

# Global Report on the **Status of Legal Limits on Lead in Paint**



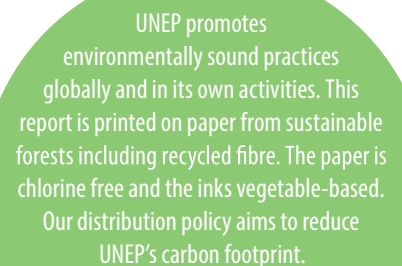
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# FOREWORD



Exposure to lead paint poses significant harmful effects to human health, especially among children. The health effects, which are generally irreversible, can have a lifelong impact. Many countries have enacted controls to address these adverse impacts, but decorative paints containing lead are still widely sold and used in many developing countries and countries with economies in transition.

This report provides a global overview on the progress of countries in passing laws and regulations that limit the manufacture, import, export, sale and use of lead paints. It also illustrates a range of legal approaches that attempt to limit the use of lead-containing paint. In so doing, it becomes a valuable reference for countries seeking to establish their own laws and regulations on lead in paint.

A global target has been set for all countries to have lead paint controls by 2020. According to this report, only 36 per cent of countries have legally binding limits on lead paint. This suggests a significant gap still needs to be filled to achieve the target on time.

I hope this report becomes a central reference for anyone involved in enacting laws, regulations or mandatory standards that prohibit the manufacture, import, sale or use of lead paint in the crucial years ahead.

A handwritten signature in black ink that reads "Achim Steiner". The signature is written in a cursive, flowing style.

**Achim Steiner**  
United Nations Under-Secretary General  
and Executive Director, UNEP

# I. INTRODUCTION

**Lead is a cumulative toxicant that poses serious risks to the environment and human health. The World Health Organization lists lead exposure as one of the top ten environmental health threats globally.<sup>1</sup>**

No safe level of exposure to lead has been identified.<sup>2</sup> Children are especially vulnerable to negative health effects from lead, including decreased intelligence, and increased behavioral issues.<sup>3</sup>

Over the years, legal restrictions on lead in many countries have successfully decreased the use of lead in fuel, plumbing and other products and processes.<sup>4</sup> These restrictions have effectively reduced the level of lead exposure in human populations. However paint for household and decorative use containing lead is still widely manufactured and purchased in many developing countries, and today is one of the major sources of lead exposure for children globally. While many highly industrialized countries have enacted laws, regulations or mandatory standards that prohibit the manufacture, import, sale or use of lead paint for interiors or exteriors of homes, schools and commercial buildings, decorative paints containing lead are still widely sold and used in many developing countries and countries with economies in transition.

Available data from paint testing studies in thirty-seven (37) developing and transition countries on 1,500 new enamel decorative paints, summarized in a United Nations Environmental Programme (UNEP) report, revealed that new paints with high lead

concentrations are widely available to consumers in many regions of the world.<sup>5</sup> The data from these studies highlight that without appropriate national legislation and regulation, paints with lead will continue to be available in local markets.<sup>6</sup> Deteriorating lead paint creates an ongoing pathway for contamination and exposure and the need for expensive lead paint removal and environmental contamination remediation. Eliminating lead paint significantly reduces the risk of lead exposure, and thus reduces risks to human health.

UNEP and the World Health Organization (WHO) convened the Global Alliance to Eliminate Lead Paint (The Lead Paint Alliance) in 2009 at the International Conference on Chemicals Management. The Alliance is a voluntary partnership established to prevent children's exposure to paints containing lead and to minimize occupational exposures to lead paint.<sup>7</sup> The Alliance promotes the phase-out of the manufacture and sale of paints containing lead by 2020 and the reduction of the risks posed by lead-containing paints, especially to children.<sup>8</sup> One of the Alliance's specific priorities is promoting the establishment of appropriate national legislative and regulatory frameworks to stop the manufacture, import, export, sale and use of lead paints

(see definitions in Table 1) and products coated with lead paints.<sup>9</sup> The Alliance has established the following target: "by 2020, all countries will have adopted national legally binding laws, regulations, standards and/or procedures to control the production, import, sale and use of lead paints with special attention to the elimination of lead decorative paints and paints for other applications most likely to contribute to childhood lead exposure."<sup>10</sup> In this report we will refer to these legally binding controls as "lead paint controls" (LPCs).

In October 2015 the International Conference on Chemicals Management Fourth session (ICCM4) passed a resolution recognizing progress in achieving this goal. The resolution also encouraged governments, civil society and the private sector to participate in the work of the Alliance to assist in achieving this goal and encouraged stakeholders "to promote and/or initiate national and/or regional discussions to address the possible establishment of effective measures, including regulation, to phase out the use of lead in paint."<sup>11</sup>

At the United Nations Sustainable Development Summit on 25 September 2015, world leaders adopted the 2030 Agenda for Sustainable Development, which includes a set of 17 Sustainable Development Goals (SDGs) to end poverty, fight inequality and injustice, and tackle climate change by 2030. The focus of the Lead Paint Alliance on preventing lead exposure among children from paint is particularly relevant to Goal 3 of the SDGs which seeks to "ensure healthy lives and promote well-being for all at all ages." More specifically, SDG 3.9 states "by 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals..."<sup>12</sup>

**Table 1 | Lead Paint Alliance: Definitions of Key Terms<sup>13</sup>**

Definitions of Key Terms	
<b>Lead paint</b>	Paint to which one or more lead compounds have been added.
<b>Lead compounds (typically added to paint)</b>	“Lead compounds” include, but are not limited to: Lead monoxide, Lead octanoate, Lead chromate, Lead 2-ethylhexanoate, Lead sulfate, Lead oxide, Lead molybdate, Lead nitrate, Lead sulfo-chromate yellow, Lead naphthenate, Lead chromate molybdate sulfate red, Lead peroxide, Lead carbonate (white lead), Lead chromate oxide and Tri lead - bis (carbonate) - dihydroxide <sup>1</sup> . (this list is non-exhaustive)
<b>Paint</b>	“Paint” includes varnishes, lacquers, stains, enamels, glazes, primers or coatings used for any purposes. Paint is typically a mixture of resins pigments, fillers, solvents, and other additives.

Based on legal best practices, the following overarching objectives of lead paint controls have been identified by UNEP<sup>14</sup>.

1. Prevent the manufacture, use, import, and export of lead paint.
2. Develop a system with effective means of enforcement and compliance and integrate the new lead paint laws and regulations into existing legal frameworks.
3. Establish institutional responsibilities and arrangements for the management and enforcement of legislation.

The objective of this report is twofold: First, it presents a global overview of lead paint controls currently in place and second, the report provides an illustrative, more detailed snapshot of the range of legal approaches presently being used in a subset of countries to limit the use of lead-containing paint. This report is intended for use as a reference for countries seeking to establish their own laws and regulations on lead in paint.

It is organized as follows:

- I. Introduction
- II. Methodology
- III. A Global Overview of Countries with Legally Binding Limits on Lead in Paint
- IV. Illustrative Examples of Regulatory Approaches
  - a. Restrictions on Content and Use of Lead Paint
  - b. Regulations on the Manufacture, Export, Import, and Sale of Lead Paint
  - c. Paint Testing and Labeling Requirements
  - d. Enforcement Provisions
- V. Conclusion

**a. SAICM Report on the Status of Phasing Out of Lead Paint by Countries, September 2015**

In order to measure progress on the establishment of lead paint controls, UNEP and WHO requested information over the period 2014-2015 from government representatives from all 196 countries that are members of the United Nations, and summarized the findings in a report to a meeting of the Strategic Approach for International Chemicals Management (SAICM).<sup>15</sup> The 2015 SAICM report assessed whether countries have adopted legally binding laws, regulations, standards and/or procedures to control the production, import, export, sale, and use of lead paints with special attention to the elimination of lead decorative paints and lead paints for other applications most likely to contribute to childhood lead exposure. The findings in the 2015 SAICM report were based on surveys conducted by contacting SAICM national focal points. The main findings of the 2015 SAICM report, as of August 31, 2015, were as follows:

- Information was lacking for 71 countries.
- Fifty-nine (59) countries verified that their national governments have, at a minimum, established legally binding restrictions on the use of lead in decorative paint.
- Sixty-five (65) governments reported that they do not have legally-binding restrictions.
- Eighteen (18) countries reported that their governments are in the process of enacting lead paint controls.



To update the 2015 SAICM report and provide more detailed information on specific mechanisms used by countries to regulate lead paint, UNEP selected 128 of the 196 countries surveyed in the 2015 SAICM report to gather additional information on national laws

and regulations on lead paint controls. These 128 countries include 71 countries for which information was lacking and 57 other countries for which additional information on lead paint controls was needed. UNEP commissioned the World Resources Institute (WRI) to conduct

legal research on laws and regulations applicable to lead paint and to compile this information. The 128 countries assessed in greater detail for this report are listed in Table 2.

**Table 2 | List of 128 Countries Assessed for this Report**

Africa	Asia and the Pacific	Western Asia	Latin America and Caribbean	Europe	North America
Algeria	Australia	Jordan	Argentina	Austria	Canada
Angola	Bangladesh	Iraq	Antigua and Barbuda	Armenia	United States
Benin	Brunei	Kuwait	Bahamas	Azerbaijan	
Botswana	Cambodia	Oman	Barbados	Belarus	
Cape Verde	Cook Islands	Saudi Arabia	Belize	Belgium	
Chad	China	Qatar	Bolivia	Bulgaria	
Equatorial Guinea	Democratic People's Republic of Korea		Brazil	Croatia	
Eritrea	Fiji		Chile	Cyprus	
Guinea Bissau	India		Cuba	Czech Republic	
Libya	Indonesia		Costa Rica	Denmark	
Mauritania	Iran		Dominican Republic	Estonia	
Mozambique	Kiribati		Dominica	Finland	
Namibia	Marshall Islands		Guyana	France	
Niger	Micronesia		Grenada	Georgia	
Nigeria	Mongolia		Jamaica	Germany	
Sao Tome and Principe	Nauru		Mexico	Greece	
Seychelles	Nepal		Nicaragua	Hungary	
Sierra Leone	New Zealand		Panama	Iceland	
Somalia	Niue		St. Kitts and Nevis	Ireland	
South Africa	Pakistan		St. Vincent and Grenadines	Israel	
South Sudan	Papua New Guinea		Trinidad and Tobago	Kyrgyz Republic	
Togo	Philippines		Uruguay	Latvia	
Zambia	Republic of Korea		Venezuela	Liechtenstein	
Zimbabwe	Sri Lanka			Lithuania	
	Thailand			Luxembourg	
	Tonga			Malta	
	Tuvalu			The former Yugoslav Republic of Macedonia	
				Montenegro	
				Monaco	
				Netherlands	
				Norway	
				Poland	
				Portugal	
				Romania	
				Russia	
				San Marino	
				Serbia	
				Slovakia	
				Slovenia	
				Spain	
				Sweden	
				Switzerland	
				Turkey	
				Turkmenistan	
				United Kingdom	
				Uzbekistan	

**b. Key Differences between 2015 SAICM Report and this Report**

A comprehensive global overview of legal paint controls merging both the SAICM data and additional analysis is presented in the following section. However, important differences between the methodologies used to collect data in the SAICM report and WRI’s analysis should be noted. Whereas the 2015 SAICM report was based on a survey of SAICM national focal points, WRI’s analysis presents a comprehensive legal analysis of the 128 countries by legal

researchers based on 29 legal indicators that examine the substantive and procedural aspects of lead paint controls (see Table 18 for list of indicators). -The 2015 SAICM report provided brief summaries of lead paint controls and focused on lead in decorative paints and lead paints for other applications most likely to contribute to childhood lead exposure. WRI’s analysis assesses legally binding controls applicable to all types of lead paint, including lead paint used in workplace and industrial settings, which means that the findings of the two reports may not be directly

comparable in terms of the definition of countries with legal limits on lead in paint. This report presents information on the lead paint controls of countries for which information was lacking in the 2015 SAICM report. This report also provides citations and links to country-specific documents describing their lead paint controls. Table 3 presents a country specific summary comparison to the 2015 SAICM report.

**Table 3 | Comparison between 2015 SAICM Report and this Report**

Comparison between this Report and the “Status of the phasing out of lead paint in countries: 2015 Global Report” (SAICM/ICCM.4/INF/25)		
Country	Government Replies to UNEP/WHO Survey (SAICM/ICCM.4/INF/25)	Information Obtained for This Report
Antigua and Barbuda	No reply	Antigua and Barbuda has a lead paint control in the workplace and follows the CARICOM <sup>i</sup> voluntary standard (600 ppm limit)
Armenia	No reply	Armenia has a lead paint control limit of 5,000 ppm <sup>16</sup>
Bahamas	No reply	Follows CARICOM Voluntary Standard (600 ppm limit) <sup>ii</sup>
Barbados	No reply	Follows CARICOM Voluntary Standard (600 ppm limit)
Belize	No reply	Follows CARICOM Voluntary Standard (600 ppm limit)
Cuba	Regulation on lead compounds limits the amount of allowable lead to 20,000 ppm	Researcher was unable to locate the relevant regulations (extensively searched and contacted gov’t authorities)
Fiji	No reply	Workplace restriction on lead paint in the Factories Act 1971 <sup>17</sup>
Grenada	No reply	Follows CARICOM Voluntary Standard (600 ppm limit)
Guyana	Licenses in Guyana are only granted for the importation and manufacture of paints that do not exceed the limit of 0.06% (600 ppm) of lead	Follows CARICOM Voluntary Standard (600 ppm limit)
Israel	No reply	Israel enacted a lead paint control with 90 ppm limit on the total lead content applicable to toys
Jamaica	No reply	Follows CARICOM Voluntary Standard (600 ppm limit) Jamaica also enacted additional voluntary standards on lead paint
Pakistan	No reply	Researcher found that there is no mandatory lead limit in paint in Pakistan.

<sup>i</sup> Caribbean Community and the Caribbean Common Market  
<sup>ii</sup> See Table 8 on countries that have adopted voluntary guidelines on limiting lead in paint.

*continued:* Comparison between this report and the “Status of the phasing out of lead paint in countries: 2015 Global Report” (SAICM/ICCM.4/INF/25)

Country	Government Replies to UNEP/WHO Survey (SAICM/ICCM.4/INF/25)	Information Obtained for This Report
<b>Trinidad and Tobago</b>	No reply	The Bureau of Standards established a 600 ppm limit on the total content of lead in paint in 2012 <sup>18</sup>
<b>Turkey</b>	No reply	Turkey established a lead restriction in 2015 that bans the sale and used of lead carbonate and lead sulphate in paint. <sup>19</sup>
<b>Venezuela</b>	No reply	Venezuela passed a workplace restriction on lead paint. <sup>20</sup>
<b>Zimbabwe</b>	No reply	Zimbabwe established a 10,000 ppm limit on lead paint. <sup>21</sup>

Based on our legal analyses, five key findings were developed. These findings are discussed throughout the report. They are presented in Table 4.

#### **Table 4 | Key Findings**

<b>Key Finding #1</b>	As of early 2016, 70 of 196 countries worldwide (36%) have established legally binding limits on lead in paint.
<b>Key Finding #2</b>	Among the countries with legally binding limits on lead in paint, there is a range of approaches to regulating the lead content and use of lead paint.
<b>Key Finding #3</b>	While most lead paint controls regulate the manufacture, export, import, and sale of lead paint, the laws in several countries are not comprehensive and still allow lead paint to be manufactured, exported, imported or sold.
<b>Key Finding #4</b>	A detailed analysis found that 53 of the countries assessed establish labeling requirements, while only 17 countries require that paint be tested and certified for lead content.
<b>Key Finding #5</b>	Most of the 68 countries with lead paint controls reassessed for this report have established enforcement provisions to ensure compliance with their lead limits.

## II. METHODOLOGY

In order to provide an updated overview on the establishment of legally binding controls on lead paint, WRI reviewed the 2015 SAICM survey results and conducted additional analysis on the laws in 128 countries determined by UNEP. This evaluation provides a more in-depth examination of the range of regulatory approaches used in lead paint controls.

To determine which of the 128 countries have enacted lead paint controls, WRI commissioned lawyers, non-government organizations (NGOs), and environmental research organizations from Asia, Africa, Europe and Latin America.<sup>22</sup> In-house lawyers at WRI also conducted legal research for 40 of the 128 countries assessed. When researching and analyzing whether countries have enacted lead paint controls, researchers first used the 2015 SAICM report and then

conducted separate legal analyses and gathered additional information.

To determine whether a country had established lead paint controls, legal researchers reviewed online databases<sup>23</sup> and government websites, including the websites of government ministries and standards bureaus, to locate lead paint controls. Additionally, researchers contacted government authorities and local NGOs with relevant expertise to

ascertain whether lead paint controls had been enacted in their countries. The research was conducted over a three-month period (November 2015 to January 2016). For countries with lead paint controls, researchers conducted legal analyses of the procedural and substantive aspects of the legal controls by answering a set of 29 legal indicators. (For the full list of legal indicators, see Table 18). The indicators were developed based on key research questions prepared by UNEP to update the 2015 SAICM report. WRI then developed research guidance and methods documents to assist in the interpretation of each question by researchers.

Using the findings from the legal indicators and the 2015 SAICM report results, WRI compiled a set of tables and figures to comparatively analyze the findings across countries, regions, and income levels. While the legal research process was comprehensive, there are a few caveats and limitations to the research conducted, which are summarized in Table 5.

**Table 5 | Caveats and Research Limitations<sup>iii</sup>**

- This report does not examine whether laws are implemented or enforced in the countries assessed.
- This report was not designed to prove that enacting strong lead paint controls is sufficient to eliminate lead in paint.
- This report has not been examined or vetted by the governments in the countries assessed.
- This report examines national-level lead paint controls. (Voluntary, regional, and sub-national instruments are noted, but not factored into the analysis.)
- Researchers were selected based on their expertise on legal frameworks within a particular region or country, but their research was not peer-reviewed by other in-country researchers with relevant expertise.
- The indicators ask yes or no questions about legal provisions. In some cases, the binary nature of the indicator failed to fully capture the law's complexity (i.e. ambiguities in the law).
- "No lead paint control found" does not necessarily mean that no lead paint control exists in the country. Researchers made a good faith effort to locate the law using online databases, government websites, and contacting government officials. However, in countries with "no law found" there could still be a lead paint control enacted, which researchers were unable to locate.

<sup>iii</sup> In addition, due to translation and other issues, our researcher was unable to determine whether Jordan's law regulates use of paint with lead. More research on Jordan is needed.

### III. A GLOBAL OVERVIEW OF COUNTRIES WITH LEGALLY BINDING LIMITS ON LEAD IN PAINT

This section provides a global overview of findings on countries that have established lead paint controls. When aggregating the findings from both the WRI analysis and the 2015 SAICM report, a total of 70 out of 196 countries worldwide were found to have legally binding lead paint limits. These findings will be discussed further in this section. This number suggests there is still a significant gap to be filled to achieve the 2020 goal that all countries will have legally binding lead paint restrictions.

**Key Finding #1:**  
As of early 2016, seventy (70) of 196 countries worldwide (36%) have established legally binding limits on lead in paint.

Among the countries assessed, there is wide variation in terms of the characteristics of these lead paint controls. Some countries establish numerical limits on the total lead concentration (in parts per million (ppm)), while other countries limit the soluble lead concentration in paint.

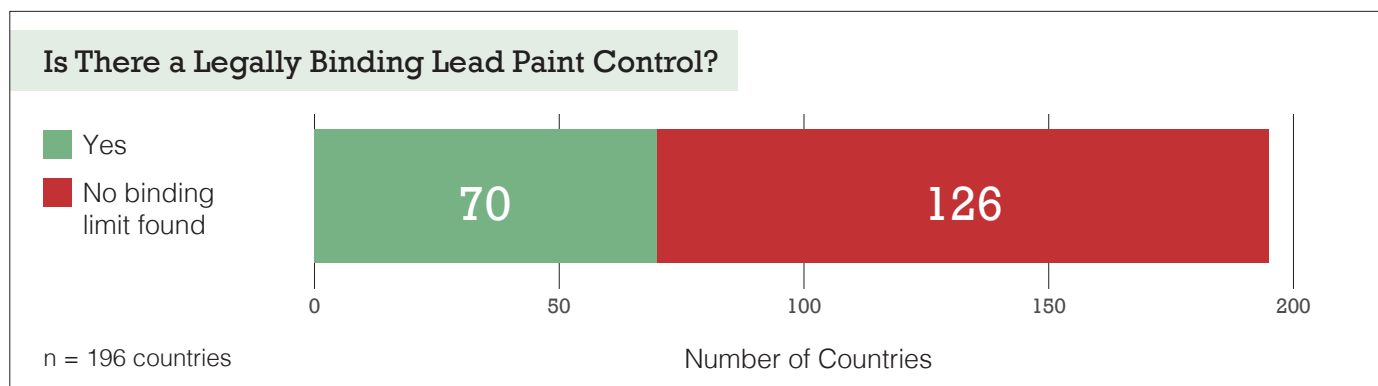
European countries that adopt the EU REACH regulation restrict the use and sale of certain specific lead compounds for use in paints. Disaggregating overall findings on lead paint controls by region and income level shows that there is some correlation between the existence of lead paint controls and both regions and income levels. In several of the countries assessed, there are voluntary limits on lead in paint which are not legally enforceable but still noteworthy. Lastly, several countries are currently in the process of establishing lead paint controls. These findings will be discussed further in this section. Figure 1 below provides an

overview of the number of countries with legally binding lead paint controls. Map #1 shows those countries that have legally binding restrictions in place and those for which no specific limit could be found. The map also provides information on those countries that have voluntary standards.

Merging the results from both the 2015 SAICM report and WRI's analysis, the 126 countries with no legal paint controls include 46 countries where the SAICM report confirmed countries had no laws and 18 countries where controls are in process of developing laws. Countries without legal paint controls also included 20 countries with voluntary controls. Countries with voluntary controls are discussed in detail below. The countries in process of developing legal control as well as those with voluntary controls are also noted on Map #1. Based on merged results no legally binding limits were found for 126 countries.<sup>iv</sup> This list of countries is provided in Table 6.

<sup>iv</sup>Included among the 126 (red) countries with no binding limit are several countries (India, Guyana, and several Caribbean countries) which have adopted voluntary lead paint limits (see Table 9). In countries with voluntary limits, governments are not legally obligated to enforce them.

**Figure 1 | Global Number of Countries with Binding Lead Paint Controls**



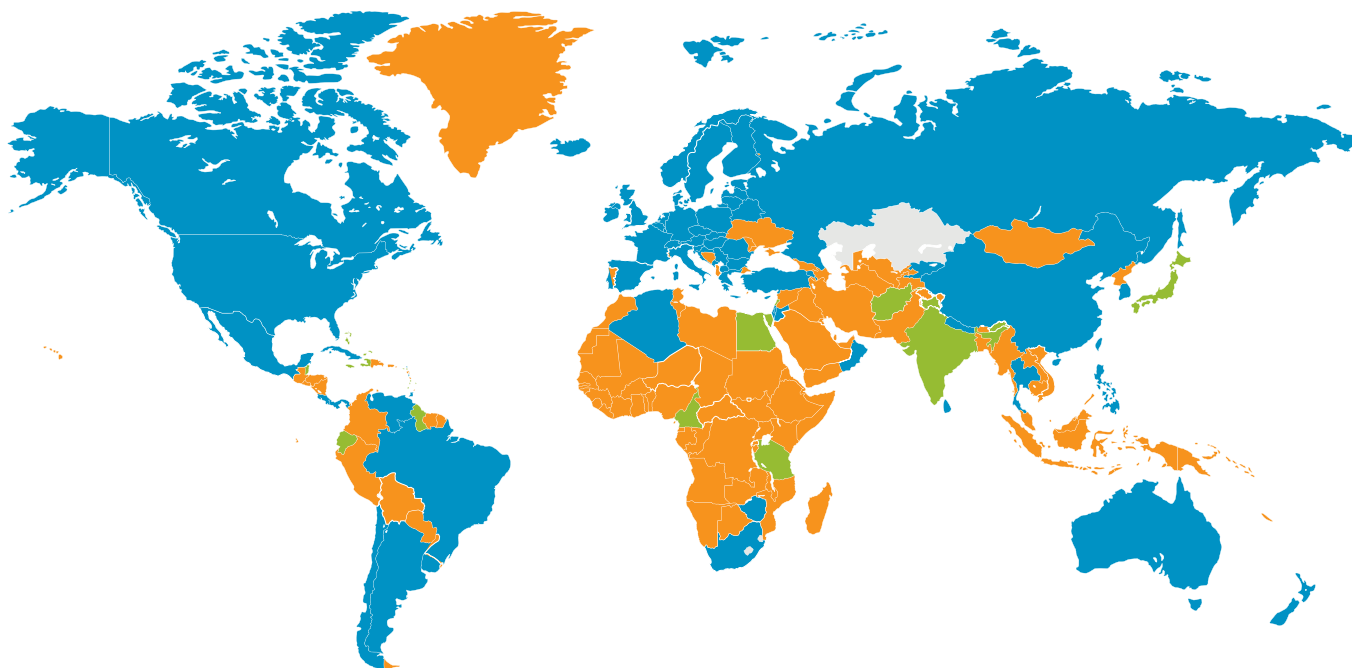
<sup>i</sup>Fig. 1 aggregates the findings from this report and the 2015 SAICM report (and so includes Italy and Cuba as having lead paint controls.)

**Table 6 | Countries For Which No Binding Legal Limit on Lead in Paint Was Found**

In these 126 countries, no lead paint control was found:				
Africa	Latin America and the Caribbean	Europe	Asia and the Pacific	Western Asia
Angola	Bahamas	Albania	Afghanistan	Iraq
Benin	Barbados	Andorra	Bangladesh	Kuwait
Botswana	Belize	Azerbaijan	Bhutan	Lebanon
Burkina Faso	Bolivia	Bosnia and Herzegovina	Brunei Darussalam	Saudi Arabia
Burundi	Colombia	Georgia	Cambodia	Qatar
Cameroon	Dominican Republic	Greenland	Cook Islands	Syrian Arab Republic
Cape Verde	Ecuador	Kazakhstan	Democratic People's Republic of Korea	United Arab Emirates
Central African Republic	El Salvador	Republic of Moldova	India	Yemen
Chad	Grenada	San Marino	Indonesia	
Comoros	Guatemala	Tajikistan	Iran	
Congo	Guyana*	Turkmenistan	Japan	
Côte D'Ivoire	Haiti	Ukraine	Kiribati	
Democratic Republic of the Congo	Honduras	Uzbekistan	Lao People's Democratic Republic	
Djibouti	Jamaica		Malaysia	
Egypt	Nicaragua		Maldives	
Equatorial Guinea	Paraguay		Marshall Islands	
Eritrea	Peru		Micronesia	
Ethiopia	Saint Lucia		Mongolia	
Gabon	St. Kitts and Nevis		Myanmar	
Gambia	St. Vincent and Grenadines		Nauru	
Ghana	Suriname		Niue	
Guinea			Pakistan	
Guinea Bissau			Palau	
Kenya			Papua New Guinea	
Lesotho			Samoa	
Liberia			Singapore	
Libya			Solomon Islands	
Madagascar			Timor-Leste	
Malawi			Tonga	
Mali			Tuvalu	
Mauritania			Vanuatu	
Mauritius			Viet Nam	
Morocco				
Mozambique				
Namibia				
Niger				
Nigeria				
Rwanda				
Sao Tome and Principe				
Senegal				
Seychelles				
Sierra Leone				
Somalia				
South Sudan				
Sudan				
Swaziland				
Tanzania				
Togo				
Tunisia				
Uganda				
Zambia				

\*The 2015 SAICM report shows that Guyana and Cuba have lead paint control. For this report, however, researchers were unable to locate the Cuban law or regulation. For Guyana, researchers commissioned for this report concluded that the Guyana lead paint limit is actually voluntary rather than legally binding. For this reason, Guyana is also listed as "no lead paint control found."

## Map of Lead Paint Limits (Binding limits vs. Voluntary limits vs. No Limits Found)



Binding					Voluntary	
Algeria	Croatia	Israel	Nepal	South Africa	Afghanistan*	Montserrat**
Antigua and Barbuda	Cuba	Italy	Netherlands	Spain	Andorra	St. Lucia**
Argentina	Cyprus	Jordan	New Zealand	Sri Lanka	Bahamas**	St. Kitts and Nevis**
Armenia	Czech Republic	Kyrgyz Republic	Norway	Sweden	Barbados**	St. Vincent and the Grenadines**
Australia	Denmark	Latvia	Oman	Switzerland	Belize**	Tanzania
Austria	Dominica	Liechtenstein	Panama	Thailand	Cameroon	
Belarus	Estonia	Lithuania	Philippines	Trinidad and Tobago	Ecuador*	
Belgium	Fiji	Luxembourg	Poland	Turkey	Egypt	
Brazil	Finland	The former Yugoslav Republic of Macedonia	Portugal	United Kingdom	Grenada**	
Bulgaria	France	Malta	Republic of Korea	Uruguay	Guyana**	
Canada	Germany	Mexico	Romania	United States of America	Haiti**	
Chile	Greece	Monaco	Russia	Venezuela	India***	
China	Hungary	Montenegro	Serbia	Zimbabwe	Jamaica**	
Costa Rica	Iceland		Slovakia		Japan	
	Ireland		Slovenia		Lebanon	

No Limit Found						
Albania*	Central African Republic	Equatorial Guinea	Kuwait	Morocco	Republic of Moldova*	Syrian Arab Republic*
Angola	Chad	Eritrea	Lao People's Democratic Republic*	Mozambique	Samoa	Tajikistan
Azerbaijan	Colombia*	Ethiopia	Lesotho	Myanmar	San Marino	Timor-Leste
Bahrain	Comoros	Gabon*	Liberia	Namibia	Sao Tome and Principe	Togo
Bangladesh*	Congo	Gambia	Libya	Nauru	Saudi Arabia	Tonga
Benin	Cook Islands	Georgia	Madagascar	Nicaragua	Senegal	Tunisia
Bhutan	Côte d'Ivoire	Ghana	Malawi	Niger	Seychelles	Turkmenistan
Bolivia	Democratic People's Republic of Korea	Greenland	Malaysia	Nigeria	Sierra Leone	Tuvalu
Bosnia and Herzegovina*	Guatemala	Guinea	Maldives	Niue	Singapore	Uganda*
Botswana	Guinea Bissau	Honduras*	Mali	Pakistan	Solomon Islands	Ukraine
Brunei Darussalam	Indonesia	Iraq	Marshall Islands	Palau	Somalia	United Arab Emirates*
Burkina Faso	Iran	Kenya	Mauritania	Papua New Guinea	South Sudan	Uzbekistan
Burundi	Islamic Republic of the Congo	Kiribati	Mauritius*	Paraguay*	Sudan	Vanuatu
Cambodia			Micronesia	Peru	Suriname	Vietnam
Cape Verde			Mongolia	Qatar	Swaziland*	Yemen*
				Rwanda		Zambia

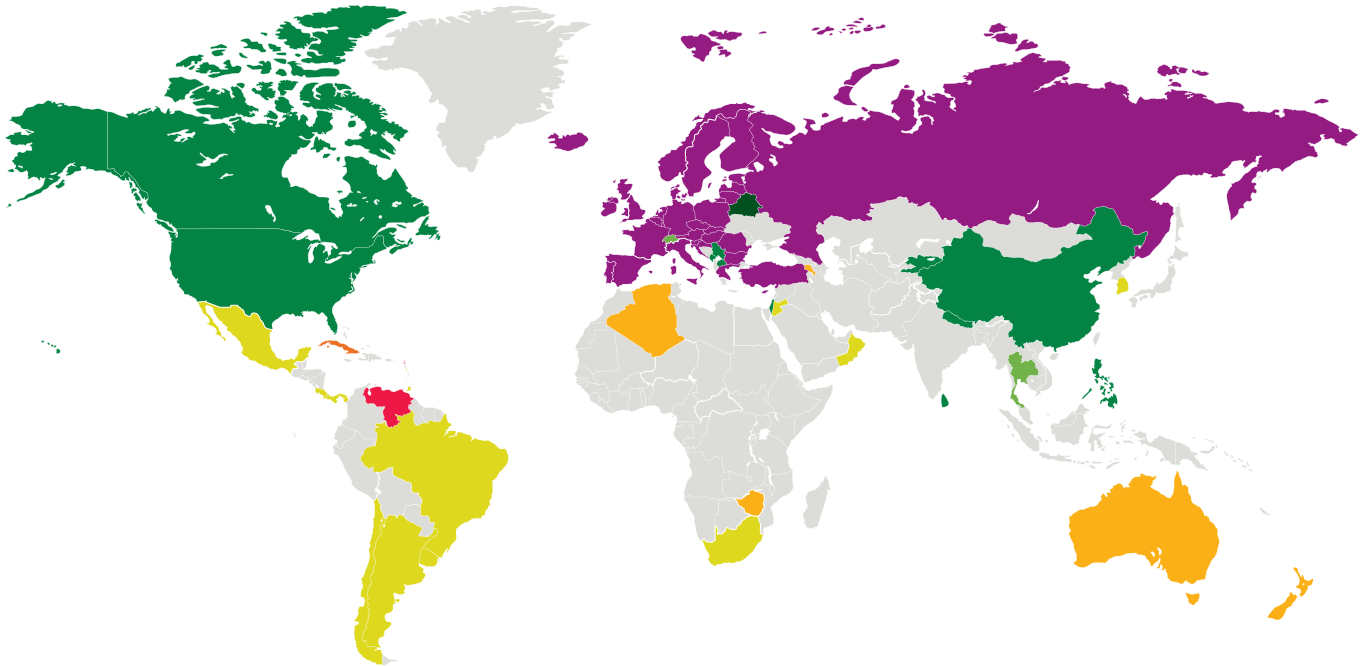
\* in process of passing binding limit

\*\* CARICOM voluntary standard

\*\*\* IS 133- Voluntary Standard

- no data

## Map of Binding Lead Paint Limits



Countries with Numerical Lead Paint Limits (in parts per million (ppm))

50 ppm	90 ppm	100 ppm	600 ppm	1000 ppm	20,000 ppm	
Belarus	Canada China* Israel Kyrgyz Republic. The former Yugoslav Republic of Macedonia Montenegro Nepal Philippines Serbia Sri Lanka* USA	Switzerland Thailand	Argentina Brazil Chile Costa Rica Dominica Jordan Mexico Oman Panama	South Africa Republic of Korea Trinidad and Tobago Uruguay	Algeria Armenia Australia New Zealand Zimbabwe	Cuba

Workplace Restrictions only (no ppm limit):	General restrictions on sale and use of lead paint (no ppm limit):				
Antigua and Barbuda* Venezuela Fiji	Austria** Belgium** Bulgaria** Croatia** Cyprus** Czech Republic** Denmark**	Estonia** Finland** France** Germany** Greece** Hungary** Iceland**	Italy** Ireland** Latvia** Liechtenstein** Lithuania** Luxembourg** Malta**	Monaco** Netherlands** Norway** Poland** Portugal** Romania** Russia	Slovakia** Slovenia** Spain** Sweden** Turkey UK**

\*limit applies to soluble lead content only    \*\*EU reach applies

no data



**a. Specific Limits on the Total Lead Concentration (in parts per million (ppm))**

There is no “safe” level of lead exposure.<sup>24</sup> A significant number of countries utilize numerical based limits or restrictions in their lead paint control laws and regulations. Map #2 provides a global overview of the countries that use specific numerical limits or restrictions.

Thirty-three (33) of the 68 countries reassessed have established limits for the concentration of lead in paint. Table 7 shows the range of these concentration limits in parts per million (ppm), which is a standard unit of measurement for concentration.<sup>v</sup> If the level of lead in paint exceeds the concentration limit, then the paint violates the law. This table does not show the 35 countries that have restrictions on specific lead compounds in paint, rather than using a lead concentration limit. It also should be noted that Dominica and Trinidad and Tobago also are part of Caribbean Community Standard Specification for the Limit on Lead Content in Paint voluntary standard that establishes a lead limit for the maximum lead content of paints or varnishes at 0.06% (600 ppm) by weight, calculated on the basis of the total solids (non-volatile) content.

Additionally, thirty-four (34) countries (32 EU REACH countries, as well as Turkey, and Russia) established compound specific restrictions<sup>vi</sup> on lead paint. EU REACH does not impose lead

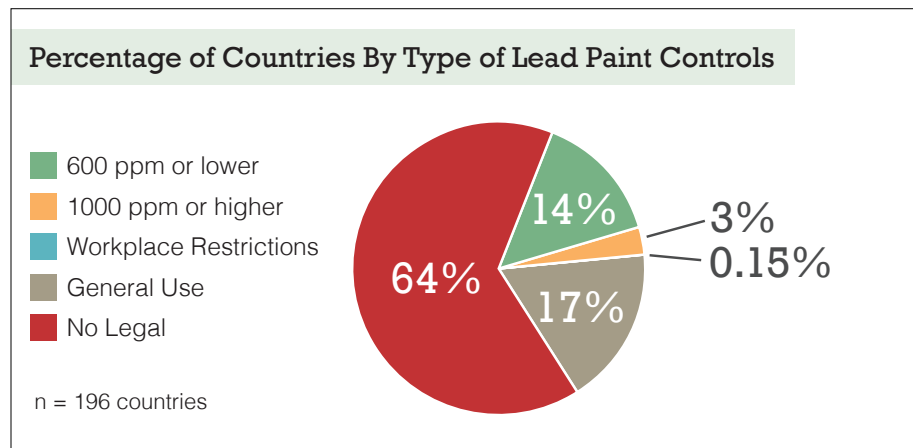
<sup>v</sup> Some laws limit the amount of lead in terms of concentration, which can be expressed in terms of (%) weight or in terms of milligram per kilogram (mg/kg), which can also be expressed as parts per million or ppm.

<sup>vi</sup> The EU REACH Regulation, which applies to 32 of the countries assessed, does not provide a definition of lead paint but instead restricts the use of certain lead compounds. Annex XVII, entries 16 and 17, only provides that “lead carbonates and sulfates shall not be placed on the market, or used, as substances or in mixtures, when the substance or mixture is intended to be used in paint.” However, there is no concentration limit on the amount of lead contained in the paint. Turkey and Russia also establish general restrictions, but no lead concentration limit.

**Table 7 | Countries with Limits on the Total Lead Concentration (in parts per million (ppm))**

Countries with Limits on the Total Lead Concentration (in parts per million (ppm)) (S)= limit on soluble lead content (See Table 10 for more information)				
50 ppm	90 ppm	100 ppm	600 ppm	1000 ppm or higher
Belarus <sup>25</sup>	Canada <sup>26</sup> China <sup>27</sup> (s) Israel <sup>28</sup> Kyrgyz Rep. <sup>29</sup> The former Yugoslav Republic of Macedonia <sup>30</sup> Montenegro <sup>31</sup> Nepal <sup>32</sup> Philippines <sup>33</sup> Serbia <sup>34</sup> Sri Lanka <sup>35</sup> (s) USA <sup>36</sup>	Switzerland <sup>37</sup> Thailand <sup>38</sup>	Argentina <sup>39</sup> Brazil <sup>40</sup> Chile <sup>41</sup> Costa Rica <sup>42</sup> Dominica <sup>43</sup> Jordan <sup>44</sup> Mexico <sup>45</sup> Oman <sup>46</sup> Panama <sup>47</sup> South Africa <sup>48</sup> Republic of Korea <sup>49</sup> Uruguay <sup>50</sup> Trinidad and Tobago <sup>51</sup>	Algeria <sup>52</sup> Australia <sup>53</sup> Armenia <sup>54</sup> Cuba <sup>55</sup> New Zealand <sup>56</sup> Zimbabwe <sup>57</sup>

**Figure 2 | Percentage of Countries By Type of Lead Paint Controls**



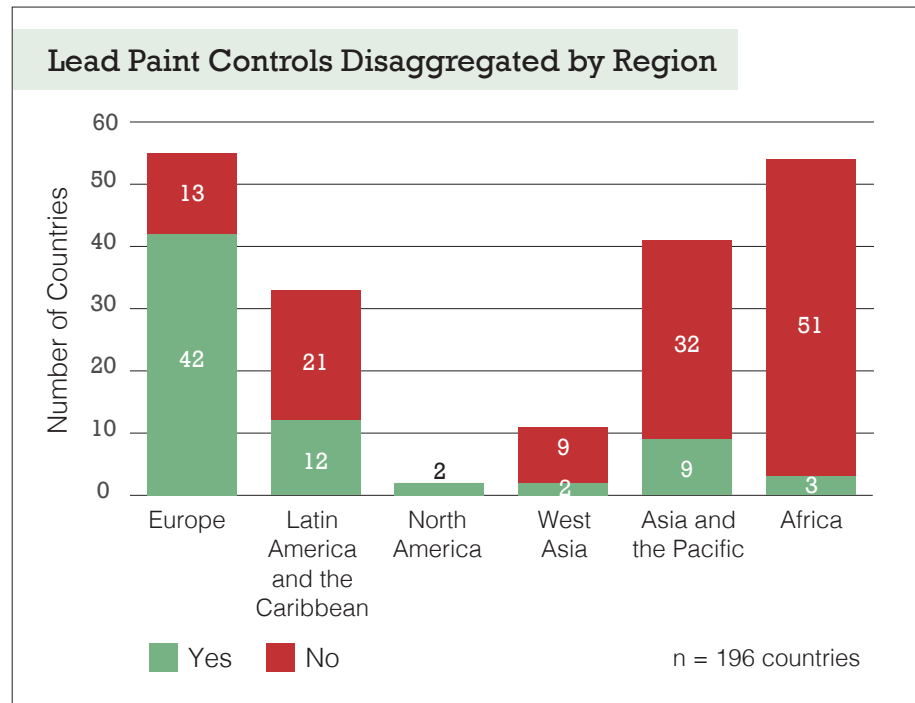
concentration limits (in terms of ppm, percentage weight, etc.), but instead restricts the use, sale, and addition into paint of lead compounds. Antigua and Barbuda, Venezuela, and Fiji only establish workplace restrictions on lead paint, but no numerical limit. Fiji’s law, for example, prohibits the use of lead spray paint in the buildings and ships used for workplace/industrial purposes, but does not establish a lead concentration limit or impose other restrictions.<sup>58</sup> In addition a few countries without comprehensive

lead paint controls do include numerical restrictions for labeling or coating on toys. According to the 2015 SAICM report, Albania, Singapore, and Saint Lucia, for example have label requirements that include specific ppm limits while Malaysia Japan, and Peru have ppm limits for toys. The pie chart in Figure 2 breaks down the findings on lead paint controls by percentages.

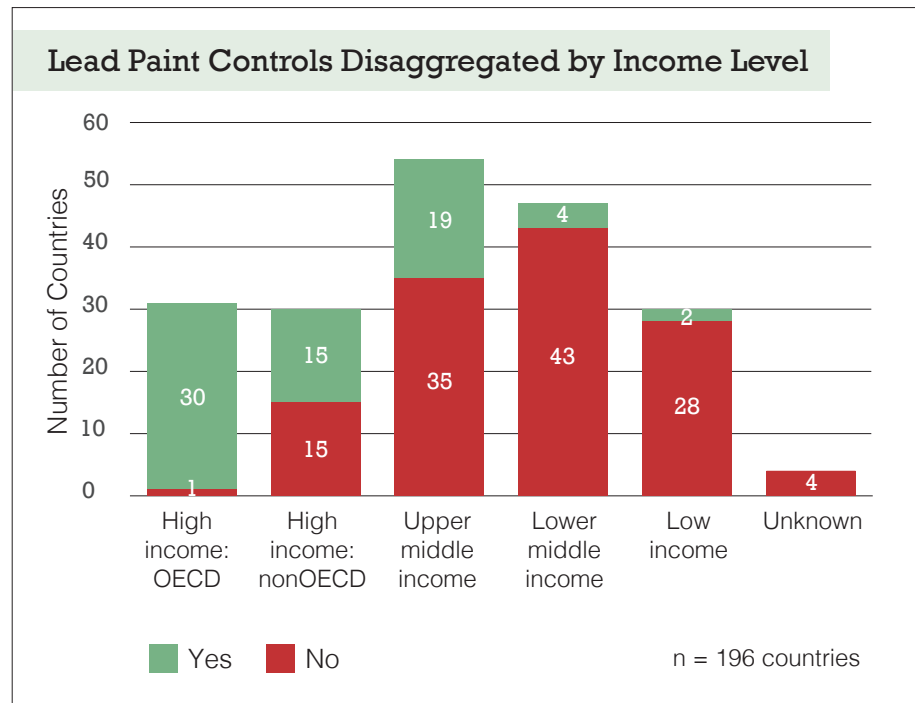
Further insight can be gained when disaggregating lead paint controls by region. This analysis shows that Europe and North America have relatively higher proportions of countries with lead paint controls when compared to other regions in the world. In Europe, almost all of the countries assessed follow the regional EU REACH regulation, which suggests that regional measures for eliminating lead paint can be an effective approach for ensuring that more countries enact lead paint controls. Latin America has shown progress in establishing bans on lead in paint, though the 2015 SAICM report showed that lead paint laws are in progress but not final in several countries (e.g., Colombia). All of the Caribbean countries assessed follow the CARICOM voluntary standard, which sets a 600 ppm limit on lead paint (see Table 9 on voluntary standards). On the other hand, many countries in the regions of Western Asia, Asia and the Pacific, and Africa still have not established lead paint controls.<sup>vii</sup> An overview of lead paint controls by region is provided in Figure 3.

Figure 4 presents lead paint controls by income level. When disaggregating the data by income, there is some correlation between high income levels and the presence of a lead paint control among the countries assessed. The income levels of the countries assessed were taken from the World Bank.<sup>59</sup> “OECD” countries are countries that are members of the Organization for Economic Co-operation and Development.<sup>60</sup> Disaggregating the data by income demonstrates the need to support low and middle income countries in establishing lead paint controls, since lower and middle-income countries were mostly where no binding limits were found.

**Figure 3 | Lead Paint Controls Disaggregated by Region**



**Figure 4 | Lead Paint Controls Disaggregated by Income Level**



<sup>vii</sup>See table 21 for a list of countries reassessed by WRI with lead paint controls disaggregated by region.

Tables 8(a)-(f) present a snapshot of country-specific information on lead paint controls including voluntary measures intended to illustrate key features. The countries included in this table represent a subset of the countries assessed.

**Table 8(a) | Country-Specific Narratives: Asia and the Pacific**

<b>Country-Specific Narratives: Asia and the Pacific</b>	
<b>Countries</b>	<b>Features of the Lead Paint Controls</b>
<b>China</b>	<ul style="list-style-type: none"> <li>Recent regulations ban lead paint in toys intended for domestic sale and use (90 ppm limit). These regulations became effective Jan. 1, 2016.</li> <li>The Product Quality Law establishes provisions for injunctive relief, civil penalties, and criminal penalties. <ul style="list-style-type: none"> <li>Regulates the manufacture, sale, and import.</li> <li>Sets soluble lead paint limit.</li> <li>The law does not explicitly regulate imports or exports of toys with lead-containing paint.</li> </ul> </li> </ul>
<b>Nepal</b>	<ul style="list-style-type: none"> <li>90 ppm limit applies to all paints produced and imported in Nepal. <ul style="list-style-type: none"> <li>Contains a labeling requirement.</li> <li>Does not regulate the export or sale of lead in paint.</li> <li>Does not include paint testing or certification requirements.</li> </ul> </li> </ul>
<b>Philippines</b>	<ul style="list-style-type: none"> <li>The Chemical Control Order (CCO) sets a 90 ppm for both domestic and industrial uses. <ul style="list-style-type: none"> <li>Regulates the use, manufacture, import, export, transport, process, storage possession and wholesale of lead in paint.</li> <li>Contains clearly defined enforcement mechanisms, including criminal sanctions, civil penalties, and injunctive relief.</li> <li>Contains labeling requirements.</li> </ul> </li> </ul>
<b>Republic of Korea</b>	<ul style="list-style-type: none"> <li>Regulation bans the use of lead paint in toys (establishes a 600 ppm limit).</li> <li>The laws apply to manufacture, import, sale, keeping, storage, transportation and use of toys.</li> <li>Exporters must obtain approval from Ministry of the Environment annually.</li> <li>The law includes paint certification requirements.</li> <li>The Minister of environment can issue injunctive relief and impose civil/criminal penalties on violators.</li> <li>The law only applies to accessories designed for children 13 years or younger.</li> <li>The law does not establish labeling requirements.</li> </ul>
<b>Sri Lanka</b>	<ul style="list-style-type: none"> <li>90 ppm limit applies to emulsion paints, floor paints, and paints for toys (600 ppm limit applies to enamel paints). The lead paint controls only applies to soluble lead content.</li> <li>All manufacturers and traders are required to label lead contents in paint (in mg/kg) containers.</li> <li>The law does not explicitly impose injunctive relief or criminal sanctions on violators.</li> </ul>
<b>Australia</b>	<ul style="list-style-type: none"> <li>The lead paint control limits the total lead content to 1000 ppm.</li> <li>The enforcement authority is empowered to suspend the listing of goods that pose a human health risk (including products with lead paint).</li> <li>The law regulates sale, manufacturing, exporting, and importing of lead paint.</li> <li>The law contains a ban on lead additives.</li> <li>The law contains a labeling requirement. The following labels must be put on lead-containing products- label to be placed on paints containing lead: "This paint contains lead and is dangerous to health, even when dry"; "For industrial use only"; "Do not use on any toys or furniture"; "Do not use for painting any building or fixed structure"; "Do not use where contact with food or drinking water is possible"</li> <li>The law does not include any paint testing or certification requirements.</li> </ul>
<b>New Zealand</b>	<ul style="list-style-type: none"> <li>The law regulates sale, manufacture, export, and import of lead paint.</li> <li>The law contains a labeling requirement.</li> <li>The law provides enforcement provisions, including injunctive relief, civil penalties, and criminal sanctions to ensure compliance.</li> <li>The law does not include any paint testing or certification requirements.</li> </ul>
<b>Fiji</b>	<ul style="list-style-type: none"> <li>The law provides enforcement provisions, including injunctive relief, civil penalties, and criminal sanctions to ensure compliance.</li> <li>The only lead paint control established in Fiji is a restriction on the use of lead-containing spray paint in the interior paintings of buildings, or ships (workplace restrictions).</li> <li>There are no paint test/certification requirements or labeling requirements.</li> <li>The law does not regulate the export, import, or manufacture of lead paint.</li> </ul>

**Table 8(b) | Country-Specific Narratives: Latin America and the Caribbean**

Country-Specific Narratives: Latin America and the Caribbean	
Countries	Features of the Lead Paint Controls
<b>Panama</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to the total lead concentration.</li> <li>• The law regulates the manufacture, import, sale, and use of lead paint.</li> <li>• The law includes labeling and paint test/certification requirements.</li> <li>• The law does not contain enforcement provisions, such as injunctive relief, civil penalties, and criminal sanctions.</li> <li>• The law does not regulate exports of products with lead paint.</li> </ul>
<b>Uruguay</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to architectural paints (decorative or household use), child watercolor paints, graphical inks and master batches.</li> <li>• The Ministry of Housing, Land Planning and Environment can impose criminal sanctions and fines.</li> <li>• The law contains labeling requirements.</li> <li>• The law does not regulate the export of products with lead paint.</li> <li>• The law does not impose a ban on lead additives.</li> <li>• Exemptions include paint for agriculture and industrial equipment.</li> </ul>
<b>Brazil</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to the total lead concentration.</li> <li>• The law regulates the manufacture, import, export, and use of lead paint.</li> <li>• If a manufacturer fails to comply with the legal limit, then the government may impose criminal and civil penalties. Penalties include notification, seizure of the product, and a fine equivalent to the seized goods.</li> <li>• The law contains paint test/certification requirements.</li> <li>• The law does not contain any labeling requirements.</li> <li>• There are several exempted uses including “paints and similar materials for artistic exclusive use” — some of these exemptions are broadly or vaguely worded.</li> </ul>
<b>Chile</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to the total concentration of lead.</li> <li>• The law regulates the import, export, and sale of lead paint.</li> <li>• The law contains paint test and certification requirement.</li> <li>• The law contains a list of exemptions, including “agricultural and industrial equipment.”</li> </ul>
<b>Costa Rica</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to children’s toys, furniture, and school supplies.</li> <li>• The law regulates the manufacturing, import, export, and sale of lead paint.</li> <li>• The law contains labeling and paint test/certification requirements.</li> <li>• The law contains provisions to ensure compliance with the LPC, including injunctive relief, civil penalties, and criminal sanctions.</li> <li>• The law does not impose a ban on lead additives.</li> </ul>
<b>Trinidad and Tobago</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to the total lead concentration to 600 ppm.</li> <li>• The law regulates the export, import, and manufacture of lead paint.</li> <li>• The law does not establish a labeling requirement.</li> <li>• The Bureau of Standards has the power to enter premises and inspect, seize and detain goods.</li> </ul>
<b>Dominica</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to the total lead concentration to 600 ppm.</li> <li>• The limit applies to paints and varnishes that are used in households, on domestic furniture and appliances, in buildings and places open to the public, shops, offices, factories, or for commercial purposes.</li> <li>• The standard does not apply to dried powders for industrial use.</li> </ul>

**Table 8(c) | Country-Specific Narratives: Africa**

Country-Specific Narratives: Africa	
Country	Features of the Lead Paint Controls
<b>South Africa</b>	<ul style="list-style-type: none"> <li>• The 600 ppm limit applies to the total lead concentration.</li> <li>• The law applies to manufacture, import, and sale of lead paint.</li> <li>• The law provides enforcement provisions, including injunctive relief, civil penalties, and criminal sanctions to ensure compliance.</li> <li>• The law does not impose any paint test and certification requirements.</li> <li>• The law does not contain a total ban on lead additives.</li> <li>• The law contains a list of use exemptions, and some of these exemptions are vaguely worded.</li> </ul>
<b>Zimbabwe</b>	<ul style="list-style-type: none"> <li>• The 10,000 ppm limit applies to the total lead concentration.</li> <li>• The law regulates sale, manufacture, export, and import of lead paint.</li> <li>• The law contains a labeling requirement—must put a label on product stating “DANGEROUS POISON, KEEP OUT OF REACH OF CHILDREN.”</li> <li>• The law does not impose any paint test or certification requirements.</li> <li>• The law does not contain a total ban on lead additives.</li> </ul>

**Table 8(d) | Country-Specific Narratives: North America**

Country-Specific Narratives: North America	
Countries	Features of the Lead Paint Controls
<b>USA</b>	<ul style="list-style-type: none"> <li>• The 90 ppm limit applies to the total lead concentration of lead in paint.</li> <li>• The law provides enforcement provisions, such as injunctive relief, civil penalties, and criminal sanctions.</li> <li>• The law regulates the manufacture, sale, export, and import of lead paint.</li> <li>• The law applies to paint for consumer use, toys and other articles intended for use by children that bear lead containing paint, and furniture articles for consumer use that bear lead containing paint.</li> <li>• The law does not contain a ban on lead additives.</li> </ul>
<b>Canada</b>	<ul style="list-style-type: none"> <li>• The 90 ppm limit applies to the total lead concentration in paint.</li> <li>• The law applies to furniture and items used by children.</li> <li>• The law regulates the manufacture, sale, export and import of lead paint.</li> <li>• The law includes enforcement provisions, such as injunctive relief and criminal sanctions.</li> <li>• The law includes a labeling requirement which must be written in French and English.</li> <li>• The law does not have any explicit restrictions on the export of lead paint.</li> <li>• The law does not contain a ban on lead additives.</li> <li>• The law includes a list of exempted uses, including agricultural, anti-weathering coatings, and other uses. For these uses, the ppm limit can exceed 90 ppm as long as the product is labeled as containing lead.</li> <li>• The law does not impose any paint test and certification requirements.</li> </ul>

**Table 8(e) | Country-Specific Narratives: Europe**

Country-Specific Narratives: Europe	
Countries	Features of the Lead Paint Controls
<b>EU REACH countries</b>	<ul style="list-style-type: none"> <li>• See Table 19(a) for description of EU REACH.</li> </ul>
<b>Russia</b>	<ul style="list-style-type: none"> <li>• There is no specific lead concentration limit established in Russia.</li> <li>• It is forbidden to use the following chemicals in paint and varnish materials in “construction for interior works”: lead, chromium, cadmium and their compounds.</li> <li>• Civil penalties and injunctive reliefs are provided by law.</li> </ul>
<b>Belarus</b>	<ul style="list-style-type: none"> <li>• According to Rules for Safety on Painting Works, contents of lead pigments in the paint must not exceed 0.005 mg / m<sup>3</sup> (in cases where the technological requirements coatings to be used contain a high content of lead compounds, their use is allowed in conditions of detention in the air working area with colorful dust no more than 0.5 mg / m<sup>3</sup>).</li> <li>• According to the uniform sanitary requirements, paints used for buildings lived in or used by people must not contain driers containing metals or chemicals belonging to hazard class 1 in quantities greater than 0.5% (5,000 ppm).</li> <li>• All paints are subject to compulsory state registration and testing.</li> <li>• There are also workplace restrictions: women and persons under the age of 18 cannot work in areas exposed to white lead (lead sulfates).</li> </ul>
<b>Switzerland</b>	<ul style="list-style-type: none"> <li>• It is prohibited for manufacturers to place on the market lead paints and varnishes containing 0.01% (100 ppm) or more lead content and articles treated with such paint and varnishes.</li> <li>• The law also prohibits the manufacturer from placing on the market packaging or packaging components with a lead content above 0.01% (100 ppm).</li> <li>• The law regulates the import, export, manufacture, and sale of lead paint</li> <li>• The law provides injunctive relief and criminal sanction for non-compliance.</li> </ul>

**Table 8(f) | Country-Specific Narratives: Western Asia**

Country-Specific Narratives: Western Asia	
Countries	Features of the Lead Paint Controls
<b>Israel</b>	<ul style="list-style-type: none"> <li>• The law limits the total concentration of lead in paint to 90 ppm. This limit applies to toys.</li> <li>• The law regulates the export, import, sale and manufacture of lead paint.</li> <li>• The law includes the following exemption: toys and parts of toys which, due to their accessibility, function, mass, size or other characteristics obviously exclude any hazard due to sucking, licking or swallowing bearing in mind the normal foreseeable behavior of children.</li> <li>• The law includes a paint testing/certification requirement.</li> <li>• The law includes a labeling requirement.</li> </ul>
<b>Jordan</b>	<ul style="list-style-type: none"> <li>• The law limits the total lead concentration to 600 ppm.</li> <li>• The law regulates the import and sale of lead paint.</li> </ul>
<b>Oman</b>	<ul style="list-style-type: none"> <li>• The law limits the total lead concentration to 600 ppm.</li> <li>• The law provides that “handing, use, import, or production of paints, and oil-based and water-based varnishes whose content of lead exceeds 0.06% (600 ppm) of the total weight is prohibited.”</li> </ul>

## b. Voluntary Standards

A total of 20 of the 196 countries assessed by WRI and the SAICM report have currently adopted voluntary limits on lead paint. In these countries, the lead paint limits are not legally enforceable. However, voluntary standards are still noteworthy considering they may be followed in practice or may in the future form the basis of binding legal limits. A summary of the countries with voluntary standards is presented in Table 9. It has also been included in Map #1.

**Table 9 | Countries with Voluntary Standards**

Voluntary Standards	
Countries	Voluntary Standards
<b>Afghanistan</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>Afghanistan encourages import of lead-free paint and at the moment, around 35-40% of imported paint is lead-free. The development of standards for lead paint is in process.</li> </ul>
<b>Andorra</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>The government promotes voluntary regulation and gives priority to plastic paint (water-based) versus synthetic paints and varnishes (organic solvent-based enamels).</li> </ul>
<b>Cameroon</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>The largest paint company has voluntarily reformulated its decorative and architectural paints; the paints marketed by that company carry the label indicating that there is less than 90 ppm lead. The second largest local manufacturer has also committed to voluntarily reformulate its paints.</li> </ul>
<b>Caribbean Countries:</b> Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago	<ul style="list-style-type: none"> <li>The Caribbean Community (CARICOM)<sup>61</sup> established a voluntary standard (Caribbean Community Standard Specification for the Limit on Lead Content in Paint) that establishes a lead limit for the maximum lead content of paints or varnishes at 0.06% (600 ppm) by weight, calculated on the basis of the total solids (non-volatile) content.</li> </ul>
<b>Ecuador</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>Ecuador Technical Standards (voluntary): 0997: Paint and related products. Definitions 1015: Paints. Anticorrosion paint of red lead paint, iron oxide, linseed oil and alkyd resin. Requirements 1021: Paints. Classification 042 (5R) road marking paints. Requirements 1544: Architectural paint. Water type emulsion paints (latex) requirements.</li> <li>2094: Paints. Synthetic enamel alkyd home use. Requirements 2095: Paints. Synthetic enamel alkyd vehicle. Requirements 2123: Paints and related products. Determination of total lead by concentrated nitric acid. Method by atomic absorption spectrophotometry.</li> </ul>
<b>Egypt</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>Voluntary regulation Egyptian standard No. 386 / 2006 for Red Lead oxide (Non-binding) Egyptian standard No. 550 / 2005 for Lead chromate (Non-binding).</li> </ul>
<b>India</b>	<ul style="list-style-type: none"> <li>IS 133 (Part 1): 2013 (for Enamel, Interior: (a) undercoating (b) finishing- Specification Part 1 for Household and Decorative Purposes) states that the paint "shall not contain lead or compounds of lead or mixtures of both, calculated as metallic lead, exceeding 90 ppm for both undercoating and finishing." The voluntary standard requires precautionary labeling, including information on the maximum lead content.</li> <li>IS 2932 (part 1): 2013 for Enamel, Synthetic, Exterior: (a) undercoating (b) finishing- Specification; Part 1 for Domestic and Decorative Applications.</li> <li>IS 133 (Part 2): 2013 relates to paints used for commercial and industrial applications. The fifth revision of the standards, in 2013, introduced the limitation of lead content in such paints. These standards are voluntary. The provisions of the Bureau of Indian Standards Act, 1986 and the Act's Rules and Regulations govern this voluntary standard.</li> </ul>

Voluntary Standards	
Countries	Voluntary Standards
<b>Jamaica</b> (The CARICOM Voluntary Standard and Voluntary Standard No. JS 131-1987 both apply to Jamaica)	<ul style="list-style-type: none"> <li>• Voluntary standard: The standard specification: Standard No: JS 131: 1987 – Jamaican Standard Specification for Paint: Interior and exterior, oil modified alkyd requires labeling for paint which contains more than 0.5% (5000 ppm) lead. The label must include the precautionary warning:</li> <li>• The standard specification: Standard No: JS 131: 1987 – Jamaican Standard Specification for Paint: Interior and exterior, oil modified alkyd requires labeling for paint which contains more than 0.5% lead. The label must include the precautionary warning: CAUTION: CONTAINS LEAD Do not apply to surfaces liable to be sucked or chewed by children.</li> </ul>
<b>Japan</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>• Law applies to all lead compounds but only to coating film for toys and sets a limit of 90µg/g (90 ppm) of lead. Decorative paints are not included in the legislation. There is also a voluntary standard that anti-corrosive undercoat paint for public construction projects shall not contain lead pigments.</li> </ul>
<b>Lebanon</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>• According to the 2015 SAICM report, there are voluntary standards for paints and varnishes with no specification for lead limits.</li> </ul>
<b>St. Lucia</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>• The standards are commodity-specific, giving the requirements for moisture, spreadability, drying etc. None of the standards establish recommended limits for lead or lead compounds; however, where the paint contains more than 0.5% (5000 ppm) lead, it is recommended that precautionary warnings be included on the label: – Caution: Contains lead. Do not apply to surfaces liable to be sucked or chewed by children. SLNS 8:1992 does not provide any indicators for testing lead in paints.</li> </ul>
<b>Tanzania</b> (see 2015 SAICM Report)	<ul style="list-style-type: none"> <li>• According to the 2015 SAICM report, there is a voluntary standard that sets the limit of lead in matt emulsion paint for interior and exterior use at 0.045% (m/m) standard(600 ppm).</li> </ul>

### c. Countries in the Process of Passing Lead Paint Controls

As discussed in the Introduction, the 2015 SAICM report found that 19 countries<sup>viii</sup> were in the process of passing lead paint controls, but none of these countries were included among the 128 countries assessed for this report. For this reason, a comprehensive update on the progress in these countries is not provided here. Of the 60 countries without lead paint controls reassessed by WRI in this report, researchers found that Bangladesh, India, and Antigua and Barbuda are in the process of developing binding legal limits.

<sup>viii</sup> Afghanistan, Albania, Bosnia and Herzegovina, Cameroon, Colombia, Ecuador, Gabon, Honduras, Lao People's Democratic Republic, Mauritius, Paraguay, Republic of Moldova, Swaziland, Syrian Arab Republic, Uganda, United Arab Emirates, United Republic of Tanzania and Yemen.

**Bangladesh:** Researchers found that Bangladesh's Environment and Social Development Organization (a local NGO) actively advocated for lead paint controls, and circulated Draft Guidelines, which proposed a limit of 50 ppm. Bangladesh's Department of Environment and the Bangladesh and Testing Institution are reviewing the Draft Guidelines.

**India:** India currently follows a voluntary standard IS 133 (Part 1: 2013), which establishes a 90 ppm limit on lead content in paint. Researchers found that the Technical Guidance Module of the Integrated Paint Industry mentions 'Lead in paint industry' as a Safety and Occupational Health Concern.<sup>62</sup> It also states that there is an active move to shift away from using lead in paint and to replace it with alternatives. The XII Five Year Plan of the Indian Chemical Industry (2012-2017) includes the

aim of introducing mandatory use of lead-free pigments and coatings in all applications.<sup>63</sup> On April 8, 2016, the Indian central government published a draft rule that proposes to prohibit the manufacture, trade, import and export of household and decorative paints containing metallic lead exceeding 90ppm. The public has sixty days to comment on the proposed rule.

**Antigua and Barbuda:** The twin-island country of Antigua and Barbuda currently has workplace restrictions on lead paint, but no numerical lead concentration limit. Researchers received confirmation from the Antigua and Barbuda Bureau of Standards (ABBS) that they are currently working with the CARICOM Regional Organization for Standards and Quality (CROSQ) to develop regional standards for paints, which Antigua and Barbuda intends to adopt.

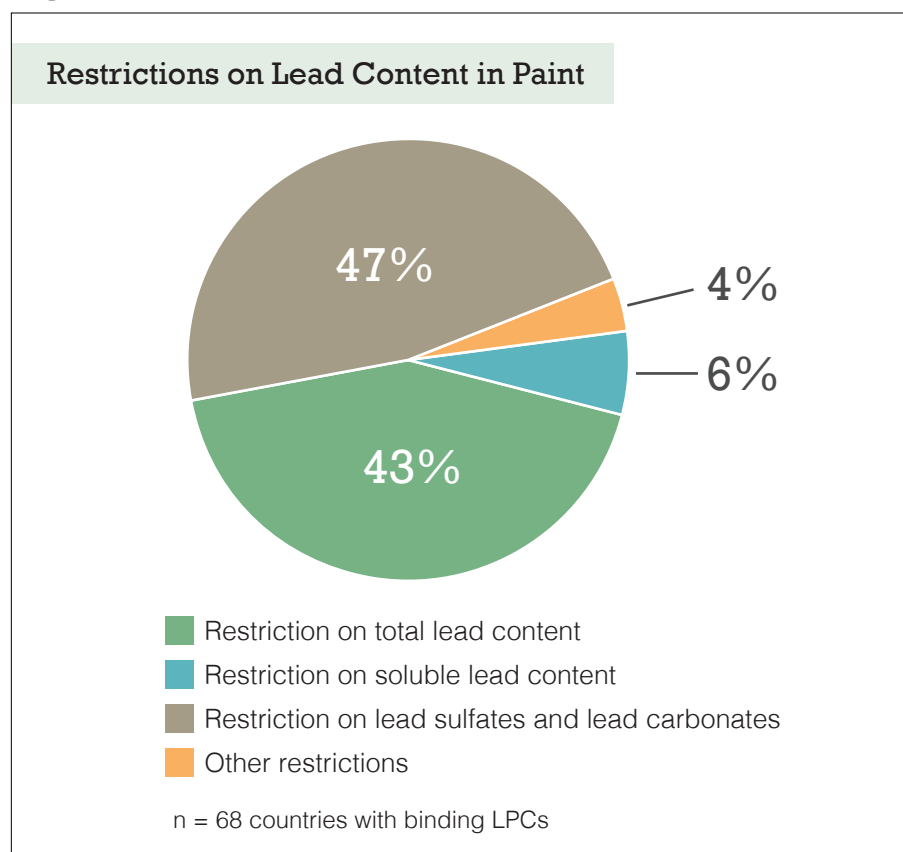


## IV. ILLUSTRATIVE EXAMPLES OF REGULATORY APPROACHES

This section provides a snapshot of the regulatory approaches used by 68 countries in lead paint controls. It is based on the detailed legal analysis of the 128 countries evaluated by WRI and does not include the 2015 SAICM findings. It should serve as a supplement to the global overview provided above as it contains additional details about the mechanisms found within the laws and regulations used in lead paint controls. The complete list of countries evaluated is provided in Table 2. Specifically the following section outlines the approaches used to:

- Restrict the Content and Use of Lead Paint
- Regulate the Manufacture, Export, Import, and Sale of Lead Paint
- Paint Testing and Labeling Requirements
- Enforcement Provisions

**Figure 5 | Restrictions on Lead Content in Paint**



### **a. Restrictions on Content and Use of Lead Paint**

Countries have adopted a range of approaches to regulate lead content and the use of lead paint. Two main approaches are used by the largest number of countries assessed to regulate lead content: (1) restrictions on the lead concentration in paint or (2) restrictions on specific lead compounds added to paint, such as lead sulfates and lead carbonates. The approaches used by countries to restrict and exempt the use of lead paint vary more broadly. A summary of the types of restrictions on lead content can be found in Figure 5.

**Key Finding #2:**  
Among the countries with legally binding limits on lead in paint, there is a range of approaches to regulating the lead content and use of lead paint.

## Two Approaches to Regulating Lead Concentration in Paint

There are two currently used methods used to limit the lead concentration in paint, based on either total lead content or soluble lead content. Table 10 shows the main differences between these two types of concentration-based approaches.

**Table 10 | Two Approaches to Establishing a Maximum Concentration Limit on Lead in Paint**

Restrictions on Total Lead Content	Restrictions on Soluble Lead Content
<ul style="list-style-type: none"> <li>Total lead content is determined as a weight percentage of the total non-volatile portion of the product or as a percentage of the weight of the dried paint film.<sup>64</sup></li> <li>Most countries that limit the lead concentration in paint use a total lead content limit for a number of reasons, including evidence of greater risk reduction provided by a total lead limit and lower analytical costs than the soluble lead approach.</li> </ul>	<ul style="list-style-type: none"> <li>Restriction limits the soluble lead content of lead in paint.</li> <li>For example, Sri Lanka’s limit on lead concentration includes restrictions on lead in paints for toys and accessories for children, but this only applies to the soluble lead content, i.e. lead that is soluble in HCl acid (hydrogen chloride acid).<sup>65</sup></li> <li>When lead concentration limits only regulate the soluble lead content, there is no obligation on the part of manufacturers to limit the larger amount of total lead paint content in their products.</li> <li>The soluble lead is the amount of lead that can be extracted by a standard acid treatment intended to simulate the amount of lead bioavailability for absorption, such as when a child chews on a toy coated with lead paint.<sup>66</sup></li> <li>Research indicates that measuring soluble lead content is not necessarily a measure of bioavailability, as it is influenced by many factors.<sup>67</sup></li> <li>Since several insoluble lead compounds contribute to the total lead paint content but not to the soluble lead content (e.g., lead sulfates), the soluble lead limit allows paint to have higher levels of lead.<sup>68</sup></li> </ul>

The second major approach, established in the EU REACH Regulation, prohibits the sale and use of particular lead compounds, including lead sulfates and lead carbonates (see Table 19(a) for an explanation of EU REACH Regulation).

Aside from these two major approaches, some countries follow an entirely different approach to restricting the content of lead in paint based on use for a specified purpose. For example Fiji, Russia, and Venezuela have all established solitary use approaches:

- Fiji’s law provides that “lead paint shall not be applied in the form of a spray in the interior painting of any buildings or any ships.” The law does not specify whether the restriction applies to soluble or total lead content.<sup>69</sup>

- Russia’s law states that “It is forbidden to use in the composition of paint and varnish materials and solvents used in construction for interior works, chemicals: lead, chromium, cadmium and their compounds.”<sup>70</sup>
- Venezuela’s law restricts the use of white lead in the work place.<sup>71</sup>

Table 11 provides a list of countries by the types of restrictions on lead content in paint. It shows that 29 of the countries establish restrictions on the total lead content in paint. On the other hand, three of the countries assessed (Antigua and Barbuda, China, Mexico, Sri Lanka) restrict the soluble lead content in paint. The EU REACH Regulation restricts lead sulfates and lead carbonates (white lead), and applies to 31 countries

(See Table 19(a) for description of REACH). The EU REACH regulation generally bans lead-based paints, but provides some exemptions (see table 13). Fiji, Russia, and Venezuela establish other types of restrictions and therefore fall into a separate category of regulatory approaches.

**Table 11 | Types of Restrictions on Lead Content in Paint**

Restrictions on the total lead content in paint	Restrictions on the soluble lead content in paint	Restrictions on specific lead compounds (lead sulfates and lead carbonates) in paint (EU REACH)	Other types of restrictions on lead content in paint
Algeria Australia Argentina Armenia Brazil Belarus Canada Chile Costa Rica Dominica Israel Jordan Kyrgyz Republic The former Yugoslav Republic of Macedonia Mexico Montenegro Nepal Oman New Zealand Panama Philippines Serbia South Africa Republic of Korea Switzerland Thailand Trinidad and Tobago Uruguay USA Zimbabwe	Antigua and Barbuda China Sri Lanka	Austria Belgium Bulgaria Croatia Cyprus Czech Republic Denmark Estonia Finland France Germany Greece Hungary Iceland Ireland Latvia Liechtenstein Lithuania Luxembourg Malta Monaco	Netherlands Norway Poland Portugal Romania Slovakia Slovenia Spain Sweden Turkey UK  Fiji Russia Venezuela

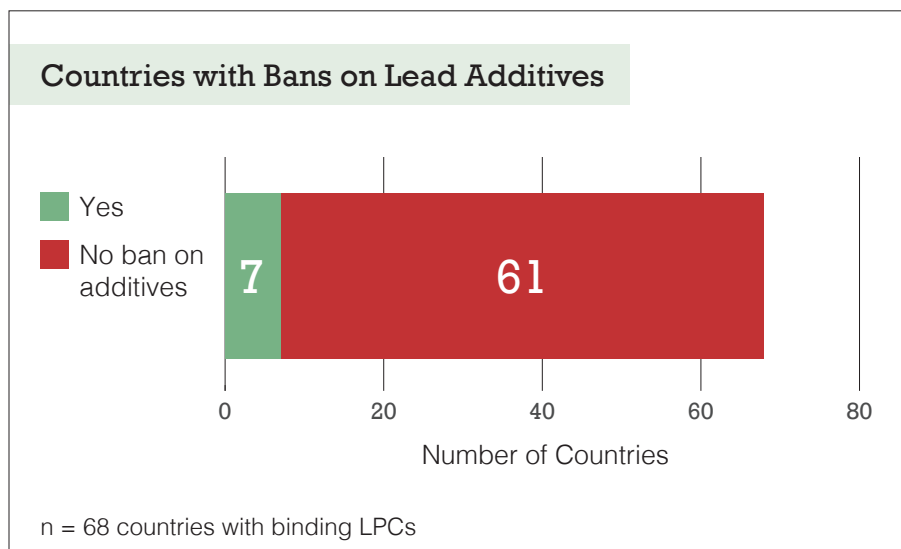
**Ban on Lead Additives**

A minority of countries with lead paint controls have established a complete ban on lead additives. This includes Australia, Macedonia, Montenegro, New Zealand, Philippines, Serbia, and Thailand.

A summary is provided in Figure 6.

Australia’s law limits lead compounds in paints, tinters, inks or ink additives to 0.1 percent (1000 ppm).<sup>72</sup> Likewise, the Philippines’ law<sup>73</sup> strictly prohibits lead and lead compounds in paints and “pigments”, which are types of lead additives.<sup>74</sup>

**Figure 6 | Countries with Bans on Lead Additives**



## Restrictions of Use of Lead-Containing Paint

There is also a range of approaches to regulating the use of lead paint. In many of the 68 countries assessed with lead paint controls, the laws only restrict certain uses of lead paint. Several countries limit restrictions to particular uses (as opposed to all uses), such as in the workplace, in interior household products, or in children’s toys. A summary is provided in Table 12 below. Fourteen (14) of the 68 countries (plus the 31 EU REACH countries assessed) establish restrictions on the use of lead paint in children’s products. Republic

of Korea’s law, for example, provides that “it is prohibited to manufacture, import and use accessories designed for children 13 years or younger with paint mixtures containing 0.06% (600 ppm) or more lead.”<sup>75</sup> Additionally, 13 countries establish restrictions on domestic, architectural, and decorative uses (see table 12 for list of countries). However, there is significant variation within the different categories of use restriction. Two of the 68 countries (Oman and Switzerland) assessed do not explicitly regulate the use of lead-containing paint.

In several of the countries assessed, the use restrictions are vaguely worded. Ambiguities in the wording of these

restrictions potentially decrease the lead paint controls’ effectiveness in eliminating lead paint. For instance, a vaguely worded law or regulation fails to help ensure manufacturers, compliance officers, and other stakeholders can differentiate between restricted and unrestricted uses. Clear criteria establishing when lead-containing paint can and cannot be used may enable both manufacturers and retailers to better understand the scope of the law or regulation’s application, and therefore help promote better compliance and enforcement.

**Table 12 | Restriction on Use of Lead-Containing Paint**

General Restrictions on the Use of Lead Paint	Specific Restrictions on Use in the Workplace	Specific Restrictions on Use in Children’s Products (toys, etc.)	Specific Use Restrictions (E.g., Domestic, Architectural, and Decorative Uses)	Other Use Regulation	No Regulation on Use
Argentina Armenia Australia Brazil Chile EU REACH countries Israel The former Yugoslav Republic of Macedonia Mexico Nepal New Zealand Philippines Serbia Thailand Zimbabwe	Antigua and Barbuda <sup>76</sup> Belarus <sup>77</sup> Fiji <sup>78</sup> Dominica <sup>79</sup> Panama <sup>80</sup> South Africa <sup>81</sup> Venezuela <sup>82</sup>	Algeria <sup>83</sup> Brazil <sup>84</sup> Canada <sup>85</sup> Chile <sup>86</sup> China <sup>87</sup> Costa Rica <sup>88</sup> EU REACH <sup>89</sup> Israel <sup>90</sup> Mexico <sup>91</sup> Philippines <sup>92</sup> South Africa <sup>93</sup> Republic of Korea <sup>94</sup> Sri Lanka <sup>95</sup> USA <sup>96</sup> Uruguay <sup>97</sup>	Canada <sup>98</sup> China <sup>99</sup> Dominica <sup>100</sup> Kyrgyz Republic <sup>101</sup> Mexico <sup>102</sup> Panama <sup>103</sup> Philippines <sup>104</sup> Russia <sup>105</sup> South Africa <sup>106</sup> Sri Lanka <sup>107</sup> Thailand <sup>108</sup> Trinidad and Tobago <sup>109</sup> Uruguay <sup>110</sup> USA <sup>111</sup>	Turkey <sup>112</sup> South Africa <sup>113</sup> Panama <sup>114</sup>	Oman Switzerland

## Exemptions from Use Restrictions

Table 13 shows the exemptions from use restrictions. The term “exemptions” as it is used in this report refers to exceptions to use restrictions, which allow for the use of lead paint under certain circumstances. Of the 68 countries with lead paint controls, 24 of the countries provide some exemptions from the use restrictions. However, just because a law does not explicitly establish “use exemptions” it does not necessarily mean that all uses of lead paint are restricted. Whether certain uses are permitted also depends on the types of uses the

law covers (e.g., domestic vs. industrial uses). The two most common types of exemptions included paint used in the restoration and maintenance of works of art and historic buildings and surface coating paint. Chile’s law, for example, provides that lead paint may be used for “paints and similar materials, exclusive for artistic use.”<sup>115</sup> The “artistic use” exemption is found in other South American countries (see Table 13). The specific detailed list “non-domestic purposes” varies by country but generally covers artistic, agricultural, industrial equipment and uses, metal structures and commercial, bridges and port works,

traffic signs and markings and safety in motor vehicles, aircraft, ships and railways and paint used in graphic art. Some other use exemptions include dried powders for industrial use, toys or parts of toys not posing a hazard to children, and temporary imports and items in transit (moving from one country to another). In the majority of countries with use exemptions, the law exempts uses for which there is relatively less of risk of human contact with lead (e.g., people rarely come into physical contact with traffic signs).

**Table 13 | Exemptions from the Restrictions on Use of Lead-Containing Paint**

No use exemptions	Allowed for non-domestic purposes (e.g., allowed for industrial purposes, agricultural purposes, traffic signs, use in steel/metals, motor vehicles, etc.) <sup>ix</sup>	Allowed for artistic purposes and restoration of historic Buildings	Other
Antigua and Barbuda Armenia Australia China Costa Rica Fiji Kyrgyz Republic Nepal New Zealand Oman Panama Philippines Russia Republic of Korea Sri Lanka Switzerland Thailand Venezuela Zimbabwe	Argentina <sup>116</sup> Brazil <sup>117</sup> Canada <sup>118</sup> Chile <sup>119</sup> China <sup>120</sup> Mexico <sup>121</sup> South Africa <sup>122</sup> Trinidad and Tobago <sup>123</sup> Uruguay <sup>124</sup> USA <sup>125</sup>	Argentina <sup>126</sup> Brazil <sup>127</sup> EU REACH Countries <sup>x</sup> Canada <sup>128</sup> Chile <sup>129</sup> The former Yugoslav Republic of Macedonia <sup>130</sup> Montenegro <sup>131</sup> Panama <sup>132</sup> Serbia <sup>133</sup> Turkey <sup>134</sup> Uruguay <sup>135</sup>	Argentina <sup>136</sup> Dominica <sup>137</sup> Israel <sup>138</sup> USA <sup>139</sup> EU REACH countries <sup>140</sup>

<sup>ix</sup> Among the laws/regulations assessed, “non-domestic purposes” includes use for agricultural and industrial equipment, industrial, agricultural and commercial metalware, bridges, demarcation of traffic and safety, traffic signs and safety, port works, motor vehicles, aircraft, ships and railways, graphic art, white line, paints and similar materials, unique artistic use, graphical inks.

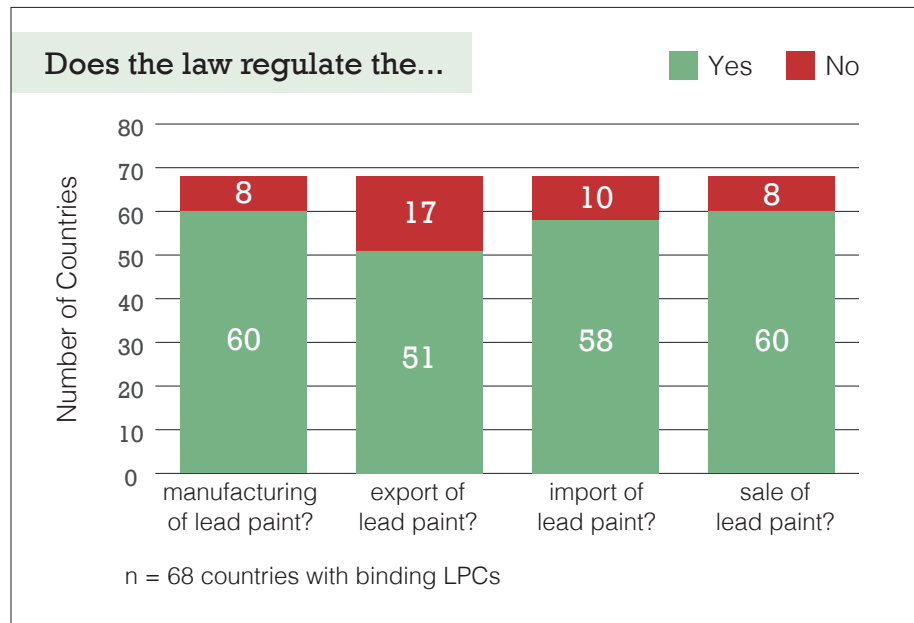
<sup>x</sup> See table 19(a) for summary of EU REACH regulations.

**b. Regulations on Manufacturing, Exporting, Importing, and Selling Lead Paint**

As illustrated in Figure 7, most countries, with lead paint controls, regulate the manufacture, export, import, and sale of lead paint. However, 8 of the 68 countries with lead paint controls do not regulate the manufacture of lead paint. In addition, 17 of these 68 countries do not regulate exports while 10 do not regulate lead paint imports. Eight (8) of these 68 countries do not regulate the sale of lead paint.<sup>xi</sup> A list of the countries that do not regulate the manufacture, export, import, and sale of lead paint is provided in Table 14.

**Key Finding #3:**  
While most of the countries with lead paint controls that regulate the manufacture, export, import, and sale of lead paint, the laws in several countries are not comprehensive and still allow lead paint to be manufactured, exported, imported or sold.

**Figure 7 | Regulations on the Manufacture, Export, Import, and Sale of Lead Paint**



**Table 14 | Countries that do not Regulate Manufacture, Export, Import, and Sale of Lead Paint**

Does not regulate manufacturing:	Does not regulate exports:	Does not regulate imports:	Does not regulate sales:
Antigua and Barbuda, Belarus, Jordan, Kyrgyz Republic, Mexico, Turkey, Venezuela, Zimbabwe	Algeria, Antigua and Barbuda, Belarus, Canada, China, Fiji, Jordan, Kyrgyz Republic, Mexico, Nepal, Oman, Panama, Russia, Sri Lanka, Turkey, Uruguay, Venezuela	Antigua and Barbuda, Belarus, China, Fiji, Kyrgyz Republic, Mexico, Russia, Turkey, Venezuela	Antigua and Barbuda, Belarus, Fiji, Kyrgyz Republic, Mexico, Nepal, Oman, Russia

<sup>xi</sup> See Table 22 for a list of countries that regulate manufacture, export, import, and sale of lead paint.

### c. Labeling and Paint Testing/Certification Requirements<sup>xii</sup>

This Section provides findings and a discussion on which countries establish labeling and paint testing/certification requirements. Figure 8 shows that 53 of the 68 countries assessed with lead paint controls establish labeling requirements, which require manufacturers to label products that contain lead in paint.

**Key Finding #4:**  
A detailed analysis found that 53 of the countries assessed establish labeling requirements, while only 17 countries require that paint be tested and certified for lead content.

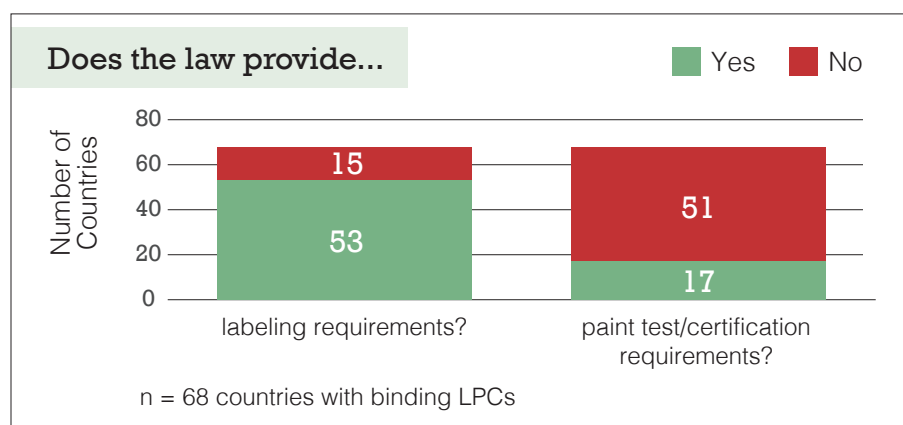
In the US, Canada, and other countries, labeling products, which contain lead paint, is only required when the lead level exceeds the legal concentration limit. Canada’s Surface Material Coatings Regulations, for example, establishes a 90 ppm limit on lead in paint, and provides that, if the concentration of total lead present is more than 90 mg/kg (90 ppm), then the following label must be provided “DANGER CONTAINS LEAD/CONTIENT DU PLOMB DO NOT APPLY TO SURFACES ACCESSIBLE TO CHILDREN OR PREGNANT WOMEN.” Such labels may decrease the likelihood of lead exposure among children, pregnant women, and other people.

In 17 of the 68 countries with binding lead paint controls paint is required to be tested for lead content and manufacturers must certify products meet applicable limits. Uruguay’s law, for example, requires manufactures to submit a proposal for analytical sampling for lead content. This proposal must include design criteria and the methods to be used and must be approved by the National Environment Directorate. A study by UNEP indicated that Uruguay

has achieved low levels of lead content in paint, which indicated lead paint controls have been implemented successfully.<sup>141</sup>

In 15 of the 68 countries with lead paint controls, there is no obligation to label products containing lead paint. In addition, 51 of the countries assessed do not require paint to be tested or certified for lead content. Table 15 provides a list of countries with no labeling and paint testing/certification requirements.

**Figure 8 | Paint Testing and Certification Requirements**



**Table 15 | Countries with no Labeling and Paint Testing/Certification Requirements**

No labeling requirements	No paint testing/certification requirements:
Algeria, Antigua/Barbuda, Belarus, Brazil, Dominica, Fiji, Jordan, Kyrgyz Republic, Oman, Russia, Republic of Korea, Switzerland, Trinidad/Tobago, Turkey, Venezuela	31 EU REACH countries + Antigua/Barbuda, Australia, Belarus, Canada, Costa Rica, Fiji, Jordan, Kyrgyz Republic, The former Yugoslav Republic of Macedonia, Montenegro, Nepal, New Zealand, Oman, Russia, Serbia, South Africa, Sri Lanka, Switzerland, Turkey, Venezuela

<sup>xii</sup> See Table 23 for a list of countries with labeling and paint testing/certification requirements.

#### d. Enforcement Provisions<sup>xiii</sup>

Most of the 68 countries assessed (with binding LPCs) establish enforcement provisions to ensure compliance with lead paint controls. However, there is variation in the types of enforcement provisions established in the countries assessed. A summary of the countries with enforcement provisions is provided in Figure 9. Definitions of enforcement provision terminology is provided in Table 16. The list of countries with lead paint controls, but no enforcement provisions is provided in Table 17.

**Key Finding #5:**  
**Most of the 68 countries with lead paint controls reassessed for this report have established enforcement provisions to ensure compliance with their lead limits.**

Enforcement of EU REACH, for example, is the individual responsibility of Member States (Art. 125-127). For this reason, there is variation in how REACH is enforced among the Member States. Some EU countries impose both civil penalties and criminal sanctions, while other countries do not impose both of these penalties. Fifty-nine (59) of the 68 countries assessed (with binding LPCs) provide injunctive relief as an enforcement measure to ensure compliance. In Brazil, for example,

the penalty for noncompliance with the lead paint controls is notification and seizure of the products, which exceed the lead paint limit (600 ppm). Many of these countries permit government agencies to randomly inspect products and suspend activities if the lead paint controls are violated.

Forty-five (45) of the 68 countries assessed impose civil penalties, such as administrative fines, for activities that violate lead paint controls. Forty-eight (48) of the 68 countries assessment impose criminal sanctions such as

criminal fines and, in some cases, prison time for activities that violate lead paint controls. In Brazil and Argentina, they do not explicitly state what the fine is for noncompliance in the laws, presumably meaning the monitoring/enforcing agency decides how much to fine violators on a case-by-case basis. On the other hand, in the USA, the Consumer Product Safety Act (CPSA) imposes a \$100,000 fine per violation (maximum \$15.15 million), and/or imprisonment for up to 5 years for knowing and willful violation of the USA's lead paint controls.<sup>142</sup>

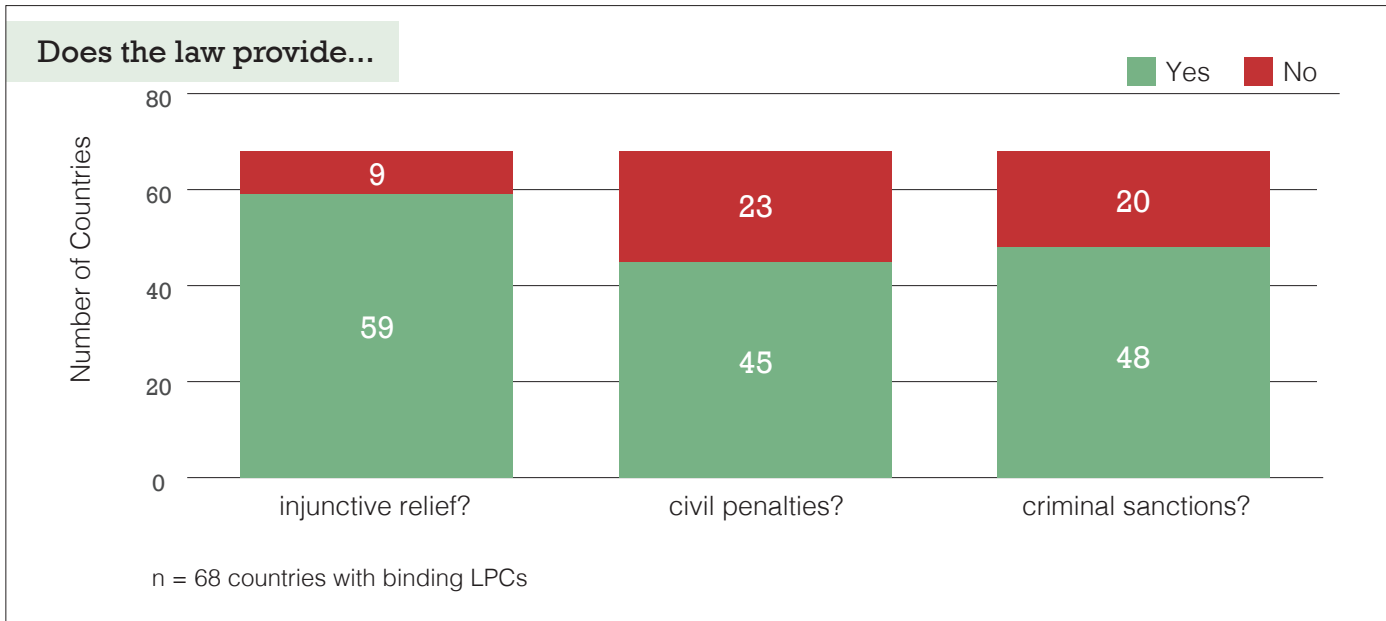
**Table 16 | Definitions of Enforcement Provisions**

<b>Injunctive Relief</b>	any government measure, including measures by ministries, agencies, or courts, to remedy violations by suspending or prohibiting activities that violate LPCs.
<b>Civil Penalties</b>	penalties, fines, forfeiture of property, and other civil sanctions for non-compliance.  <i>*The term "civil penalties" may vary depending on the country, region, and language of the law, and so the finding from this indicator (in Fig. 9) may be subject to a margin of error, which has not been calculated or assessed.</i>
<b>Criminal Sanctions</b>	criminal fines and/or imprisonment for non-compliance

<sup>xiii</sup>See Table 24 for a list of countries with enforcement provisions



**Figure 9 | Countries with Enforcement Provisions**



**Table 17 | Countries with Lead Paint Controls, but no Enforcement Provisions**

No injunctive relief	No civil penalties	No criminal sanctions
Antigua and Barbuda, Jordan, Nepal, Oman, Panama, Sri Lanka, Thailand, Turkey, Venezuela	Algeria, Antigua and Barbuda, Canada, Cyprus, Costa Rica, Chile, Estonia, Germany, Hungary, Jordan, Latvia, Nepal, Oman, Panama, Poland, Slovenia, South Africa, Sweden, Switzerland, Thailand, Turkey, Venezuela, and Zimbabwe	Bulgaria, Costa Rica, Croatia, Ireland, Kyrgyz Republic, Liechtenstein, The former Yugoslav Republic of The former Yugoslav Republic of Macedonia Malta, Montenegro, Nepal, Netherlands, Oman, Panama, Portugal, Russia, Serbia, Spain, Sri Lanka, Thailand, and Turkey

## V. CONCLUSIONS

**The information provided in this report shows that progress has been made in establishing lead paint controls, especially in recent years, but more needs to be done to meet the 2020 global goal.<sup>xii</sup>**

The Alliance's established 2020 target of ensuring all countries have adopted national legally binding controls on the production, import, sale and use of lead paints with special attention to the elimination of lead decorative paints should also be recognized as an important contributing factor to this progress. These controls will help reduce children's exposure to paints containing lead and minimize occupational exposures to lead paint.

This report documents the range of approaches used to establish legally binding limits of lead in paint, and developed five key findings. Based on a global analysis, only 70 of 196 countries (36%) have established lead paint controls. This number suggests there is still a significant gap to be filled to achieve the 2020 goal that all countries will have legally binding lead paint restrictions. There is also some evidence that development of regional standards can help countries take action. Disaggregating overall findings on lead paint controls lead paint controls by region and income level shows that there is some positive correlation between the existence of lead paint controls and regions and income levels.

Among the countries reassessed by WRI with lead paint controls, there is a range of approaches to regulating the lead content and use of lead paint. This includes establishing a maximum concentration limit for lead in paint, prohibiting the sale and use of particular lead compounds, or specific use approaches. Countries apply a broad range of approaches to lead paint use restrictions as well, such as restrictions for use in the workplace, in interior household products, or in children's toys.

While most of the countries with lead paint controls regulate the manufacture, export, import, and sale of lead paint, the law in several countries continues to allow lead paint to be manufactured, exported, imported and/or sold. Further, while most of the countries assessed establish labeling requirements, only 17 countries require that paint be tested and certified for lead content. Finally, our analysis found that most of the 68 countries with lead paint controls established enforcement provisions to ensure compliance with lead paint controls.

Several countries, including the Philippines, Uruguay, Thailand, and China have recently passed binding legislation/regulations demonstrating a growing recognition of the problem of exposure to lead paint and that the elimination of lead paint has become a priority. However, many countries still do not have effective legally binding limits on lead in paint. More needs to be done to protect children's health, through development and implementation of national legal limits on lead in paint in every country in the world. Furthermore, lead paint controls should be clearly-worded to ensure that effective laws and regulations on lead in paint are created and that they promote comprehensive compliance and enforcement.

By establishing effective lead paint controls, countries will help serve Goal 3 of the 2030 Sustainable Development Goals (SDGs).<sup>143</sup> SDG 3 is to "ensure healthy lives and promote well-being for all at all ages." The Global Alliance's focus on preventing lead paint exposure among children is particularly relevant to Goal 3. More specifically, SDG 3.9 states "by 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals..." The passage of effective lead paint controls will help achieve SDG 3.9 by reducing the lead exposure, and therefore deaths and illnesses from lead exposure, among children and adults. As awareness about the dangers of exposure to lead paint continue to grow, the authors of this report urge law and policy makers around the world to use this report as a guidance document when drafting effective lead paint controls for their countries to address this important health problem.

<sup>xii</sup>See Table 20 for list of effective dates.

# APPENDICES

## Table 18 | Legal Indicators

1. Are there existing laws that regulate lead in paint in the country being researched (this may include laws from standards agencies, environmental agencies, customs)?
2. Are there existing lead paint regulations under the relevant legislation?
3. If there is legislation that regulates lead in paint, what is the date on which the lead in paint limits or other relevant requirements came into effect? (please list all relevant dates)
4. If there are regulations under the relevant legislation, what is the date on which the lead in paint limits or other relevant requirements came into effect? (please list all relevant dates)
5. If relevant legislation or regulations were passed but have not yet come into effect, on what date will the lead in paint limits or other requirements come into effect? (please list all relevant dates)
6. Are there other relevant provisions with applicable effective dates, such as phase out dates for certain types of paints (e.g., household /decorative, industrial/ commercial/toys) (please list all relevant dates)?
7. What is/are the name of the Government legal authority (ies) that has (have) jurisdiction/ mandate in the passage and implementation of the law?
8. Which Government authority (ies) is (are) in charge of developing standards?
9. Which Government authority (ies) is (are) in charge of enforcing lead paint laws?
10. Does the law include enforcement provisions to ensure compliance?
11. Does the law provide for injunctive relief?
12. Does the law provide for civil penalties for violations?
13. Does the law provide for criminal sanctions or fines for violations?
14. What is the definition of lead paint in the legislation or regulations (for example, does it include varnishes, lacquers, stains, enamels, etc.)?
15. Are there other key terms that need to be defined in order to understand the applicable legal framework?
16. Does the law provide a specific ppm standard for lead in paint (e.g., 90 ppm lead in paint)?
17. Does the law contain a ban on lead additives?
18. Does the law ban a certain percentage of lead by weight (e.g., 0.06% lead by weight)?
19. Does the law provide a completely different way of limiting lead in paint than by weight, specific ppm, or specific lead compounds?
20. Does the law set other legal limits or standards on lead in paint (not previously mentioned)?
21. Does the law regulate the manufacturing of lead in paint?
22. Does the law regulate the import of lead in paint?
23. Does the law regulate the export of lead in paint?
24. Does the law regulate the sale and/or use of lead in paint?
25. Does the law regulate the ways in which lead may be used?
26. Does the law exempt any types of use of lead paint (use exemptions) (e.g., use for artistic painting, historic buildings, etc.)?
27. Does the law include any paint test and/or certification requirements for lead in paint?
28. Does the law include any labeling requirements for lead in paint?
29. Are there other provisions that are key to understanding the legal framework applicable to lead in paint?

**Table 19(a) | Summary of EU Reach Regulation**

Summary of EU REACH Regulation
<ul style="list-style-type: none"><li>• EU REACH took effect on June 1, 2007. Annex XVII of the Regulation, which establishes the ban on lead compounds, took effect on June 1, 2009.</li><li>• 31 of the countries assessed in this report follow the EU REACH Regulation.</li><li>• Derogation from REACH is permitted as long as the Member State informs the Commission</li><li>• Under REACH, the manufacture, import, placing on the market or use of substances, including lead, are subject to certain to certain conditions including registration, evaluation, restriction, and in some cases prohibition<ul style="list-style-type: none"><li>▪ Annex XVII, entries 16 and 17, in the REACH Regulation provide that:<ul style="list-style-type: none"><li>♦ Lead carbonates and lead sulfates shall not be placed on the market, or used, as substances or in mixtures, where the substance or mixture is intended to be used in paint..</li><li>♦ Exemptions: Member states may permit the use, and putting on the market, of lead paint for the purpose of restoration and maintenance of works of art and historic buildings and their interiors as long as they inform the Commission.</li><li>♦ Enforcement of REACH is the responsibility of Member States' respective government agencies (Art. 125-127). So there is some variation in how REACH is enforced among the Member States—some countries impose civil penalties/ criminal sanctions, and some countries do not impose these penalties.</li></ul></li></ul></li><li>• Under REACH, the use of lead compounds by “professionals” is allowed. Suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as: “<i>Restricted to professional users</i>”.</li><li>• Lead compounds (lead chromate, lead sulfochromate yellow, and lead chromate molybdate sulfate) are subject to an authorization procedure, which is aimed at ensuring that lead is progressively replaced with suitable alternative substances or technologies.<ul style="list-style-type: none"><li>♦ All manufacturers, importers and downstream users applying for authorizations must analyze the availability of alternatives and consider their risks, and the technical and economic feasibility of substitution. Authorization can only be granted where an applicant applying for an authorization demonstrates that the risks to human health and the environment arising from the use of the substance can be adequately controlled.</li><li>♦ Substances that are subject to the authorization procedure but for which no authorization is granted are not allowed to be placed on the market for use or to be used in the European Union after 21 May 2015.</li></ul></li><li>• Several lead compounds are included in the SVHC candidate list (<a href="http://echa.europa.eu/web/guest/candidate-list-table">http://echa.europa.eu/web/guest/candidate-list-table</a>) established in accordance with Article 59 of the REACH Regulation. This triggers certain consequences when the substances are present in articles (including when contained in paints used in the manufacture of the articles).</li><li>• In accordance with Article 7(2) of the REACH Regulation, producers or importers of articles must notify the European Chemicals Agency if a substance of very high concern on the candidate list is present in those articles in quantities totaling over one tonne per producer or importer per year and the substance is present in those articles above a concentration of 0.1 % (1000 ppm) weight by weight<sup>xx</sup>, unless exposure to humans or the environment can be excluded under normal or reasonably foreseeable conditions of use including disposal. Any supplier of an article containing a substance included in the candidate list above 0.1% (1000 ppm) weight by weight must provide to the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance. Consumers have the right to request that information, which has to be provided within 45 days of the request.</li></ul>

<sup>xx</sup>This concentration unit is similar to ppm or ppb except it focuses on the solute as a percent (by mass) of the total solution.

## Table 19(b) | Classification, Labeling, and Packaging Regulation (CLP Regulation)

### Summary of Classification, Labeling, and Packaging – (CLP) Regulation

- The CLP Regulation took effect on June 20, 2009 and applies to 31 of the countries assessed in this report.
- The CLP Regulation is also a legislation of the European Union, which aims that hazards presented by chemicals are clearly communicated in the European Union through classification and labeling of chemicals.
- CLP stands for Classification, Labeling and Packaging. The CLP Regulation seeks to ensure that European Union workers and consumers are clearly informed of the hazards associated with chemicals by means of a system of classification and labeling. The aim is to ensure that the same hazards are described and labeled in the same way in all EU countries.
- The CLP Regulation is, as a general principle, applied to all substances and mixtures supplied in the Community, except where other Community legislation lays down more specific rules on classification and labeling. Before placing chemicals on the market within the European Union, the industry must identify the potential risks to human health and the environment of such substances and mixtures and must classify them in line with these identified hazards.
- Classification means the assessment, whether a substance is hazardous to people and the environment and the description of the hazard by use of hazard classes. The hazard classes are applied together with hazard statements (a phrase assigned to a hazard class and category that describes the nature of the hazards of a hazardous substance or mixture, including, where appropriate, the degree of hazard; worded in accordance with Annex III of the CLP Regulation) and precautionary statements (a phrase that describes recommended measure(s) to minimize or prevent adverse effects resulting from exposure to a hazardous substance or mixture due to its use or disposal; worded in accordance with Annex IV Part 2 of the CLP Regulation).
- The hazardous chemicals also have to be labeled according to a standardized system so that workers and consumers know about their effects before they handle them. Labeling means the communication of the already identified hazards of substances and mixtures, indicating at least the information and elements required by the provisions of Chapter 2, Title III of the CLP Regulation on the packaging of the respective substances.
- Finally, pursuant to Article 35 of the CLP Regulation, the packaging containing hazardous substances and mixtures must fulfill the following requirements:
  - ◆ must be designed and constructed so that its contents cannot escape, except in cases where other more specific safety devices are prescribed;
  - ◆ the materials constituting the packaging and fastenings shall not be susceptible to damage by the contents, or liable to form hazardous compounds with the contents;
  - ◆ the packaging and fastenings shall be strong and solid throughout to ensure that they will not loosen and will safely meet the normal stresses and strains of handling;
  - ◆ packaging fitted with replaceable fastening devices shall be designed so that it can be refastened repeatedly without the contents escaping.
- The responsibility for the identification of hazards of substances and mixtures and for deciding on their classification mainly lies with manufacturers, importers and downstream users of those substances or mixtures.

**Table 20 | Lead Paint Controls Disaggregated by Region for Countries Reassessed by WRI**

LPCs Disaggregated by Region	
<b>Europe</b>	Researchers found LPCs in <b>39 of the 44 European countries</b> . <sup>144</sup> <ul style="list-style-type: none"> <li>• 31 European countries adopted EU Regulation (EC) No. 1907/2008 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (see Table 17(a) for full description of REACH)</li> </ul>
<b>Latin America and the Caribbean</b>	Researchers found LPCs in <b>11 of the 23 Latin American countries assessed</b> . <sup>145</sup>
<b>North America</b>	<b>Canada and the US</b> establish a 90 ppm LPC.
<b>Western Asia</b>	Researchers found LPCs in <b>2 of the 9 Western Asian countries</b> . <sup>146</sup>
<b>Asia and the Pacific</b>	Researchers found LPCs in <b>9 of the 26 Asian countries assessed</b> . <sup>147</sup>
<b>Africa</b>	Researchers found LPCs in <b>2 of the 24 African countries</b> . <sup>148</sup>

**Table 21 | Regulations on the Manufacture, Export, Import, and Sale of Lead Paint**

Manufacturing		Exports		Imports		Sale	
Argentina	The former Yugoslav Republic of Macedonia	Argentina	The former Yugoslav Republic of Macedonia	Argentina	The former Yugoslav Republic of Macedonia	Argentina	Luxembourg
Algeria	Malta	Armenia	Malta	Algeria	Malta	Algeria	The former Yugoslav Republic of Macedonia
Armenia	Monaco	Australia	Monaco	Armenia	Monaco	Armenia	Malta
Australia	Montenegro	Austria	Montenegro	Australia	Montenegro	Australia	Monaco
Austria	Nepal	Belgium	Netherlands	Austria	Nepal	Austria	Montenegro
Belgium	Netherlands	Brazil	New Zealand	Belgium	Netherlands	Belgium	Monaco
Brazil	New Zealand	Bulgaria	Norway	Brazil	New Zealand	Brazil	Netherlands
Bulgaria	Norway	Chile	Philippines	Bulgaria	Norway	Bulgaria	New Zealand
Canada	Oman	Chile	Poland	Canada	Oman	Canada	Norway
Chile	Panama	Costa Rica	Portugal	Chile	Panama	Chile	Norway
China	Philippines	Croatia	Romania	Costa Rica	Philippines	China	Panama
Costa Rica	Portugal	Croatia	Serbia	Croatia	Poland	Costa Rica	Panama
Croatia	Romania	Cyprus	Slovakia	Cyprus	Poland	Croatia	Philippines
Cyprus	Russia	Czech Republic	Slovenia	Czech Republic	Portugal	Cyprus	Poland
Czech Republic	Serbia	Denmark	South Africa	Denmark	Romania	Czech Republic	Portugal
Denmark	Slovakia	Estonia	Republic of Korea	Estonia	Serbia	Denmark	Romania
Dominica	Slovenia	Finland	Spain	Dominica	Slovakia	Dominica	Slovakia
Estonia	South Africa	France	Sweden	Estonia	Slovenia	Estonia	Slovenia
Fiji	Republic of Korea	Germany	Switzerland	Finland	South Africa	Fiji	South Africa
Finland	Spain	Greece	Thailand	France	Republic of Korea	Finland	Republic of Korea
France	Sri Lanka	Hungary	Trinidad and Tobago	Germany	Spain	France	Spain
Germany	Sweden	Iceland	UK	Greece	Sri Lanka	Germany	Sri Lanka
Greece	Switzerland	Ireland	USA	Hungary	Sweden	Greece	Sweden
Hungary	Thailand	Israel	Zimbabwe	Iceland	Switzerland	Hungary	Switzerland
Iceland	Trinidad and Tobago	Latvia		Ireland	Thailand	Iceland	Thailand
Ireland	UK	Liechtenstein		Israel	Trinidad and Tobago	Ireland	Trinidad and Tobago
Israel	Uruguay	Lithuania		Jordan	UK	Israel	Tobago
Latvia	USA	Luxembourg		Latvia	Uruguay	Jordan	Turkey
Liechtenstein				Liechtenstein	USA	Latvia	UK
Lithuania				Lithuania	Zimbabwe	Liechtenstein	UK
Luxembourg				Luxembourg		Lithuania	Uruguay
							USA
							Venezuela
							Zimbabwe

**Table 22 | Labeling and Paint Testing and Certification Requirements**

Countries with labeling requirements			Countries with paint testing or certification requirements
Argentina	Greece	Panama	Algeria
Armenia	Hungary	Philippines	Argentina
Australia	Iceland	Poland	Armenia
Austria	Ireland	Portugal	Brazil
Belgium	Israel	Romania	Chile
Bulgaria	Latvia	Serbia	China
Canada	Liechtenstein	Slovakia	Dominica
Chile	Lithuania	Slovenia	Israel
China	Luxembourg	South Africa	Mexico
Costa Rica	The former Yugoslav	Spain	Panama
Croatia	Republic of	Sri Lanka	Philippines
Cyprus	Macedonia	Sweden	Republic of Korea
Czech Republic	Malta	Thailand	Thailand
Denmark	Mexico	UK	Trinidad and Tobago
Estonia	Monaco	Uruguay	Uruguay
Finland	Montenegro	USA	USA
France	Nepal	Zimbabwe	Zimbabwe
Germany	Netherlands		
	New Zealand		
	Norway		

**Table 23 | Enforcement Provisions**

Countries that provide injunctive relief	Countries that impose civil penalties	Countries that impose criminal sanctions			
Algeria	Liechtenstein	Argentina	New Zealand	Algeria	Monaco
Argentina	Lithuania	Armenia	Norway	Antigua and Barbuda	New Zealand
Armenia	Luxembourg	Australia	Philippines	Argentina	Norway
Australia	The former Yugoslav	Austria	Portugal	Armenia	Philippines
Austria	Republic of	Belarus	Romania	Australia	Poland
Belarus	Macedonia	Belgium	Russia	Austria	Romania
Belgium	Malta	Brazil	Serbia	Belarus	Slovakia
Brazil	Mexico	Bulgaria	Slovakia	Belgium	Slovenia
Bulgaria	Monaco	China	Republic of Korea	Brazil	South Africa
Canada	Montenegro	Croatia	Spain	Canada	Republic of Korea
Chile	Netherlands	Czech Republic	Sri Lanka	Chile	Sweden
China	New Zealand	Denmark	Trinidad and Tobago	China	Switzerland
Costa Rica	Norway	Dominica	UK	Cyprus	Trinidad and Tobago
Croatia	Philippines	Fiji	Uruguay	Czech Republic	UK
Cyprus	Poland	Finland	USA	Denmark	Uruguay
Czech Republic	Portugal	France		Dominica	USA
Denmark	Romania	Greece		Estonia	Venezuela
Dominica	Russia	Iceland		Fiji	Zimbabwe
Estonia	Serbia	Ireland		Finland	
Fiji	Slovakia	Israel		France	
Finland	Slovenia	Kyrgyz Republic		Germany	
France	South Africa	Liechtenstein		Greece	
Germany	Republic of Korea	Lithuania		Hungary	
Greece	Spain	Luxembourg		Iceland	
Hungary	Sweden	The former Yugoslav		Israel	
Iceland	Switzerland	Republic of		Jordan	
Ireland	Trinidad and Tobago	Macedonia		Latvia	
Israel	UK	Malta		Lithuania	
Kyrgyz Republic	Uruguay	Mexico		Luxembourg	
Latvia	USA	Monaco		Mexico	
	Zimbabwe	Montenegro			
		Netherlands			

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# ENDNOTES

- <sup>1</sup> WHO, 2015.
- <sup>2</sup> GAELP Toolkit for Establishing Laws, Module B; U.S. National Toxicology Program, 2012.
- <sup>3</sup> WHO, 2015.
- <sup>4</sup> SAICM Report, 2015.
- <sup>5</sup> UNEP, 2013.
- <sup>6</sup> Ibid.
- <sup>7</sup> GAELP Business Plan, 2013.
- <sup>8</sup> SAICM Conference, 2015.
- <sup>9</sup> Ibid.
- <sup>10</sup> GAELP Business Plan, 2013.
- <sup>11</sup> SAICM Conference, 2015.
- <sup>12</sup> See the UN Sustainable Development Knowledge Platform at <https://sustainabledevelopment.un.org/?menu=1300> for more information about the SDGs
- <sup>13</sup> GAELP Business Plan, 2013.
- <sup>14</sup> GAELP Toolkit for Establishing Laws, Module J.
- <sup>15</sup> SAICM Report, 2015.
- <sup>16</sup> Government of Armenia, 2014.
- <sup>17</sup> Government of Fiji, 1971.
- <sup>18</sup> Government of Trinidad and Tobago, 2012.
- <sup>19</sup> Government of Turkey, 2015.
- <sup>20</sup> Government of Venezuela, 2001.
- <sup>21</sup> Government of Zimbabwe, 2007.
- <sup>22</sup> Lawyers from Argentina, Armenia, Belarus, Brazil, Benin, Chile, Cameroon, Czech Republic, India, Israel, Jamaica, The former Yugoslav Republic of Macedonia, Mexico, Mongolia, Nepal, South Africa, United States, and the EU REACH countries completed the legal analyses incorporated in this report.
- <sup>23</sup> The online databases included, but were not limited to, FAOLEX, ECOLEX, and LEXADIN, and Google. <http://faolex.fao.org/>; <http://www.ecolex.org/start.php>; <http://www.lexadin.nl/wlg/legis/nofr/legis.htm>
- <sup>24</sup> WHO, 2015.
- <sup>25</sup> Government of Belarus, 2002.
- <sup>26</sup> Government of Canada, 2005.
- <sup>27</sup> China's regulation on toys sets a 90 ppm LPL applicable to "soluble" lead paint. Government of China, 2014.
- <sup>28</sup> Government of Israel, 1994.
- <sup>29</sup> Government of Kyrgyz Republic, 2004.
- <sup>30</sup> Government of The former Yugoslav Republic of Macedonia, 2010.
- <sup>31</sup> Government of Montenegro, 1983.
- <sup>32</sup> Government of Nepal, 2014.
- <sup>33</sup> Government of the Philippines, 2013.
- <sup>34</sup> Government of Serbia, 2010.
- <sup>35</sup> Government of Sri Lanka, 2010.
- <sup>36</sup> Government of the United States of America, 2009. 16 CFR § 1303.1.
- <sup>37</sup> Government of Switzerland, 2005.
- <sup>38</sup> Government of Thailand, 2014.
- <sup>39</sup> Government of Argentina, 2009.
- <sup>40</sup> Government of Brazil, 2008.
- <sup>41</sup> Government of Chile, 1997.
- <sup>42</sup> Government of Costa Rica, 1995.
- <sup>43</sup> Government of Dominica, 2007.
- <sup>44</sup> Government of Jordan, 2002.
- <sup>45</sup> The 600 ppm limit applies only to toys and school supplies in Mexico. Government of Mexico, 1994.
- <sup>46</sup> Government of Oman, 2008.
- <sup>47</sup> Government of Panama, 1996. Art. 24.
- <sup>48</sup> Government of South Africa, 2009.
- <sup>49</sup> Government of the Republic of Korea, 2008.
- <sup>50</sup> Government of Uruguay. 2004.
- <sup>51</sup> Government of Trinidad and Tobago, 2012.
- <sup>52</sup> Algeria's law establishes a 90 ppm limit for "finger paints", but a 5000 ppm limit for other paints. Government of Algeria, 1997.
- <sup>53</sup> Australia has a 1,000 ppm limit on lead paint. Government of Australia, 2015.
- <sup>54</sup> Armenia has a 5,000 ppm limit on lead paint. 2014. Government of Armenia, 2014.
- <sup>55</sup> SAICM Report, 2015.
- <sup>56</sup> New Zealand has a 1,000 ppm limit on lead paint. New Zealand adopts Australia's Uniform Paint Standard as per Appendix I of the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) No. 20(2010). Government of New Zealand, 1998.
- <sup>57</sup> Zimbabwe has a 10,000 ppm limit on lead paint. Government of Zimbabwe. 2007.
- <sup>58</sup> Government of Fiji, 1971.
- <sup>59</sup> World Bank Data, <http://data.worldbank.org/country>
- <sup>60</sup> <http://www.oecd.org/about/membersandpartners/list-oecd-member-countries.htm>
- <sup>61</sup> For more info: [http://www.caricom.org/jsp/community/member\\_states.jsp?menu=community](http://www.caricom.org/jsp/community/member_states.jsp?menu=community)
- <sup>62</sup> Technical EIA Guidance Manual, 2010.
- <sup>63</sup> Planning Commission of India, 2012.
- <sup>64</sup> Government of the United States of America. CPSC § 1303.2. Available at: <https://www.gpo.gov/fdsys/pkg/CFR-2011-title16-vol2/pdf/CFR-2011-title16-vol2-sec1303-2.pdf>
- <sup>65</sup> Government of Sri Lanka, 2010.
- <sup>66</sup> WHO, 2011.
- <sup>67</sup> Deshommes, et al., 2012.
- <sup>68</sup> Agency for Toxic Substances and Disease Registry.
- <sup>69</sup> Government of Fiji, 1971.
- <sup>70</sup> Government of Russia, 2010.
- <sup>71</sup> Government of Venezuela, 2001.
- <sup>72</sup> Government of Australia, 2015.
- <sup>73</sup> Department of Environment and Natural Resources Management Bureau (Philippines.) 2015.
- <sup>74</sup> Government of Philippines. 2013. Sec. 4.
- <sup>75</sup> Government of the Republic of Korea, 2009.

- <sup>76</sup> Restricts use in the workplace by women and children under age 18. Government of Antigua and Barbuda, 1928.
- <sup>77</sup> Restricts use in the workplace by women and workers under age 18. Government of Belarus, 2000.
- <sup>78</sup> Under the Factories Act (Ch.99), 1971, the Ministry of Labour, Industrial Relations and Employment enacted the Lead Processes Regulations (LPRs). Government of Fiji, 1971.
- <sup>79</sup> Government of Dominica, 2010.
- <sup>80</sup> Restrictions on uses in areas in which people will work 8 or more hours per day. Government of Panama, 1996.
- <sup>81</sup> Government of South Africa, 2009.
- <sup>82</sup> The law restricts the use of lead in the workplace. Government of Venezuela.
- <sup>83</sup> Algeria establishes a 90 ppm limit for finger paints. Government of Algeria.
- <sup>84</sup> Law 11762/2008 fixes the maximum level of lead allowed in the manufacture of paints and child and school use, varnishes and similar materials and other measures. Government of Brazil.
- <sup>85</sup> Sec. 7.2 of the Surface Coating Materials Regulations states “furniture and other articles for children must not have a surface coating material that contains more than 90 mg/kg of total lead.” Sec. 7.3 states that “pencils and artist’s brushes must not have a surface coating material that contains more than 90 mg/kg/ of total lead.” Government of Canada, 2005.
- <sup>86</sup> Government of Chile, 1997. Art. 2.
- <sup>87</sup> Government of China, 2014.
- <sup>88</sup> Government of Costa Rica, 1995. Art. 2.
- <sup>89</sup> EU REACH Toy Safety Regulation 2009.
- <sup>90</sup> Government of Israel, 1994.
- <sup>91</sup> Sec. 4.1.6 imposes restrictions on furniture, paints, emulsions and enamels for exterior and interior of residential buildings, offices, schools, hospitals and kindergartens. Government of Mexico. 2013.
- <sup>92</sup> Government of Philippines. Sec. 4.
- <sup>93</sup> Government of South Africa, 2009.
- <sup>94</sup> Government of the Republic of Korea, 2009.
- <sup>95</sup> Government of Sri Lanka, 2010.
- <sup>96</sup> Government of the United States of America, 2009. 16 CFR § 1303.1
- <sup>97</sup> Government of Uruguay, 2004.
- <sup>98</sup> Government of Canada, 2005.
- <sup>99</sup> Government of China. 2008.
- <sup>100</sup> Government of Dominica, 2010.
- <sup>101</sup> Government of the Kyrgyz Republic, 2004.
- <sup>102</sup> Government of Mexico, 1994.
- <sup>103</sup> Government of Panama, 1996.
- <sup>104</sup> Government of Philippines, 2013.
- <sup>105</sup> Government of Russia, 2010.
- <sup>106</sup> The Occupational Health Lead Regulations prohibit the use of lead paint inside builds or on furniture. Government of South Africa, 2009.
- <sup>107</sup> Government of Sri Lanka, 2010.
- <sup>108</sup> Government of Thailand, 2016.
- <sup>109</sup> Architectural coatings used in interior and exterior applications (LPL does not apply to industrial coatings). Government of Trinidad and Tobago, 2012.
- <sup>110</sup> Regulation imposes restrictions on decorative and household use. Government of Uruguay, 2004.
- <sup>111</sup> Government of the United States of America, 2009.
- <sup>112</sup> When the substance or mixture is aimed to be used in paint, it cannot be put upon the market or used as a substance on its own or as a mixture. Government of Turkey, 2015.
- <sup>113</sup> The use of lead paint inside buildings or on furniture, and the removal of lead paint by scrapping or rubbing down by a dry process or by burning is forbidden. Also it is prohibited to use on toys or other children’s articles, furniture, or interior surfaces of any dwelling or facility, which may be occupied or used by children. Government of South Africa, 2009.
- <sup>114</sup> The law imposes restrictions on “marine use.” Government of Panama, 1996.
- <sup>115</sup> Government of Chile, 1997.
- <sup>116</sup> Government of Argentina, 2009.
- <sup>117</sup> Government of Brazil, 2008.
- <sup>118</sup> Government of Canada, 2005.
- <sup>119</sup> Government of Chile, 1997.
- <sup>120</sup> Government of China. 2014. GB30981-2014 Limit of harmful substances of anticorrosion coatings for construction steel structure.
- <sup>121</sup> Paragraph 4.3, Mexican Official Standard NOM-004-SSA1-2013, Environmental Health.
- <sup>122</sup> Government of South Africa.
- <sup>123</sup> Trinidad and Tobago Standard TTS 164:2011 (Architectural coatings – General requirements) does not apply to industrial coatings. Government of Trinidad and Tobago, 2012.
- <sup>124</sup> Government of Uruguay, 2004.
- <sup>125</sup> Government of the United States of America, 2009. 16 CFR § 1303.3(a)-(b).
- <sup>126</sup> Government of Argentina, 2009.
- <sup>127</sup> Government of Brazil, 2008.
- <sup>128</sup> The Surface Coating Material’s Regulation allows lead paint “as material for the purposes of art, crafts or hobbies, other than material for use by children.” (Sec. 4(g)). Government of Canada, 2005.
- <sup>129</sup> Government of Chile, 1997. Sec. 5(b).
- <sup>130</sup> Government of The former Yugoslav Republic of Macedonia, 2010.
- <sup>131</sup> Government of Montenegro, 1983.
- <sup>132</sup> Government of Panama, 1996.
- <sup>133</sup> Government of Serbia, 2010.
- <sup>134</sup> Government of Turkey, 2015.
- <sup>135</sup> Government of Uruguay, 2004.

- <sup>136</sup> Argentina's law provides exemptions for samples and temporary imports and in transit items. Government of Argentina, 2009.
- <sup>137</sup> Exemptions include dried powders/ paints for industrial use. Government of Dominica.
- <sup>138</sup> "Toys and parts of toys which, due to their accessibility, function, mass, size or other characteristics obviously exclude any hazard due to sucking, licking or swallowing bearing in mind the normal foreseeable behavior of children, are not covered by this part." Government of Israel, 1994.
- <sup>139</sup> Government of the United States of America, 2009. 16 CFR § 1303.3(c) - Exempts the following products from ban, without cautionary labeling: mirrors that are part of furniture articles to the extent they bear lead-containing backing paint, artists' paints and related materials, metal furniture articles (but not metal children's furniture) bearing factory-applied coatings. The restriction on the use of this type of paint is limited only to certain types of furniture.
- <sup>140</sup> Under REACH, the use of those lead compounds by "professionals" is allowed. Suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as: "*Restricted to professional users*"
- <sup>141</sup> UNEP, 2013.
- <sup>142</sup> Government of the United States of America, 2009. CPSA, 15 USC § 2069; FHSA, 15 USC § 1264; CPSA, 15 USC § 2070(a).
- <sup>143</sup> United Nations General Assembly, 2015.
- <sup>144</sup> 31 of the 33 Western European countries assessed adopted the EU REACH Regulation (see Appendix IV(a) for explanation). Switzerland established a different LPL than the EU REACH Regulation. Montenegro, Serbia, Kyrgyz Republic and The former Yugoslav Republic of Macedonia, 2010. have established a 90 ppm limit. Belarus has a 50 ppm limit. Armenia's LPC is 5000 ppm. Russia established a partial ban, but no numerical LPC. LPCs for Georgia, Azerbaijan, Uzbekistan and Turkmenistan were not found.
- <sup>145</sup> Argentina, Brazil, Chile, Costa Rica, Panama, Uruguay, and establish a 600 ppm limit. Mexico has a 100 ppm limit. Venezuela has a workplace restriction. LCLs were not found for the following countries: Bolivia, Guyana, and Nicaragua. Antigua and Barbuda, Dominica, and Trinidad and Tobago establish binding LPLs. No binding LPLs were found for Bahamas, Barbados, Belize, Cuba, Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, and St. Vincent and Grenadines. NOTE: Jamaica, Grenada, Antigua and Barbuda, and other Caribbean countries adopted the CARICOM voluntary standard, which also establishes a 600 ppm LPL (see Table 9 for explanation of CARICOM).
- <sup>146</sup> Israel established a 90 ppm limit. Oman and Jordan both established a 600 ppm limit. Turkey established a legally binding restriction on lead sulfates and lead carbonates. LPLs were not found for the following countries: Iran, Iraq, Kuwait, Qatar, Saudi Arabia
- <sup>147</sup> Fiji (workplace restriction), New Zealand (1000 ppm), Australia (1000 ppm), Thailand has a 100 ppm LPC, China has a 90 ppm limit, Philippines has a 90 ppm LPC. Nepal and Sri Lanka have a 90 ppm limit. The Republic of Korea has a 600 ppm. Turkey has a total ban with no numerical limit. LPLs were not found for the following countries: Bangladesh, Brunei, Cambodia, India, Indonesia, Mongolia, Democratic People's Republic of Korea, Cook Islands, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Papua New Guinea, Tonga, Tuvalu.
- <sup>148</sup> South Africa (600 ppm) and Zimbabwe (10,000 ppm). LPLs were not found in the following countries: Algeria, Angola, Benin, Botswana, Cape Verde, Chad, China, Equatorial Guinea, Eritrea, Guinea Bissau, Libya, Mauritania, Mozambique, Namibia, Niger, Nigeria, Sao Tome and Principe, Seychelles, Sierra Leone, Somalia, South Sudan, Togo, Zambia.





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