pigments in Kenya.

1. Strengthen International and National Policy Commitments: In collaboration with the United Nations Environment Programme (UNEP), the Global Framework on Chemicals (GFC) Secretariat, and other international partners, Kenya should support the nomination of relevant lead chromate compounds for listing under the Rotterdam Convention's Prior Informed Consent (PIC) procedure. At the national level, the study's findings should be formally considered by the National Chemicals Management Committee and incorporated into Kenya's GFC National Implementation Plan.
2. Strengthen Import Controls and Market Transparency. The National Environment Management Authority (NEMA), in collaboration with the Kenya Revenue Authority (KRA), should establish an importer registration and disclosure system for products classified under HS Codes 320620 and 284150. Registered importers should report annual import volumes, product types, intended end uses, and brands. In addition, enhanced pre-shipment inspection requirements, including certificates of composition and end-use declarations, should be introduced to improve traceability and regulatory oversight before importation.
3. Strengthen the National Regulatory Framework: The Government should develop subsidiary legislation under the Environmental Management and Coordination Act (EMCA), Cap. 387, to prohibit the use of lead chromate pigments in decorative and residential paints while establishing a phased transition for industrial coatings. A transition period of 12-18 months would provide the industry with sufficient time to adopt safer alternatives while minimizing economic disruption.
4. Facilitate Industry Transition: Regulatory authorities should engage directly with paint manufacturers and pigment importers to communicate the proposed regulatory changes and provide technical guidance on commercially available lead-free alternatives, including azo pigments, molybdate orange blends, and other organic pigments. Given that a relatively small number of companies account for most imports, a structured stakeholder engagement process is likely to be effective.
5. Promote Regional Harmonization: Kenya should work with East African Community (EAC) Partner States to assess regional trade flows in lead chromate pigments and develop harmonized regulatory measures. Coordinated regional action would reduce opportunities for regulatory arbitrage, strengthen enforcement, monitor cross-border trade, and support the consistent implementation of lead-paint controls across the region.

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