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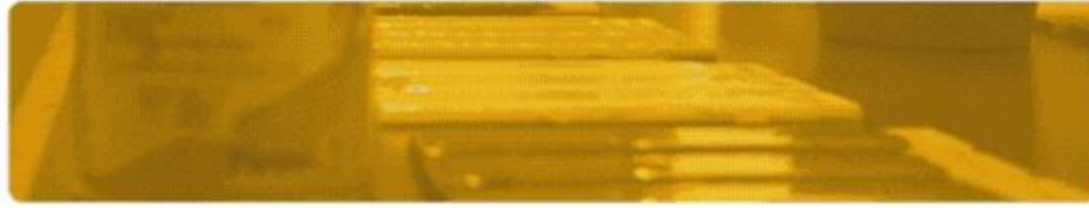
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Conflict of interest statement

I declare that I have no conflict of interest related to this research and that I have no personal or financial relationships that could influence my work.



MÉXICO



PLOMO EN PINTURAS A BASE DE SOLVENTES PARA USO DOMÉSTICO EN MÉXICO

Octubre 2018



MEXICAN TOXICITY

THE SUPPLY CHAIN
OF LEAD COMPOUNDS
FOR THE POTTERY,
PLASTIC AND PAINT
INDUSTRIES



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The lead crisis in Mexico

Lead poisoning has been identified as a pervasive problem in Mexico. The National Health and Nutrition Surveys (ENSANUT) have estimated that 17.4% of the population between 1 to 4 years of age has lead poisoning, which is equivalent to 1.4 million children, and to 3.5 million children aged 1 to 14.

Although the country eliminated the use of leaded gasoline since 1997, important sources of exposure persist. Many studies have noted that widespread lead poisoning comes from the use of glazed pottery. However, few studies have adequately evaluated the contribution of other consumer products to this exposure, such as plastics and paints.

Why is this report important?



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Despite 20 years of efforts to address lead in pottery, few potters have transitioned to lead-free glazes. Mexico has also failed to effectively control the use of lead in paints and plastics. The country lacks comprehensive regulations and even the existing deficient ones are not being monitored for due compliance.

The objective of this report was to look for solutions from a new perspective: **We set out to investigate the sources of lead compounds identifying the manufacturers and distributors that supply lead chromates and lead oxides to the pottery, plastics and paint industries in Mexico in order to contribute to the development of national policies aimed at controlling or forbidding their use.**



FINDINGS

Pottery



1

Persistence of Lead Use in Traditional Pottery

Out of the 48 workshops visited, only 14% have stopped using lead glaze in their products.

2

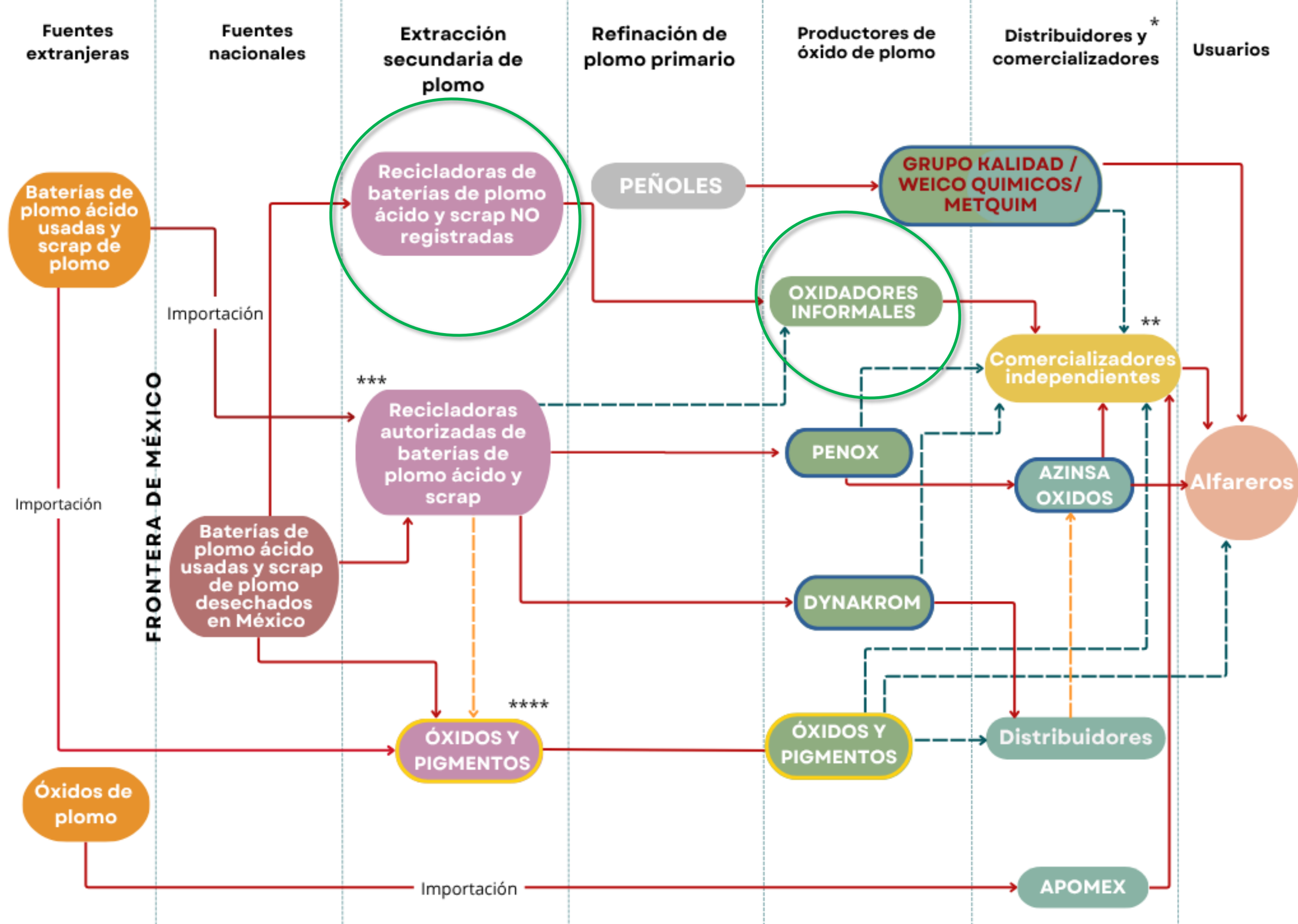
High Levels of Lead

More than half of the glaze samples collected from workshops and vendors had an average lead concentration of up to 36%, With the highest concentration being 93% lead by weight.

3

Supply of Lead Oxide

Potters were reluctant to disclose the source of their lead supplies and the containers lacked labels or markings indicating their origin or contents.



Lead oxide supply chain for potters



Paints and plastics

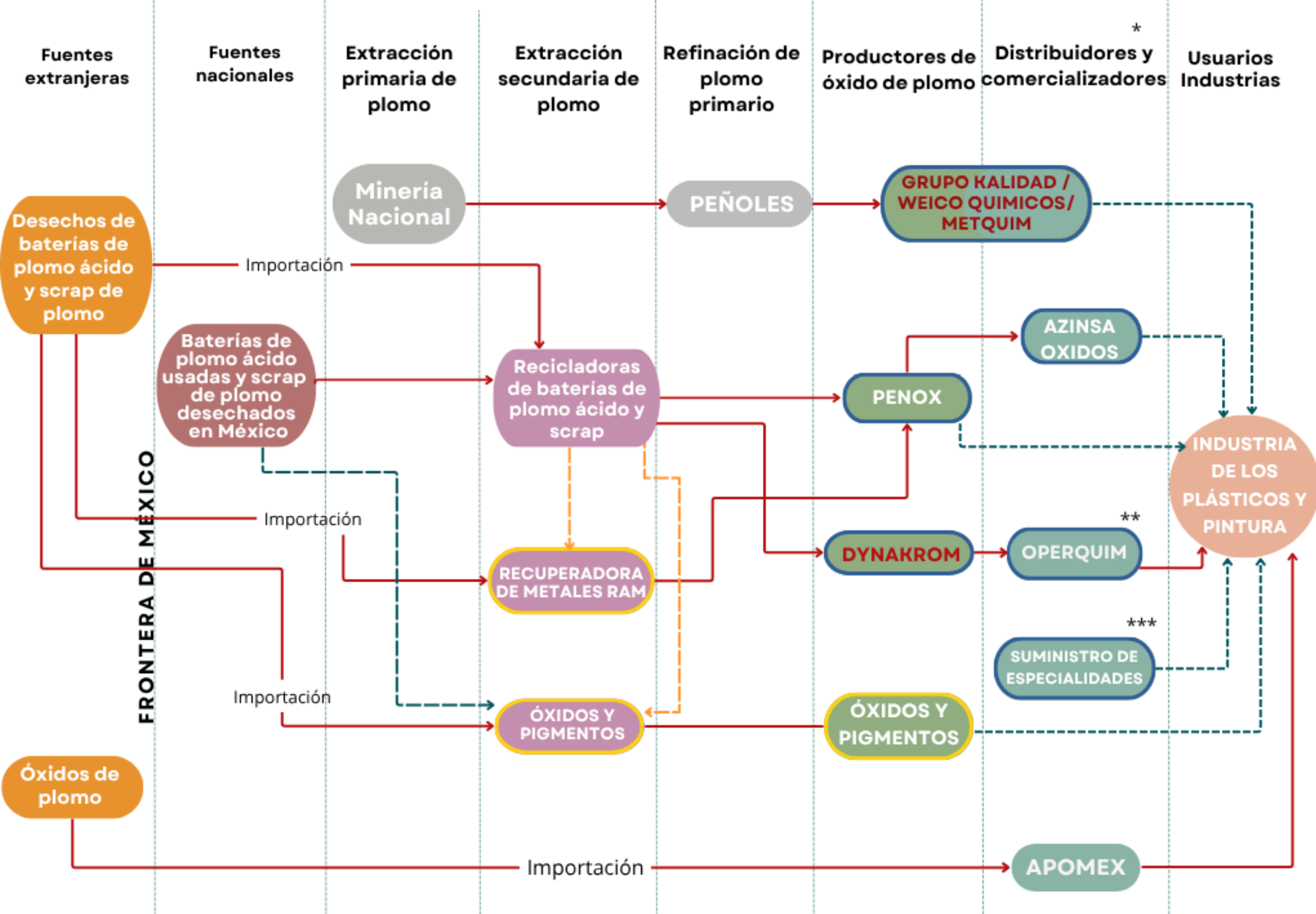
Lead Chromate: Hexavalent Chromium + Lead

This leaded pigment is one of the most commonly used in paints and plastics and was responsible for hundreds of lead poisoning cases in the United States in 2024. The European Union has banned it due to its classification as a carcinogen.

Key Manufacturers

The only Mexican manufacturer of lead chromates is Dynakrom, which holds the largest market share. Other international suppliers include Vibrantz, DCL, and Vipul Organics—privately held companies based in India and the United States.

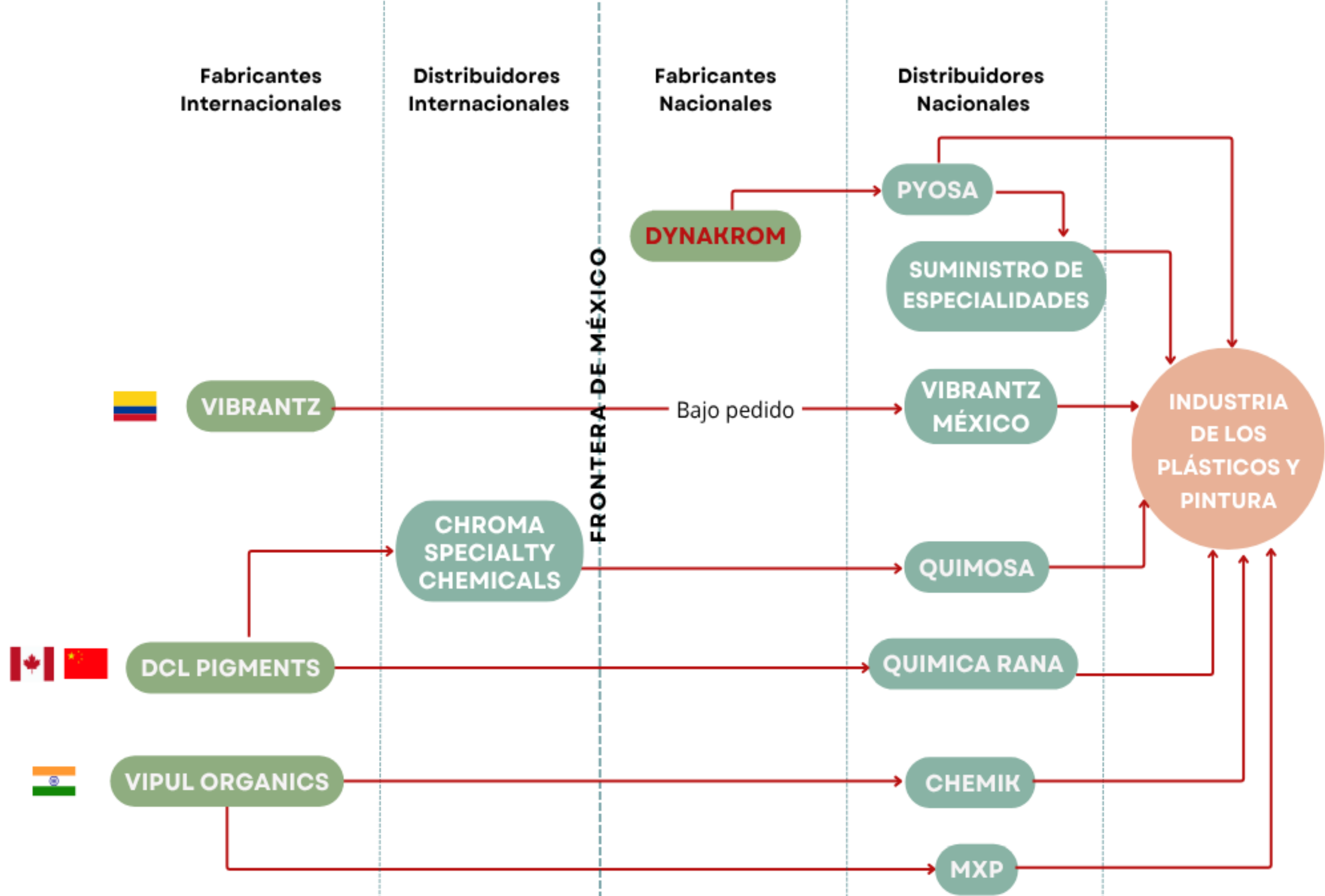




Lead oxide supply chain for paints and plastics



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Lead chromates supply chain for paints and plastics



Lead-free alternatives available

Pottery

There are substitutes for lead oxide glaze for use in low-temperature pottery that are readily available and sold at competitive prices.

Paint

Approximately half of the solvent-based paints sold in Mexico do not contain added lead, demonstrating the availability of alternatives to lead-based pigments. There are already brands whose products are entirely lead-free across all applications.

Plastic

There are viable alternatives to lead oxides and lead chromates used in plastic manufacturing, similar to those in the paint industry. In addition, calcium and zinc-based stabilizers are available as lead-free options for PVC.



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Towards a comprehensive Solution

1

Mexico must ban the production, import, and export of lead chromates due to their high toxicity and the serious risks they pose to human health and the environment.

2

Mexico must restrict the sale of lead oxides, limiting it exclusively for pre-approved applications, such as lead-acid batteries production. This measure should be supported by a permanent program providing technical, financial and infrastructure support and securing a reliable supply of lead-free glazes for traditional potters across the country.

3

Mexico must establish a comprehensive and robust regulatory framework, with strict monitoring mechanisms and strengthened border controls to supervise and, when necessary, limit the transit of chemicals, products and waste containing lead.

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Casa Cem. (2024). Mexican Toxicity: The supply chain of lead compounds for the pottery, plastic and paint industries.

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