Preparing A Rotterdam Convention Notification To List Lead Chromates

A Reference and Guidance Paper

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IPEN
for a toxics-free future

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Glossary of Terms and Acronyms

Annex I. An annex to the Rotterdam Convention, titled "*Information Requirements for Notifications Made Pursuant to Article 5,*" which consists of a list of the information that every Notification of Final Regulatory Action submitted to the Convention **must** contain. (See Appendix 1 of this paper)

Annex II. An Annex to the Rotterdam Convention, titled "*Criteria for Listing Banned or Severely Restricted Chemicals in Annex III*," which specifies four Criteria a Notification of Final Regulatory Action must satisfy to list a hazardous chemical or family of chemicals in the Convention's Annex III. (See Appendix 2 of this paper)

Annex III. An Annex to the Rotterdam Convention, titled "*Chemicals Subject to the Prior Informed Consent (PIC) Procedure*," which is a list of the chemicals and closely related and other paint additives families of chemicals that are subject to the Convention's PIC procedure.

Binder. An ingredient in paints that physically binds pigment particles to one another and that makes the pigment particles adhere to a surface.

Chemical. For purposes of the Rotterdam Convention, the term "*chemical*" is defined to mean "*a substance whether by itself or in a mixture or preparation and whether manufactured or obtained from nature*."

Chemical Review Committee. An expert committee, established by the Rotterdam Convention, that meets annually and reviews Notifications of Final Regulatory Action to determine whether they satisfy the Convention's Listing Criteria, as specified in Annex II.

Conference of the Parties. the ruling body of the Rotterdam Convention; whose member are representatives of the governments that are Parties to the Convention; which usually meets biennially; and which makes the decision to list hazardous chemicals in the Convention's Annex III.

COP. An acronym for Conference of the Parties.

CRC. An acronym for Chemical Review Committee.

Criterion (b). One of the Convention's four Listing Criteria specified in Annex II which directs the CRC to "*Establish that the final regulatory*

action has been taken as a consequence of a risk evaluation. This evaluation shall be based on a review of scientific data in the context of the conditions prevailing in the Party in question."

Criterion (c). One of the Convention's four Listing Criteria specified in Annex II which directs the CRC to "*Consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III*."

Decision Guidance Document. A document drafted by the CRC and adopted by the COP whenever a decision is made to list a hazardous chemical in Annex III. It provides information about the characteristics of the listed chemical; how and why it came to be listed; and other information related to how the Convention's PIC procedure will be applied to the chemical.

DGD. An acronym for Decision Guidance Document.

FAO. An acronym for the Food and Agriculture Organization of the United Nations.

Final Regulatory Action. For Convention-related purposes, the term "*Final Regulatory Action*" is defined to mean "*an action taken by a Party that does not require subsequent regulatory action by that Party, the purpose of which is to ban or severely restrict a chemical*."

Information Requirements. The information specified in Annex I that every Notification of Final Regulatory Action must contain.

Intersessional Meeting. A meeting of a subsidiary body of the CRC that is held at times when the CRC is not in session.

Lead chromates. A family of synthetic, crystalline pigments that contain the chemical compound, lead chromate ($PbCrO_4$), in every crystal; that usually also contains the chemical compound, lead sulfate ($PbSO_4$), in every crystal; and that may contain the chemical compound lead molybdate ($PbMoO_4$) in every crystal. Lead chromates were developed for use as pigments in paints, but they are now also used as colorants in plastics. They have had some other traditional uses, but these now appear to be very minor, or obsolete.

Listing Criteria. Four criteria specified in Annex II, which Notifications of Final Regulatory Action must satisfy for the CRC to recommend to the COP that it list the notified chemical in Annex III.

Masterbatch. A polymer or other resin that serves as a carrier for concentrated pigments and/or other additives that will be used to colorize plastics and/or to impart other properties.

Mixture. A combination of two or more substances that are not chemically combined. For Rotterdam Convention-related purposes, whenever the term "*chemical*" is used, it applies not only to the chemical itself, but also to the chemical when it is contained in a *mixture.*

Notification. The Rotterdam Convention states that "*Each Party that has adopted a final regulatory action shall notify the Secretariat in writing of such action*." The written material a Party submits in response to this request is usually referred to as a "*Notification*" or as a "*Notification of Final Regulatory Action.*" It typically consists of a completed *Notification Form* together with any supporting documents.

Notification Form. A form that a Party can download from the Convention's website (and that is attached to this paper as an appendix). The Secretariat requests that Parties use this form when they submit their Notifications.

Party. A government that has ratified or acceded to a convention is frequently referred to as a "*Party.*

PIC. An acronym for Prior Informed Consent.

Pigment. A colored (including black and white) solid particulate material that is insoluble in, and chemically unaffected by, the vehicle or substrate in which it is incorporated.

Prior Informed Consent (PIC) procedure. A legally binding mechanism for formally obtaining and disseminating the decisions of importing Parties as to whether they wish to receive future shipments of those chemicals listed in Annex III. It ensures that restricted hazardous chemicals are not exported to countries that do not wish to receive them.

Rotterdam Convention. A legally binding intergovernmental treaty, with 165 government Parties, whose full name is the "*Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade*."

Rotterdam Convention text. 30 Articles and eight Annexes prepared by an intergovernmental negotiating committee; adopted by governments

and a diplomatic conference; and ratified or acceded to by 165 national governments as of July 2023. These governments – called *Parties* – are legally bound to adhere to the provisions spelled out in the Convention's text.

Secretariat. The Convention's professional staff. It organizes the Convention's operations, its PIC procedure, and the meetings of its COP, its committees, their subsidiary bodies. It is based in Geneva, Switzerland, and is jointly served by UNEP and FAO.

Solvent. An ingredient in paints into which pigments and binders are mixed. The solvent allows the paint to be easily and evenly applied to a surface, and it then evaporates leaving the pigments and binders as a dry paint film.

Supporting Documents. Documents that provide information additional to what is presented in the *Notification Form*. The supporting documents may be submitted to the Secretariat together with the *Notification Form*, and/or they may be referenced (in a way the CRC can access them) in the *Notification Form*.

TEL. An acronym for the chemical compound tetraethyl lead.

TML. An acronym for the chemical compound tetramethyl lead.

Tetraethyl lead and tetramethyl lead. Two chemical compounds that were once commonly used as anti-knock additives in automotive and other fuels.

UNEP. An acronym for the United Nations Environment Programme.

Verify. After the Convention Secretariat reviews Notifications, it receives to determine whether they contain all the information that is specified in Annex I (on Listing Requirements), and if all the required information has been provided, the secretariat will "*verify*" the Notification.

WHO . An acronym for the World Health Organization.

Introduction

This paper is intended as a guidance and reference document for those engaged in promoting a Rotterdam Convention decision to list lead chromates in its Annex III.

It discusses why and how many of the governments that recently adopted lead paint control laws can – if they wish – submit Notifications to the Rotterdam Convention that nominate lead chromates for a Convention listing.

The paper discusses how to address several of the challenging issues that may arise when a government of a low- or middle-income country that recently adopted a lead paint control law decides it might be interested in preparing a Notification to the Rotterdam Convention.

It is the second in series of three papers on topics that should be helpful to those interested in promoting a Rotterdam Convention decision to list lead chromates. It should also be helpful to those engaged in preparing (or helping prepare) Rotterdam Convention Notifications.

All three papers focus on topics and solutions that are most relevant to low- and middle-income countries.

The first paper in this series is titled: *Controlling Lead Chromate Pigments: The Case for a Rotterdam Convention Listing.* Its topics are: What are Lead Chromates; The Lead Chromate Hazard; Uses of Lead Chromates; and the Impact of a Rotterdam Convention Listing.

A third paper in this series, provisionally titled *Preparing a Notification that can Satisfy the Rotterdam Convention's Criterion (b),* will be available soon, and will build on topics that are presented in the present paper. The third paper will address how to prepare a Rotterdam Convention Notification that should be able to fully satisfy all the elements of the Convention's Criterion (b). Its primary focus will be how to prepare the supporting documents that will accompany the Notifications when they are submitted.

Topics addressed in this paper:

- Why many of the countries that recently adopted lead paint controls can notify the Rotterdam Convention that their regulatory action severely restricts lead chromates. And why, because of this, they are eligible to nominate lead chromates for a Rotterdam Convention listing.

- The process the convention will use in deciding whether to list lead chromates.

- Why many of the countries that recently adopted lead paint controls can state that they did so based on a risk evaluation. And why their risk evaluations should be able to satisfy the Convention's Criterion (b).

- Why the Convention's PIC procedure should apply not only to lead chromates in their powder form, but also to international trade in paints that contain lead chromate pigments. And the information a Notification can contain to help ensure this happens.

- How a Notification can satisfy the Convention's Criterion (c). And how, in doing this, the notification will demonstrate that the country imposed a sufficiently severe restriction on lead chromates to justify a decision to list them in the Convention's Annex III.

This, and the other two papers in this series, have been prepared by the Lead Paint Campaign Team of the International Pollutants Elimination Network (IPEN).

IPEN and its Participating Organizations have been actively promoting the global elimination of all manufacture, sales, and use of lead paints since 2007. IPEN is also a founding member of the Global Alliance to Eliminate Lead Paint and of its Advisory Committee.

1. Can Countries that Adopted Lead Paint Controls State that they took a Final Regulatory Action to Severely Restrict Lead Chromates?

The Rotterdam Convention is an international treaty that operates a legally binding Prior Informed Consent (PIC) procedure, which could be applied to lead chromates. IPEN is working with NGOs in several countries that recently adopted lead paint control regulations and who are encouraging their governments to nominate lead chromates – the predominant ingredient in lead paint – for listing by the Rotterdam Convention.

This raises the question: Did countries that recently adopted lead paint control laws severely restrict lead chromates?

In most cases, the answer is yes.

Most of the low- and middle-income countries that recently adopted legally binding controls on the lead content of paints can – for Rotterdam Convention-related purposes – validly state that they took a "*final regulatory action to severely restrict lead chromates*."

The Rotterdam Convention defines the term "*Final Regulatory Action*" to mean "*an action taken by a Party … the purpose of which is to ban or severely restrict a chemical*."[1] And the Convention's Article 5 states that "*Each Party that has adopted a final regulatory action shall notify the Secretariat in writing of such action*."

If some of the countries that recently adopted lead paint controls decide to submit Notifications of these regulatory actions to the Rotterdam Convention Secretariat, and if the Notifications they submit are in the form of a *Notification of final regulatory action to severely restrict lead chromates*, this will initiate a formal process in which the Convention will consider and decide whether international trade in lead chromates should become subject to the Convention's Prior Informed Consent (PIC) procedure.

1.1 The decision to list TEL and TML established an important precedent.

In 2004, the Rotterdam Convention agreed to list tetraethyl lead (TEL) and tetramethyl lead (TML) in its Annex III based on Notifications submitted

[1] The Convention's full text (in all UN languages) can be found at: https://www.pic.int/TheConvention/Overview/TextoftheConvention/tabid/1048/

by Canada and the European Union which detailed the regulatory actions both countries took to control the lead content of automotive fuels. In doing this, the Convention established a precedent that should apply when Notifications are submitted by countries that have taken regulatory action to control the lead content of paints.

TEL and TML are lead compounds that were once commonly used as anti-knock additives in leaded fuels (gasoline). When the Convention decided to list them (in its Annex III), it approved a *TEL/TML Decision Guidance Document* (DGD) which, among other things, explains how and why the Convention made its decision to list them.[2]

When the TEL/TML DGD describes the regulatory actions taken to control the lead content of automotive fuels, the first sentence of its description of both Canada's and the EU's regulatory actions are identical. Both state: "*The final regulatory action restricts the use of leaded gasoline and limits the concentration of TEL and TML in leaded gasoline*."[3]

According to the TEL/TML DGD – and based on a review of the regulatory actions Canada and the EU took to control the lead content of automotive fuels – the Convention concluded that: "*Tetraethyl lead and tetramethyl lead* ***have been severely restricted*** *as industrial chemicals by both notifying Parties."*[4]

As will be discussed in more detail below, the Rotterdam Convention can be expected to follow the precedent that was established when it agreed to list TEL and TML. And if it does, it should (in most cases) also conclude that when low- and middle-income countries took regulatory action to control the lead content of paints, they severely restricted the use of lead chromates as industrial chemicals.

1.2 A Rotterdam listing contributed to the phase-out of TEL and TML.

Leaded gasoline and lead paints are, historically, two of the most widespread sources of human exposure to lead. In 2002, heads of state attending the World Summit on Sustainable Development (WSSD) adopted the Johannesburg Plan of Implementation which, among other things,

[2] See the Rotterdam Convention *Decision Guidance Document: Tetraethyl lead and tetramethyl lead*, http://www.pic.int/Portals/5/download.aspx?d=UNEP-FAO-RC-DGD-GUID-TML-2005.En.pdf

[3] See the TEL/TML DGD (cited above) Section 2.1

[4] See DGD Section 2. *Reasons for inclusion in the PIC procedure*

called for phasing out lead from **both** leaded gasoline **and** lead-based paints.[5]

Soon after the WSSD, the United Nations Environment Programme (UNEP) established an international partnership to promote the global phase out and elimination of lead from automotive fuels. This partnership achieved its goal in less than twenty years. The last liter of leaded fuel for ordinary automotive use sold anywhere in the world was sold in 2021 in Algeria.

Although several factors contributed to the successful global phase-out of leaded automotive fuels, one of them was the Rotterdam Convention's decision to list TEL and TML in its Annex III and make them subject to its PIC procedure. The PIC procedure's provisions then made it easier for governments and others to track and control international trade in TEL and TML. It also enabled and encouraged governments to control and prevent imports of TEL and TML.

1.3 Similarities between TEL/TML and lead chromates.

TEL and TML are lead compounds used as additives to enhance a fuel's performance. Lead chromates are more than additives. They are primary paint constituents[6] that give a paint product its color. They also contribute to a paint's opacity; its anti-corrosive and/or other protective properties (such as UV protection and others); its durability and weathering properties; and more. Both TEL/TML and lead chromates are synthetic chemical substances.

Lead chromates are the predominant source of lead in lead paints.[7] They have been manufactured since the early 19th century, and they have

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[5] See *Plan of Implementation of the World Summit on Sustainable Development*, paragraphs 56 and 57, https://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf

[6] Pigments can be viewed as a paint product's most important active ingredient. According to a paint company website: "*All paints generally have four main ingredients -- pigments, binders, solvents (liquids) and additives*. Pigments provide color and hide, while binders work to 'bind' the pigment together and create the paint film. Solvents are the liquids that suspend the ingredients and allow you to place the paint on the surfaces, and additives are ingredients that provide specific paint properties such as mildew resistance." See: *What Is Paint Made of*; 06/02/2013; Dunn Edwards Paints; https://www.dunnedwards.com/pros/blog/whats-in-your-paint/

[7] The only other current sources of lead in lead paints are **lead tetroxide** (usually called "*red lead*" or "*minium*") and **leaded driers**.

- ✓ Paints (or primers) made with **lead tetroxide** pigments are used to protect iron and steel surfaces from rust. These paints are extremely hazardous because they typically contain high lead concentrations (often more than 100,000 parts per million of lead in the dry paint film). But they are not as widespread as are paints that contain lead chromate pigments.
- ✓ **Leaded driers** are still commonly used in solvent-based paints to accelerate drying and to affect the paint's surface properties. Driers, however, are added to paints in relatively small quantities as compared to the amount of pigment a paint contains (usually by an order of magnitude or more). And therefore, the contribution of leaded driers to the total amount of lead that is present in lead paints is very much less that of lead chromates.

always been mainly used as yellow, orange, and red pigments in the production of paints.

Many of the governments that recently took regulatory action to control lead in paints did so by establishing a maximum permissible limit on the total lead content of the dry paint film.[8] The maximum limits that were established effectively prohibit the use of lead chromate pigments as ingredients in the production of the paint, and they also effectively prohibit the sale of a paint that contains lead chromate pigments as intentional ingredients.[9]

Similarly, TEL and TML are the predominant source of the lead in leaded fuels. Canada's and the EU's regulatory controls established maximum permissible limits on the concentration of lead in fuels that could be sold for automotive use. By doing this, they effectively prohibited the use of TEL and TML as additives in the fuels. And they also prohibited the sale of automotive fuels that contain TEL or TML as ingredients.

The regulatory mechanism Canada and the EU used to severely restrict TEL and TML is essentially the same as the regulatory mechanism many low- and middle-income countries used to severely restrict lead chromates. The only real difference is that Canada and the EU established the maximum allowable lead concentrations in automotive fuels, as measured in milligrams lead per liter of gasoline,[10] while most low- and middle-income countries established the maximum allowable lead concentrations in paints, as measured in parts per million total lead in the dry paint film.

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[8] All lead pigments are more than 50% lead, by weight. Many countries established a maximum allowable limit of lead in paints of 90 ppm total lead in the dry paint film (0.009% by weight of the total non-volatile content of the paint). (Some established higher limits.) UNEP, the US Government, and others recommended this regulatory approach because it effectively disallows the intentional use of lead compounds as ingredients in paints. This is because the amount of lead pigment required to influence a paint's color and/or some other desired property will result in total lead content much greater than 90 ppm. This approach also disallows paints that contain more than trace quantities of unintended lead contaminants. And it makes compliance monitoring relatively easy because good analytical methods are available for determining total lead content, while very complicated analyses would be needed to perform both qualitative and quantitative analysis for a list of proscribed lead compounds. See UN *Model Law and Guidance for Regulating Lead Paint*, https://www.unep.org/resources/publication/model-law-and-guidance-regulating-lead-paint

[9] When a paint manufacturer decides to use a lead chromate pigment (or pigments) as an intentional ingredient, it does so to give the paint product a desired color and/or some other desired property or properties. The amount of lead chromate needed to meaningfully influence a paint's color and/or its other desired properties, however, will increase the total lead content (in the dry paint film) to a level that will exceed 90 ppm total lead content of the dry paint film. (It will also exceed a maximum limit of 600 ppm total lead.)

[10] See the TEL/TML DGD (cited above) Section 2.1 Final regulatory action

The TEL/TML DGD states that both Canada's and the EU's regulatory actions allowed for exemptions.[11] Neither country (at that time) imposed any restriction on the sale and use of leaded "*aviation gasoline."* Canada's notified regulation additionally imposed no restrictions on leaded gasoline for use in high performance competition vehicles. Canada's regulation also permitted the use of limited amounts of TEL and TML as additives in fuels for farm equipment, boats, and heavy trucks.

It should be noted that the regulatory action taken by the EU, and especially the regulatory action taken by Canada, included exemptions that allowed substantial uses of TEL and TML to continue. Despite these substantial continuing uses, however, the Rotterdam Convention concluded that: "*Tetraethyl lead and tetramethyl lead have been severely restricted as industrial chemicals by both notifying Parties."*[12]

If the Rotterdam Convention follows its TEL/TML precedent, it should conclude that a country's regulatory action to control lead in paint – even if it allows non-paint uses of lead chromates to continue – can still be considered as a severe restriction on lead chromates as industrial chemicals.

1.4 Insights from the TEL/TML DGD and the precedents it established.

Based on the DGD's descriptions of Canada's and the EU's regulatory actions, and based on the conclusions the Convention reached after its review of those regulatory actions, it appears reasonable to expect that:

- **If** country XYZ – which recently took regulatory action to control the lead content of paints – decides to submit a Notification of this regulatory action to the Rotterdam Convention, and
- **If** the regulatory mechanisms the country used to control the lead content of paints were sufficiently similar to those used by Canada and the EU to control the lead content of automotive fuels, and

- **If** the Notification describes the regulatory actions in a way that highlights these similarities, and

- **If** the Convention follows the precedents that it established when it concluded, based on Canada's and the EU's regulatory actions, that: "*Tetraethyl lead and tetramethyl lead have been severely restricted as industrial chemicals by both notifying Parties,*"

[11] Ibid

[12] This quote appeared and was footnoted earlier in the paper.

- **It then follows that**, if country XYZ prepares the Notification as a *Notification of Final Regulatory Action to Severely Restrict Lead Chromates*, the Secretariat should accept the Notification and it should review the Notification as such.

A comparison between the regulatory actions many countries recently took to control lead in paints and those taken by Canada and the EU to control leaded gasoline highlights the numerous similarities:

- The government took a regulatory action because it recognized that lead in the product (in one case fuel, in the other case paint) is a significant source of human exposure to lead.

- The regulatory action the government took established a maximum allowable limit on the total lead content of the product (maximum milligrams of total lead per liter in the fuel; maximum ppm total lead in the dry film of the paint).

- The government decided (and may have been advised) to achieve its regulatory objective by establishing a maximum allowable limit on the total lead content of the product because it is an efficient (and relatively easy to monitor) way to control and prevent the use of a lead compound as an intentional ingredient in a product (TEL and TML in fuels; lead chromates in paints).

- The regulatory action did not ban all uses of the targeted hazardous chemicals (TEL and TML in the case of fuel regulations; lead chromates in the case of paint regulations). It allowed some significant uses to continue (TEL and TML was still used in some fuels/lead chromates are still used as colorants in plastics).

- The Convention, nonetheless, classified Canada's and the EU's restrictions on TEL and TML as *severe restrictions*. And, as compared to the quantity and uses of TEL/TML that Canada (and to a lesser extent, the EU) allowed to continue, the lead paint controls adopted by many low- and middle-income countries were as restrictive of lead chromates or even more restrictive.[13]

[13] Chapter 5 of this paper discusses how the Notification can provide sufficient information to enable the CRC to conclude that the regulatory action was sufficiently severe to justify a decision to list lead chromates in Annex III.

1.5 Conclusion.

As noted above, the Rotterdam Convention defines the term "*Final Regulatory Action" to mean an action taken by a Party "… the* ***purpose*** (emphasis added) *of which is to ban or severely restrict a chemical."*

When the Convention agreed to list TEL and TML, it established a precedent that should be sufficient for the Convention to agree that a *purpose* of the country's regulatory controls on lead paint was to severely restrict lead chromates.

It would, therefore, be valid and appropriate for many of the countries that recently enacted lead paint control laws to prepare and submit a Rotterdam Convention Notification of *Final Regulatory Action to Severely Restrict Lead Chromates*. And if the Notification provides all the information specified in the Convention's *Listing Requirements,* the Secretariat will verify the Notification and forward it to the Convention's Chemical Review Committee (CRC) for its review.

(CRC will, among other things, consider whether the restriction the regulatory action imposes on lead chromates is sufficiently severe to justify a Convention listing. Chapter 5 of this paper discusses how countries can prepare Notifications that will help the CRC to conclude that it was.)

2. The Convention's Process for Deciding Whether to List Lead Chromates

As discussed in Section 1 above, many of the countries that recently adopted lead paint control laws can validly submit Rotterdam Convention Notifications of Regulatory Action to Severely Restrict Lead Chromates. When countries submit such Notifications, a formal process will be initiated in which the Convention will consider and decide whether to list lead chromates in its Annex III and make international trade in lead chromates subject to the Rotterdam Convention's Prior Informed Consent (PIC) procedure.

2.1 Summary of the listing process.

The process by which the Rotterdam Convention considers and decides whether to list a hazardous chemical is started when Parties to the Convention submit – and when the Secretariat receives – Notifications of regulatory action to ban or severely restrict a hazardous chemical (or a closely-related family of hazardous chemicals) for human health and/or environmental reasons.[14]

- **If** the Convention receives multiple Notifications of Final Regulatory Action that address the same hazardous chemical (or family of hazardous chemicals), and

- **If** these Notifications were submitted by at least one Party-government from each of at least two regions, and

- **If** these Notifications are found to satisfy all of the Convention's *Information Requirements*, as specified in the Convention's *Annex I*, and

- **If** these Notifications are also found to satisfy all of the Convention's *Listing Criteria*, as specified in the Convention's *Annex II*,

- **Then**, the Notifications will be forwarded to the Convention's Conference of the Parties (COP) to make the final decision.

2.2 The Convention's listing process in more detail.

The process by which the Rotterdam Convention determines whether to list a hazardous chemical and make it subject to its PIC procedure is specified in the Convention's Articles 5 and 7. The process is additionally

[14] The process is specified in the Convention's Articles 5 and 7, with references to the Convention's Annexes I and II. See the Convention's text (in all UN languages) at: https://www.pic.int/TheConvention/Overview/TextoftheConvention/tabid/1048/

influenced by the Convention's past practices; the precedents it has established; and guidance documents the Convention has prepared and approved.[15]

The Rotterdam Convention's listing process has the following steps:

Notification. When a government that is Party to the Rotterdam Convention takes a regulatory action that bans or severely restricts a hazardous chemical for health and/or environmental reasons, it is expected to notify the Rotterdam Convention Secretariat of this.[16] The Convention has a standard *Notification Form* that a government is expected to use when it submits its Notification of Regulatory Action.[17] The government is also expected to submit certain supporting documentation.

Verification. When the Convention's Secretariat receives a Notification of Regulatory Action submitted by a Party government, it reviews the Notification to verify that it contains all the information that is specified in the Convention's Annex I.[18]

- Paragraph 1 of Annex 1 specifies information about the "*properties, identification and uses*" of the notified hazardous chemical (or family of hazardous chemicals) that the Notification must contain.

- Paragraph 2 of Annex I specifies the information about the "*final regulatory action*" that the Notification must contain, including information about: the regulation itself; the risk evaluation used to justify the regulation; the regulation's effectiveness in banning or severely restricting the notified chemical; and the relevance of the restriction to other countries and regions.

If the Secretariat receives at least one Notification from each of at least two regions[19] that describe a regulatory action that bans or severely

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[15] The most important of these is the Convention's: *Handbook of working procedures and policy guidance for the Chemical Review Committee*; *Working Procedures,* https://www.pic.int/TheConvention/ChemicalReviewCommittee/Guidance/tabid/1060/ctl/Download/mid/14721/language/en-US/Default.aspx?id=1&ObjID=47480

[16] Article 5, paragraph 1.

[17] The Rotterdam Convention's *Form for Notification of Final Regulatory Action to Ban or Severely Restrict a Chemical* can be downloaded at http://www.pic.int/Portals/5/eForms/hardcopy/FRA%20simple%20word%20form_E.doc

[18] Article 5, paragraph 3.

[19] For the purpose of determining whether at least one Notification has been received from at least two different regions, the Convention defines seven Prior Informed Consent (PIC) regions. A list of the PIC regions and the countries in them can be found at https://www.pic.int/Countries/PICRegions/tabid/1070/language/en-US/Default.aspx

restricts the same chemical (or family of chemicals); and if the Secretariat has verified that these Notifications satisfy all of the Annex I Information Requirements; it will forward the verified Notifications to the Convention's Chemical Review Committee (CRC) for its review.[20]

Intersessional CRC Activities. In advance of CRC meetings, and to facilitate their work, the Secretariat circulates verified Notifications and their supporting documents to the CRC's members and offers them an opportunity to comment in writing.

Task Groups. The Secretariat can establish intersessional task groups to review written comments that have been received for Notifications that nominate the same hazardous chemical (or family of chemicals). After reviewing the comments, the Task Group prepares a report with recommendations for consideration by the CRC as a whole. The Secretariat, typically, establishes a task group if it has received and verified Notifications of regulatory actions that ban or severely restrict the same chemical (or family of chemicals), and that were submitted by at least one country from each of at least two regions.[21]

CRC Review. If the Secretariat has received and verified Notifications from at least one country in each of at least two regions that nominate the same chemical, the CRC will review these Notifications at its *next meeting*. When it does this, it will consider the written comments that have been submitted by CRC members and the report of the Task Group (which previously reviewed the written comments). The CRC then considers each of the Convention's four listing criteria, one by one, and it determines whether the Notifications under review have satisfied each of them.

> *The Four Listing Criteria.* The *Listing Criteria* are specified in the Convention's Annex II, which is titled: "*Criteria For Listing Banned or Severely Restricted Chemicals in Annex III*." They are generally referred to as Criterion (a); Criterion (b); Criterion (c); and Criterion (d). Notifications from countries that regulated lead paint will easily satisfy criteria (a) and (d):
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> - *Criterion (a)* requests the Convention's Chemical Review Committee (CRC) to "*confirm that the final regulatory action has*

[20] Article 5, paragraph .5

[21] For more information about the task groups see: *Handbook of working procedures and policy guidance for the Chemical Review Committee*; *Working Procedures*; Sections 1.6 and 1.7; pages 34 and 37. https://www.pic.int/TheConvention/ChemicalReviewCommittee/Guidance/tabid/1060/ctl/Download/mid/14721/language/en-US/Default.aspx?id=1&ObjID=47480

been taken in order to protect human health or the environment," and

- *Criterion (d)* requests the CRC to "*Take into account that intentional misuse is not in itself an adequate reason to list a chemical in Annex III.*"

Some work, however, will be needed to prepare Notifications of *final regulatory action to severely restrict lead chromates* that can fully satisfy Criteria (b) and (c):

- *Criterion (b)* instructs the CRC to determine whether the final regulatory action was taken as a consequence of a risk evaluation; whether the risk evaluation was based on a review of scientific data in the context of the conditions prevailing in the notifying country; and whether the data and findings the risk evaluation relied upon were generated and documented according to generally recognized scientific methods, principles, and procedures. (How the Notification can satisfy Criterion (b) is discussed in Chapter 3 below.)

- *Criterion (c)* instructs the CRC to "*Consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III*." And when the CRC considers Notifications of final regulatory action to severely restrict lead chromates, it will primarily consider whether the restrictions that the notifying countries imposed on lead chromates were sufficiently severe to justify their being listed. (How the Notification can satisfy Criterion (c) is discussed in Chapter 5 below.)

CRC Recommendation. If the CRC determines that at least one Notification from each of at least two regions satisfies all elements of all of the four Listing Criteria, it will recommend to the Convention's Conference of the Parties (COP) that the chemical(s) in question be listed in Annex III and made subject to the Convention's PIC procedure.[22] The CRC will also prepare a draft Decision Guidance Document (DGD) for consideration by the COP.[23]

COP Decision. When the CRC recommends a hazardous chemical be listed in Annex III, both the recommendation and the draft DGD are placed on the agenda of the *next meeting* of the Rotterdam COP for its

[22] Article 5, paragraph 6
[23] Article 7, paragraph 1

consideration and decision. When the COP meets, it may establish a contact group to discuss the CRC's recommendation, and to consider possible revisions to its draft DGD. After completing its work, the contact group reports back to the full COP, which then decides whether the notified hazardous chemical(s) should be listed in Annex III. If it decides in favor of listing, the COP will additionally adopt a Decision Guidance Document that contains information about how the listing decision was made; about the characteristics of the listed chemical (or family of chemicals); and other information about how the Convention's PIC procedure will be applied to the listed chemical(s).[24]

[24] Article 7, paragraph 2

3. Many Countries that Adopted Lead Paint Controls Performed Risk Evaluations That Can Satisfy Criterion (b).

Of the Convention's four *Listing Criteria*, Criterion (b) has been, by far, the most difficult for notifying countries to satisfy. This has been especially true for many low- and middle-income countries.

For a Notification to fully satisfy Criterion (b), it must:

- State that the notified regulatory action was taken as a consequence of a risk evaluation, and it must provide the information needed to demonstrate that this is, in fact, true,

- Demonstrate that the risk evaluation appropriately took into account the prevailing conditions in the notifying country, and

- Provide the documentation needed to demonstrate that the data and scientific findings that risk evaluation relied upon were based on generally recognized scientific methods, principles, and procedures.

3.1 Was the regulatory action taken as a consequence of a *Risk Evaluation*?

The Rotterdam Convention has a standard *Notification Form* that countries are expected to use when they submit Notifications. The *Notification Form's* Section 2.4, asks: "*Was the final regulatory action based on a risk or hazard evaluation*?" And if the answer given is *yes,* the *Notification Form* additionally asks the notifying government to provide a:

- Summary description of the risk (or hazard) evaluation (in Section 2.4.2), and

- Reference or provide a copy of "*relevant documentation, which describes the risk* (or hazard) *evaluation*" (in Section 2.4.1)

If a Notification does not answer, "yes" in Section 2.4 of the *Notification Form*, or if it fails to provide the (2.4.2) summary description, or the (2.4.1) relevant documentation, the Secretariat will **not verify** that the Notification satisfies the Convention's *Information Requirements*. And if the Notification is not verified, it will not proceed further.

Therefore, a low- or middle-income country government that recently adopted lead paint controls and that wishes to prepare and submit a Notification that nominates lead chromates for a Rotterdam Convention listing, must:

1. Prepare a Notification which validly states that the regulatory action was taken as a consequence of a risk evaluation.

2. Prepare a summary description of its risk evaluation, and also prepare the necessary supporting documentation that together are sufficient to demonstrate that its risk evaluation satisfies all the elements of the Convention's Criterion (b).

In IPEN's view, many of the low- and middle-income countries that recently adopted lead paint controls should be able to do both.

3.2. What does the term *Risk Evaluation* mean?

Some may be hesitant to state that their country's regulatory action to control the lead content of paints was taken as a consequence of a risk evaluation. This hesitancy is often based on a lack of clarity about what the term *Risk Evaluation* – as it appears in the text of the Rotterdam Convention – should be understood to mean.

The reason for this lack of clarity is that there is no authoritative, internationally agreed definition or description of **exactly what** the term *Risk Evaluation* means. Risk evaluations are performed differently, in different countries, and/or for different purposes.

The term "*risk evaluation*" appears only two times in the Rotterdam Convention's text, both times in Annex II, Criterion (b):

1. In its introductory paragraph, Criterion (b) instructs the Chemical Review Committee to "*Establish that the final regulatory action has been taken as a consequence of a risk evaluation.*"

2. In its subparagraph (iii), Criterion (b) instructs the CRC to verify that the documentation provided by the notifying country demonstrates that: "*The final regulatory action was based on a risk evaluation involving prevailing conditions within the Party taking the action*."

The Rotterdam Convention has an Article 2 (titled *Definitions*) which defines what several other terms that appear in the Convention's text should be understood to mean "*for the purposes of this Convention*." Terms that are defined in Article 2 include *chemical*, *final regulatory action*, *export*, and *import*. However, although the Convention uses the term *risk* evaluation in Annex II, Criterion (b), it does not provide any definition of what this term should be understood to mean for Convention-related purposes.

Although those who drafted and negotiated the Convention's text had the opportunity to include a definition of the term "*risk evaluation*" when they drafted and finalized the text of Article 2 (on *Definitions*), they declined to do so. And this was likely neither an accident nor an oversight.

Those who drafted and agreed to the Convention's final text understood that there exists no internationally accepted definition of what, exactly, the term "*risk evaluation*" should be understood to mean. Not only do different governments evaluate risks to human health differently, different agencies, authorities, and entities within a single country often define and use the term "*risk evaluation*" in different ways for different purposes and/or in different contexts.

Governments – and often different agencies within the same government –evaluate risks to human health according to their own national laws and traditions; according to the specific purpose for which the evaluation is being made; and in ways that are appropriate to their national conditions and capabilities. Additionally, risk evaluations performed in different countries may use different standards for weighing the evidence; for dealing with scientific uncertainties; and/or for establishing who bears the burden of proof.

For the above reasons (and more), it would have been difficult for those who drafted and negotiated the provisions of the Rotterdam Convention to reach a consensus agreement on a concise and useful definition of the term *risk evaluation* for inclusion in Article 2.

Instead, when governments developed the Rotterdam Convention and its provisions, they agreed on text for Annex II Criterion (b) that **speaks for itself** (without further elaboration). For Convention-related purposes, therefore, a valid *risk evaluation* can be understood to mean any process or procedure used to evaluate the human health and/or environmental risk that fully satisfies all the elements of Criterion (b).
Later on, when the Convention prepared a *Handbook of working procedures and policy guidance for the Chemical Review Committee*,[25] it slightly elaborated on the Criterion (b) text to say:

> "*Under the Rotterdam Convention, it is generally agreed that a risk evaluation is neither hazard assessment nor risk assessment but something in between. Risk evaluation comprises information on*

[25] See *Handbook*; Working paper on the application of criteria (b) of Annex II; page 67. https://www.pic.int/TheConvention/ChemicalReviewCommittee/Guidance/tabid/1060/ctl/Download/mid/14721/language/en-US/Default.aspx?id=1&ObjID=47480

hazard and exposure. This means that risk evaluation is an evaluation of intrinsic toxicological and ecotoxicological properties and actual or expected relevant exposure, which may include information on actual incidents. In notifications of final regulatory actions to ban or severely restrict a chemical:

a) Information on hazard is generally based on internationally accepted toxicological or ecotoxicological data, which are considered not to be area-/ country-/ location-specific.

b) *Information on exposure is to be related to the prevailing conditions of use in the notifying Party*."

In conclusion, the only authoritative sources of information about what should be considered to be a valid *risk evaluation* for Rotterdam Convention-related purposes is the text of Annex II Criterion (b) and the *Handbook's* elaboration on this text.

3.3 Preparing a Notification that can satisfy the Convention's relevant Information Requirements.

Almost all the low- and middle-income countries that recently adopted regulatory controls on the lead content of paints did so based on their government's understanding that, in the absence of regulatory controls, sales and use of lead paints would continue, and this would likely result in significant harm to the country's human health.

In most cases, governments reached this understanding based on a process in which some national entity considered available, science-based information; reached the conclusion that exposure to lead from lead paint poses an unacceptable risk to the country's human health; and conveyed this conclusion to those who had the necessary, regulatory decision-making authority. *The process by which the evidence was considered, and the conclusion was reached can reasonably be called a "risk evaluation."*

Most governments that recently adopted lead paint controls, therefore, should be able to prepare and submit a Rotterdam Convention Notification which validly states that the regulatory action it took was based on a risk evaluation. Additionally:

- **If** the Notification includes a summary description of how the risk to human health from exposure to lead from lead paint was evaluated, and how the government reached the conclusion that regulatory action was needed, and

- **If** the Notification is accompanied by a report that includes a more detailed description of the risk evaluation and that also includes documentation of the science-based information the risk evaluation relied upon,

- **Then,** The Convention's Secretariat should be able to verify that the Notification satisfies the Convention's relevant Information Requirements.[26]

3.4 Satisfying Criterion (b).

After the Convention's Secretariat verifies that the Notification satisfies the Convention's Information Requirements, the Convention's Chemical Review Committee will evaluate whether it also satisfies all of Annex II's Listing Criteria. In order for it to satisfy Criterion (b):

- **The Notification** will need to contain a summary description of the risk evaluation that:

    - Identifies the toxicological, exposure-related, and other science-based information that the risk evaluation relied upon,

    - Describes how those who evaluated the risk used this science-based information to reach the conclusion that continued sales and use of lead paints would create an unacceptable risk to the country's human health, and

    - Explains how the risk evaluation's conclusion was transmitted to the relevant regulatory authorities.

- **The Supporting Documentation** will need to:

    - Provide a more complete description of the risk evaluation,

    - Identify the scientific/medical studies and findings upon which each piece of science-based information that the risk evaluation relied upon was based,

    - Provide all the documentation necessary to demonstrate that these studies and findings were in conformance with scientifically recognized methods, principles, and procedures, and

[26] The relevant Information Requirement are in Annex I, Paragraph 2 (a)(iv) which calls for an: "*Indication of whether the final regulatory action was taken on the basis of a risk or hazard evaluation and, if so, information on such evaluation, covering a reference to the relevant documentation*."

- Explain how and why the risk evaluation addressed exposure to lead from lead chromates under the prevailing conditions within the notifying country.

3.5 The Rotterdam Convention can list lead compounds based on risk evaluations that considered only the toxicity of lead.

When the Rotterdam Convention reviewed the risk evaluations upon which Canada and the EU based their decisions to take regulatory actions to control leaded automotive fuels, it established a precedent that anyone preparing a Notification of their country's regulatory action to control lead in paints should be familiar with and understand.

Although there are many differences between how Canada and the EU evaluated the leaded gasoline risk and how low- and middle-income countries evaluated the lead paint risk, these evaluations have one, very important similarity.

The risk evaluations that Canada and the EU performed considered only the toxicity of lead. They did not consider any other aspect of the toxicity of TEL or TML. And when the Convention concluded that Canada's and the EU's Notifications of their *Final Regulatory Action to Severely Restrict TEL and TML* satisfy all its Annex II *Listing Criteria*, and when it agreed to list TEL and TML in its Annex III, it also approved a *TEL/TML Decision Guidance Document* which states:

> "*The final regulatory action was taken to protect human health* ***based on the toxicity of lead****,* [emphasis added] *not on the basis of the toxicological profile of TEL or TML."*

This established, as a precedent, that Rotterdam Convention agreed to list certain lead compounds based on risk evaluations that only considered the toxicity of lead and did not consider any of the other aspects of the full toxicological profile of those compounds.

In like manner, most of the countries that recently adopted lead paint controls performed risk evaluations that only considered the toxicity of lead and that did not consider other aspects of the toxicity of lead chromates (or of any leaded paint ingredient).

If such countries prepare and submit Notifications of their *Final Regulatory Action to Severely Restrict Lead Chromates*, the fact that their risk evaluations only considered lead toxicity should not prevent the Convention from listing lead chromates in Annex III (even though lead

chromates also exhibit significant other forms of toxicity, such as their hexavalent chromium toxicity).

Conclusion. If the Rotterdam Convention's TEL/TML precedent is followed, a country that adopted a lead paint control law should be able, if it wishes, to prepare and submit a successful Notification of its *Final Regulatory Action to Severely Restrict Lead Chromates* whose risk evaluation only considered the toxicity of lead and did not consider any other aspect of lead chromates' full toxicological profile.

3.6 The toxicological and exposure-related information that many lead paint risk evaluations relied upon.

The specifics of how different low- and middle-income countries evaluated the human health risk from exposure to lead from lead paint often differed one from another. But the toxicological and exposure-related information their risk evaluations relied upon were often very similar.

In almost all cases, countries that recently adopted regulatory controls on lead in paint were highly influenced by information that was disseminated by the World Health Organization and by other active members of the Global Alliance to Eliminate Lead Paint. For this reason, many of the risk evaluations identified young children (typically children under six years of age and the developing fetus) as the vulnerable group that is most harmed by exposure to lead from lead paint.

Toxicological Information. The toxicological information circulated by WHO and other partners in the Global Lead Paint Alliance that often was most relied upon in country risk evaluations included:

- Exposure to even very small amounts of lead can interfere with a young child's brain development and can cause neurological deficits or impairments that are lifelong and irreversible.

- Cohort studies have found that the neurological deficits or impairments caused by even low-dose exposure to lead can reduce a young child's lifelong intelligence (as measured by IQ test); can reduce school performance (as measured by school grades and graduation rates); can increase violent and anti-social behavior (as measured by incarceration rates); and can reduce socioeconomic attainment (as measured by lifelong earnings).

- There is no known threshold of lead exposure in young children beneath which neurological deficits or impairments do not occur.

Lead can, therefore, be considered a non-threshold toxicant in young children.

Exposure-related information. The exposure-related information that often had the greatest influence included:

- Surfaces that have been painted with lead paint will, over time, age, weather, and chip. As a result, fragments of lead paint accumulate in indoor house dust and in outdoor soils.

- Large quantities of hazardous, lead-containing dust are created and dispersed when surfaces that were previously painted with lead paint are prepared for repainting by sanding or by scraping.

- Children playing indoors or outdoors typically dirty their hands with indoor dust and outdoor soil. They then typically ingest the dust and soil through normal hand-to-mouth behavior. When children ingest dust or soil that is contaminated with fragments of old lead paint, they are exposed to lead and can suffer neurological deficits or impairments. These kinds of exposures are often repetitive, over a period of years.

- Experiences and studies from other countries have shown that fifty years and longer after lead paints were used on home interiors, they continue causing widespread lead hazards in homes; they remain a major source of lead exposure in young children; and remediating homes that contain lead painted surfaces is extremely costly.

Although much of the exposure-related information was based on experiences and studies from other countries, the risk evaluations typically also considered the prevailing conditions in the notifying country. And those who evaluated the risk typically viewed all exposure-related findings and experiences from elsewhere through the lens of their knowledge of their own national conditions. The risk evaluations, therefore, typically concluded that because even very small exposures to lead can harm a young child's health and life prospects; and because the socioeconomic cost of banning lead paints is very low; primary prevention is the only good option, and regulatory action should be taken.

Based on precedents established when the Convention's Chemical Review Committee considered previous Notifications, Notifications of final regulatory action to severely restrict lead chromates should be able to explain how prevailing national conditions were properly taken into

account in ways that should be able to satisfy all elements of Criterion (b).[27]

3.7 Shared Research and Analysis.

IPEN, in cooperation with NGOs based in a number of the countries that recently adopted lead paint controls, has reviewed the lead paint risk evaluations several countries performed and has compared their commonalities and their differences. Based on the findings of this review and on other research, IPEN's third paper in this series will present additional information that should be helpful in preparing a lead paint Notification that can fully satisfy all elements of Criterion (b).

The paper IPEN, among other things, addresses:

- Identify the scientific/medical studies and findings that were the basis for toxicological and exposure-related information that many lead paint risk evaluations relied upon,

- Present evidence (or make the case) that these studies and findings conformed to scientifically recognized methods, principles, and procedures,

- Give special attention to the ways that the risk evaluations considered the prevailing conditions in the notifying country, and

- Discuss Rotterdam Convention precedents and past practices that can provide insights on how to prepare a Notification and supporting documentation that can satisfy sub-paragraph (iii) of Criterion (b) which requires that the risk evaluation took prevailing conditions within the notifying country appropriately into account.

The paper will provide information and documentation that can help those preparing Notifications of regulatory action to severely restrict lead chromates to produce supporting documentation that makes the case that the Notification's description of the risk evaluation by which the country justified its final regulatory action fully satisfies all elements of Criterion (b).

[27] This is addressed in much more detail in the third paper in this series.

4. Will the Convention's PIC Procedure Address International Trade in Paints that Contain Lead Chromate Pigments?

If the Rotterdam Convention agrees to list lead chromates in its Annex III, will its Prior Informed Consent procedure apply only to lead chromates in their powder form, or will it also apply to lead chromates when they are present as major constituents in paints and in masterbatches?

In IPEN's view, the PIC procedure can be applied not only to pigment powders, but also to paints and masterbatches. And this view is well-supported by the Convention's text and its past practices. Members of the CRC and participants in the COP, however, may not be sufficiently familiar with the characteristics of lead chromates and how they are used to reach this conclusion without receiving additional information about lead chromates. The best way to convey this information will be in the *Notification Form* itself, and with supporting documents if this is needed.

4.1 The forms in which lead chromates are traded and used.

Lead chromates are a family of yellow, orange, and red crystalline pigments. All contain the chemical compound lead chromate ($PbCrO_4$) in each crystal. Most contain lead sulphate ($PbSO_4$) in each crystal. Some also contain lead molybdate ($PbMoO_4$) in each crystal.[28] (Most additionally contain small amounts of non-lead compounds or impurities in each crystal.) The ratio of the amount of $PbCrO_4$ to $PbSO_4$ to $PbMoO_4$ affects the pigment's color and hue. Variations in the crystalline structure; in the impurities that are present in the crystals; and in the size and shape of the pigment powder particles can also influence the pigment's color and its other properties. Lead chromate pigments are typically at least 60% $PbCrO_4$ by weight.[29]

Lead chromates, however, are not just traded, sold, and used in their powder form. They are also sold, traded, and used as primary constituents in paints and in masterbatches.

[28] If the pigment contains only $PbCrO_4$ (but no other lead compound) it is assigned the CAS number 7758-97-6. If it contains both $PbCrO_4$ and $PbSO_4$ (but no other lead compound) it is assigned the CAS number 1344-37-2. If it contains $PbCrO_4$, $PbSO_4$, and $PbMoO_4$ (but no other lead compound) it is assigned the CAS number 12656-85-8.

[29] *See Controlling Lead Chromate Pigments: The Case for a Rotterdam Listing*, IPEN, May 2023, pages 5-6 & 29. https://ipen.org/sites/default/files/documents/controlling_lead_chromate_pigments_may_2023.pdf

The Rotterdam Convention states that "*for the purposes of this Convention*," the term "*Chemical*," should be understood to mean "*a substance whether by itself or in a mixture*…"[30] When lead chromates are sold, traded, or used as major constituents of a masterbatch or a paint, they can and should be considered – for Convention-related purposes – to be hazardous chemicals that are contained in a *mixture*. And if the Rotterdam Convention lists lead chromates and makes their international trade subject to its PIC procedure, this should not only apply to international trade in lead chromate pigment powders, but it should also apply to lead chromates that are traded as major constituents in paints and in masterbatches.

However, for the Rotterdam Convention to treat lead chromate-containing paints and masterbatches as *mixtures* that contain lead chromates, the CRC and COP may need to understand the roles lead chromates play in paints and in masterbatches:

Masterbatches. A masterbatch is a carrier matrix (a polymer or some other resin) that contains a concentrated mixture of pigments (or other plastics additives) that has been cut into small granules.

Producers of plastic products (and of other synthetic polymers such as synthetic rubbers, leathers, etc.) often purchase and use masterbatches to colorize their plastic products. They do this because a masterbatch is easier and often safer to use than pigment powders. Masterbatches also make it easier to achieve good color distribution and color consistency in the colorized product.

A masterbatch may contain a lead chromate pigment or pigments. If it does, and if the masterbatch is traded internationally, it should be assigned the Harmonized System Customs Code HS 320620. This is the same customs code that is assigned to lead chromate pigments when they are traded in their powder form.[31]

Masterbatches that contain lead chromate pigments are frequently exported and imported. If the Rotterdam Convention decides to list lead chromates in its Annex III, the provisions of its Prior Informed Consent procedure should not only apply to international trade in lead chromate pigments in their powder form, the PIC procedure should also apply to

[30] Article 2, *Definitions*

[31] According to the World Customs Organization's nomenclature, HS 320620 is the customs code assigned to "*Pigments and preparations of a kind used for colouring any material or used as ingredients in the manufacture of colouring preparations based on chromium compounds*."

trade in the lead chromates when they are contained as major constituents in masterbatches.

Pigment powders and masterbatches are two ways that lead chromates can be traded and used for colorizing plastics. If the PIC procedure is applied to one but not to the other, those who currently export lead chromates for use in coloring plastics can easily evade the Rotterdam Convention's PIC procedure by producing masterbatches that encapsulate the lead chromates they export for use in colorizing plastics. And countries that may deny consent to imports of lead chromates in their powder form for use in colorizing plastics will have no right to deny consent to imports of masterbatches containing lead chromates for the same use.

Paints. A paint has three main constituents: *pigments*, *binders*, and *solvents*.[32] Paints may additionally contain additives, but in most cases, paint additives are minor ingredients.

- The *pigment* is the ingredient that gives a paint its primary characteristics including its color, its opacity, and many of its protective properties.

- The *binder* is a glue-like substance that physically binds the pigment particles to one another (and that also binds the additives to the pigment particles); that makes the pigment particles adhere to a surface; and that, in some cases, surrounds the pigment particles with a protective coating.

- The paint's pigment(s) and its binder(s) are mixed into a *solvent* which allows the paint to be easily and evenly applied to a surface. After the paint is applied, the solvent evaporates, and the pigment(s) and binder(s) solidify into a dry paint film.

The earliest paints were nothing more than vehicles for adhering pigments to a surface.[33] And although paint technologies and paint products have greatly evolved, pigments are still the essential ingredient in almost all paint products. The binders and the solvents continue to be little more than vehicles for making pigments adhere to a surface.

If the Rotterdam Convention's CRC and COP understand that (in almost all cases) paint products are primarily vehicles for adhering pigments to surfaces, it will become difficult to deny that for Convention-related

[32] *What is Paint*, April 15, 2023, https://www.explainthatstuff.com/howpaintworks.html
[33] This has been explained with many different examples. See, for example: *The Colorful History of Paint*; https://www.earthdate.org/episodes/the-colorful-history-of-paint

purposes, lead chromate pigments contained in a paint product should be considered lead chromates present in a mixture. And, therefore, if the PIC procedure is applied to international trade in lead chromates, it should apply to the lead chromates that are traded as major constituents in paints.

Consider, for example, a county that imports all of its paints, and that has never produced lead chromates and has never imported them in their powder form. Many of this country's children may be exposed to lead from the lead chromates that are present, as major constituents, in the imported paints. And this might become a significant, national public health issue. But if the Rotterdam Convention decides to list lead chromates and not treat these paints as *mixtures* that contain a listed hazardous chemical, its PIC procedure will be of no use in preventing imports of a listed chemical that is harming the country's public health.

4.2 How the Notifications can help explain why the PIC procedure must be applied to paints that contain lead chromates as major constituents.

If the Convention decides to list lead chromates in its Annex III, it will adopt a *Lead Chromates Decision Guidance Document* (Lead Chromates DGD) that will, among other things, provide guidance to the Convention's Parties and Secretariat with regard to how the Convention's Prior Informed Consent will apply to lead chromates.

Those low- and middle-income countries most likely to prepare and submit Rotterdam Convention Notifications to nominate lead chromates for a Convention listing may be facing challenges in preventing unwanted lead paint imports. It will be important, therefore, for their Notifications to contain information about the characteristics of lead chromates and about how they are used which can help those who draft and adopt the Lead Chromates DGD understand why the PIC procedure must apply not only to lead chromates in their powder form, but also to paints and masterbatches that contain lead chromates as major constituents.

In the Convention's standard *Notification Form*, Section 1 asks the notifying country to provide information about the *identity* of the chemical that is "*subject to the Final Regulatory Action".* In this section, the Notification will present lead chromates' common names, trade names,

Chemical Abstract Service (CAS) numbers, and the other nomenclatures and codes by which lead chromates are identified.[34]

Identity-related information about lead chromates, however, will not be enough to enable members of the CRC and delegates to the COP to evaluate and determine whether and how the PIC procedure should be applied to paints and masterbatches. The standard *Notification Form*, however, also has a Section 2.5.3.4 in which the Notification can provide any "*Additional information related to the chemical*."

Those preparing Notifications to nominate lead chromates for a Convention listing can use Section 2.5.3.4 to describe the three major forms in which lead chromates are internationally traded and used: as pigment powders; as pigments in paints; and as colorants in masterbatches and to explain why the PIC procedure should be applied to international trade in all three forms.

It might also be useful to note that while for regulatory purposes, governments classify lead chromates as a group of three distinct substances, each with its own CAS number, in the marketplace and in international trade, lead chromates are more diverse.

- Lead chromates are a family of synthetic, crystalline pigments that are produced in a range of yellows, oranges, and reds,

- For each individual lead chromate pigment, its hue and its other desired properties are determined by the proportion of the chromates to the sulfates to the molybdates in the pigment's crystals; by its crystalline structure; by the presence (or absence) of impurities in its crystals; and by the size and shapes of the pigment particles, and

- These lead chromate pigments are traded, sold, and used in three major forms: as powders; as major constituents in masterbatches; and as major constituents in paints.

And while the Notification can present only a limited amount of information about lead chromates in Section 2.5.3.4, it can also provide references to additional information.

[34]In this section of the Notification lead chromates should be identified as a closely related family of three hazardous substances: Lead Chromate, CAS number 7758-97-6; Lead Sulfochromate, CAS number 1344-37-2, and Lead Chromate Molybdate Sulfate, CAS number 12656-85-8.

5. Satisfying Criterion (c): How Countries Can Demonstrate That the Restriction They Imposed On Lead Chromates was Sufficiently Severe to Justify a Listing.

Chapter 1 of this paper explained why many of the countries that recently adopted regulatory controls on the lead content of paints can – if they wish – submit a Notification to the Rotterdam Convention which validly states that the country took a *Final Regulatory Action* to *Severely Restrict* Lead Chromates. This chapter explains how a Notification can demonstrate that the restriction the country imposed on lead chromates was sufficiently severe to satisfy the Convention's Criterion (c) and justify a decision to list it in Annex III.

If a country that recently adopted a lead paint control law submits a Notification of Final Regulatory Action to Severely Restrict Lead Chromates, the Secretariat will review the Notification to determine whether it satisfies the Convention's Annex I Information requirements. The Secretariat will look at Section 1 of the *Notification Form* to see if it contains all the required *Identity* information about lead chromates. And it will look at Section 2 of the *Notification Form* to see if it provides all the required information about the *Final Regulatory Action* that was taken. If the Secretariat concludes that the Notification has provided all of the required information, it will ***verify*** that the Convention's Annex I Information Requirements have been satisfied, and it will forward the Notification to the Chemical Review Committee for its consideration.

The CRC will then review the verified Notification to determine whether it satisfies all of the Convention's Annex II Listing Criteria. And when it considers whether the Notification satisfies Criterion (c), it will decide whether the restriction the regulatory action imposed was *sufficiently severe* to justify listing lead chromates in Annex III.

5.1 Criterion (c).

Criterion (c) requires the CRC to: "Consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III."

In determining whether Criterion (c) has been satisfied, the CRC will review all relevant information contained in the Notification and its

supporting documents, and it will use this information to answer the following two questions:

1. "*Whether the final regulatory action led, or would be expected to lead, to a significant decrease in the quantity of the chemical used or the number of its uses*", *and*

2. "*Whether the final regulatory action led to an actual reduction of risk or would be expected to result in a significant reduction of risk for human health or the environment of the Party that submitted the notification.*"[35]

The Notification can only satisfy Criterion (c) if the CRC's answer to both questions is *yes*. And if it answers yes, the CRC will have determined that the restriction the regulatory action imposed on lead chromates was sufficiently severe to justify a decision to list them in the Annex III.

5.2 Information for answering question 1.

When answering the first of the above two questions, the CRC will rely, especially, on information that is provided in the *Notification Form*'s sections 2.3 and 2.5. The *Notification Form's* Sections 2.3.1 and 2.3.2 asks for information about the **uses** of lead chromates, and providing this information is mandatory. Section 2.5.1 asks for information about the **quantities** of lead chromates used, but providing this information is optional.

- *Section 2.3.1* asks the notifying country to identify "*All use or uses of the chemical in your country prior to the final regulatory action*,"

- *Section 2.3.2* asks the notifying country to identify the "*Use or uses prohibited by the final regulatory action*," and to also identify the "*Use or uses that remain allowed*," and

- *Section 2.5.1* asks the notifying country to provide an estimate of the "*quantity of the chemical produced, imported, exported and used.*"

Section 2.3.1. Those preparing the Notification may need to do some research to provide a good list of the domestic uses of lead chromates *prior to* the adoption of the country's regulatory controls on lead in paint.

[35] The CRC must consider these two questions because it is required to do so in Annex II, paragraphs (c)(i) and (c)(ii).

The result, in almost all cases, will be that the largest prior domestic use of lead chromates – by far – was as pigments in paints; and that the only other significant use of lead chromates was as colorants in plastics.

A literature review, however, will also turn up several other uses of lead chromates including its use in ceramic glazes; in printing inks; in pyrotechnics; as a reagent; and possibly some others.

Most of the lead chromate uses that will turn up in a literature review, however, are now rare and/or are obsolete.[36] It would, therefore, be misleading for a Notification to identify uses of lead chromates that were not current at the time the country's lead paint control law entered into force.

For this reason, before including a prior domestic lead chromate usage in Section 2.3.1, it is important to verify that the usage was, in fact, still being practiced at the time the country's lead paint control law entered into force.

Section 2.3.2. In almost all cases, the response to Section 2.3.2 will be that the *only use* of lead chromates that the final regulatory action prohibited was their use as pigments in paints. And that, besides their use as pigments in paints, *all other* uses of lead chromates remain allowed**.**

Section 2.5.1. Although the Notification is not required to provide an estimate of the quantify of lead chromates produced, imported, exported, and used, most of the countries that prepare Notifications would benefit from providing these estimates, if they can, because doing so could strengthen the case that the regulatory action led to a significant decrease in the quantity of lead chromates used. (Sections 5.4 to 5.7 below discuss why providing these estimates would be helpful, and how estimates can be developed.)

5.3 A narrative statement.

The information that is provided in the *Notification Form's* Sections 2.3.1 and 2.3.2 will likely indicate that prior to the regulatory action there were two significant uses of lead chromates (as pigments in paints and as colorants in plastics), and that after the regulatory action one of the uses ended and the other continued. Therefore, for purposes of answering the portion of question 1 that relates to the "*number of uses*," the Notification

[36] IPEN has researched the possible continuing uses of lead chromates and its conclusions can be found in *Controlling Lead Chromate Pigments: The Case for a Rotterdam Listing*, IPEN, May 2023, pages 16-18 and 27-28; https://ipen.org/sites/default/files/documents/controlling_lead_chromate_pigments_may_2023.pdf

will not make a strong case that the regulatory action led to a significant decrease in the *number* of lead chromate uses.

To enable the CRC to answer *yes* to question 1 as a whole, therefore, it is important that the Notification make a strong case that the regulatory action did lead to a significant decrease in the *quantity of lead chromates* that were used.

It might be possible to achieve this by including in the Notification[37] a narrative statement such as the following:

> *Before our country considered and adopted its lead paint control law, we imported substantial quantities of lead chromates for use as ingredients in the manufacture of lead paints and/or we imported substantial quantities of paints for domestic use that contained lead chromates as primary constituents. When our lead paint control law entered into force, our paint manufacturers were no longer allowed to produce lead paints, and so they stopped importing lead chromates for use as paint ingredients. Most imports of lead chromate-containing paints have also stopped. And insofar as some continue, these imports are illegal and in violation of our national laws.*
>
> *Other uses of lead chromates are still allowed. But the only current use, on any significant scale, is their use in colorizing plastics. And the quantity of lead chromates used for this purpose is very small as compared to the quantities of lead chromates previously used as pigments in paints. Our regulatory action, therefore, did lead to a significant decrease in the quantity of lead chromates that were domestically used.*

A nationally specific version of the above kind of statement might be sufficient to help members of the CRC to conclude that the notified regulatory action *led to a significant decrease in the quantity of lead chromates used*.

Providing **quantitative** information, however, would make the case much more compelling. And although it would take some work, it may not be overly difficult for those preparing the Notification to produce numerical estimates that can strengthen their case.

[37] The statement could be entered into the Notification in Section 2.5.3.4 (Additional information related to the chemical or the final regulatory action).

5.4 Comparing the quantity of lead chromates used prior to the regulatory action to the quantity still being used.

Section 2.5.1 of the *Notification Form* calls for the: "*Estimated quantity of the chemical produced, imported, exported, and used*." Although the Secretariat has indicated that including such estimates in the Notification is optional, and not mandatory,[38] if the Notification can present reasonably good estimates showing that the regulatory action did, in fact, lead to a significant decrease in the quantity of lead chromates the country used, the CRC would be much more likely to conclude that their answer to question 1 is *yes*.

The estimates could enable a comparison between the quantity of lead chromates that the country used prior to the regulatory action with the quantity still being used. But to make such a comparison requires picking a baseline year and a recent year between which the comparison can be made.

The selected *baseline year* should not only be earlier than the year the regulatory action was adopted, but it should also precede decisions by domestic paint companies to begin voluntarily phasing out the production and sales of lead paints in anticipation of possible regulatory action.

The selected *recent year* should come after the regulatory action entered into force. And in countries that may have experienced some short-term regulatory compliance challenges, it should come after these as well.

Baseline Year. In many of the countries that recently adopted lead paint controls, some paint companies – especially some transnationals and some of the larger national companies – began to voluntarily phaseout their production and sales of lead paints as early as 2010.[39] For such countries, 2009 would be a good baseline year. In a few countries, stories began appearing in the national news media in 2007 and/or 2008 about

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[38] The Convention website has a document titled: "*Guidance to Complete the Form for Notification of Final Regulatory Action to Ban or Severely Restrict a Chemical*." Its discussion of how to complete Section 2.5 states, "*The information in this section of the form is not mandatory*." The document also provides an example of a completed *Notification Form.* In the example, the estimates called for in Section 2.5.1 are given as "*Not Available*." See: http://www.pic.int/Portals/5/guidance/guidance_form_Low_Res.pdf

[39] **In 2009**, the International Conference on Chemicals Management (ICCM2) unanimously agreed – with governments, industry, and civil society representatives participating – on the need for regulatory action to control lead in paints. In many countries, government agencies, civil society organizations, and/or paint companies were aware of this decision, and it began influencing them. **In 2010**, the World Health Organization and the United Nations Environment Programme agreed to establish the Global Alliance to Eliminate Lead Paint (GAELP, also called the *Lead Paint Alliance*). Several governments, civil society organizations, and paint industry representatives participated in GAELP's founding meeting. And voluntary decisions by paint companies to phaseout their production and sale of lead paints – especially by some larger companies and transnationals – began to accelerate.

human health hazards caused by exposure to lead from paints, and about the desirability of national controls. In some of these countries, a number of paint companies began to phase out lead paints at this time. And in such countries, a somewhat earlier baseline year might better reflect the national circumstance.

Recent Year. Some countries experienced a delay between the date their lead paint control law formally entered into force, and when government enforcement agencies and/or some domestic paint companies were ready to fully assume their compliance responsibilities. Such countries might, therefore, select a more recent year that reflects improved compliance with their national lead paint control laws.

5.5 Data for estimating lead chromate use reductions.

If those preparing a Notification decide to provide the information called for in Section 2.5.1 of the *Notification Form*, they will need to prepare estimates of the amount of lead chromates that the country produced, imported, exported, and used.

In most cases, if those preparing the Notification are able to get access to the import/export records that are kept by their national customs authority, it should not be overly difficult for them to prepare very useful, but somewhat limited, estimates.[40]

When lead chromates are imported or exported as pigment powders or as masterbatches, their associated shipping documents are required to bear the Harmonized System Customs Code HS 320620. This is the code for all:

> *"Pigments/ and preparations of a kind used for colouring any material or used as ingredients in the manufacture of colouring preparations based on chromium compounds (excl. preparations of headings 3207, 3208, 3209, 3210, 3212, 3213 and 3215)*."[41]

In this definition, three of the excluded headings – 3208, 3209, and 3210 – refer to the first four digits of customs codes that apply to various kinds of paints and varnishes. This means that, even though the HS 320620 customs code can be very useful for identifying and quantifying imports

[40] If the officials responsible for preparing the Notification are able to get access to the relevant customs data; and if they would like to receive assistance in preparing estimates of lead chromate production, import, export, and use; IPEN should be able to provide a volunteer consultant who can assist them in preparing these estimates.

[41] See the European Union Customs Portal at https://www.tariffnumber.com/2023/32062000

and exports of lead chromates as pigment powders and as masterbatches, customs codes are not helpful for identifying imports and exports of paints that contain lead chromate pigments.

Despite this limitation, however, for most countries, customs data can serve as a very helpful, primary source of information in preparing meaningful estimates of the country's production, import, export, and use of lead chromates.

In addition to HS codes, the shipping documents that accompany commodity imports and exports also typically provide a *"Product Description,"* and information about the quantity shipped, and about the buyer. When commodities are imported or exported, customs personnel typically record the information contained in the shipping documents in a database. And it then becomes easy for customs officials, if requested, to produce and provide spreadsheets that list all the imports and exports, for a given year, of commodities that are identified with the customs code HS 320620. The request should be for spreadsheets that include columns for *date of import, product description*, *quantity*, *value*, and *buyer.*

Product Description. The product description is important because, in addition to lead chromates, the code HS 320620 is also assigned to zinc chromates, barium chromates, strontium chromates, and chromium oxides. In most cases, however, the exporter's *product description* will provide enough information to determine which of the imports were lead chromates and which were other, non-leaded, chromium compounds.

Quantity Shipped. The quantity shipped is needed to estimate the total quantity (in metric tons) of lead chromates – in both their powder and their masterbatch form – that were imported or exported in a given year, and

The Buyer. Information about the buyer may be useful if it provides information about the likely lead chromate end use.

5.6 Preparing the estimates.

The notifying countries for which customs data will be most useful in preparing estimates of lead chromate production, import, export, and use are those which domestically produce most of the paints that they use, and that either:

- Do not domestically manufacture any lead chromates and, therefore, import **all** the lead chromates they use, or

- Domestically manufacture only small quantities of lead chromates and import the great majority of the lead chromates they use.

For such countries, it should be relatively easy to use customs data to produce reasonably good estimates of the total quantity of lead chromates – in the form of pigment powders or masterbatches – that the country produced, imported, exported, and used in a given year.

If the country does not domestically manufacture any lead chromates, a formula to produce an initial estimate of the quantity of lead chromates the country used in a given year would be:

> [Total reported annual lead chromates imported] **–** [Total reported annual lead chromates exported] **=** [Estimated annual lead chromate usage].

A few low- or middle-income countries – the Philippines is an example – have produced some lead chromates, but only a small portion of the total amount of lead chromates the country domestically uses. If the country has only one or a small number of lead chromate producers, it may not be too difficult to come up with a rough estimate of the country's lead chromate production for a given year. In such cases, the formula above could be modified to become:

> [Total reported annual lead chromates imported] **+** [Total estimated lead chromates domestically produced] **–** [Total reported annual lead chromates exported] **=** [Estimated annual lead chromate usage].

The estimates produced by using the above formulas assume the customs data that the estimate was based upon was complete and accurate (even though there may have been some errors). The estimates also assume (although it is not completely accurate) that the lead chromates were used in the same year they were imported. And the formulas will tend to produce significant underestimates in countries that import significant quantities of lead paints.[42]

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[42] The use estimates produced by the formulas do not count the quantity of lead chromates that were imported in the form of pigments contained in paints and then domestically used to coat surfaces. And, therefore, for countries that previously imported significant quantities of lead paint, the formulas would result a significant under-estimate for the baseline year but not for the recent year.

It should be noted that when lead chromates are imported or domestically produced in the form of pigment powders and are then used as ingredients to manufacture paints, they will later be used again to coat surfaces. But it would be misleading to count the same lead chromate pigments twice: once when they were used to produce a paint, and again when they were was used in paints to coat a surface.

But when lead chromates, which are imported in the form of ingredients in a paint, are then used to coat a surface, it would have been more accurate (if it was possible) to count this as a lead chromate use. Unfortunately, the data that would be needed to do this is not available.

Despite these limitations, if the country produces all or most of the paints that it uses, the estimate this formula produces should be good enough to demonstrate that the lead paint control law led to a significant reduction in lead chromate use.

5.7 Presenting lead chromate use reduction estimates.

Section 2.5.1 of the *Notification Form* provides a template for presenting estimates of a country's production, import, export, and use of the notified hazardous chemical. The template, however, only provides space for estimates from a single year. And neither the *Notification Form*, nor the guidance the Convention provides say anything about how to select the year for which the Section 2.5.1 estimates are to be made.

As discussed above, selecting the year will have a decisive influence on what the estimates will show. And if estimates are to be used to determine whether the final regulatory action led to a *significant decrease in the quantity of lead chromates used*, it will be necessary to compare the estimates for a baseline year with estimates for a recent year.

The template provided in Section 2.5.1 of the *Notification Form* is:

Estimated quantity of the chemical produced, imported, exported and used

	Quantity per year (MT)	Year
Produced		
Imported		
Exported		
Used		

This template can be slightly modified to become:

Estimated quantity of the chemical produced, imported, exported and used

	Quantity per year (MT)	Year
produced		baseline
produced		recent
imported		baseline
imported		recent

exported		baseline
exported		recent
used		baseline
used		recent

If a country's Notification presents estimates of lead chromate production, import, export, and use in Section 2.5.1 of the *Notification Form,* it should also submit supporting documentation describing how the estimates were arrived at; the assumptions that were made; and their limitations.

Despite their limitations, we expect the estimates will reveal a stark difference between estimated lead chromate use in the baseline year (prior to the adoption of the regulatory controls) and a recent year (that follow the regulatory controls' entry into force) to make a very strong case that the notified regulatory action led to a *significant decrease in the quantity of lead chromates used*.

And this should be enough to enable the CRC to conclude that the answer to question 1 is *yes.*

5.8 Answering question 2.

As indicated above, for the Chemical Review Committee to conclude that the Notification satisfies Criterion (c), it must be able to answer *yes* to both question 1 and question 2. This chapter has mainly focused on how the Notification can demonstrate that the regulatory action led to a significant decrease in the quantity of lead chromates that the country used.

But the CRC must also be able to answer *yes* to the second question:

> "*Whether the final regulatory action led to an actual reduction of risk or would be expected to result in a significant reduction of risk for human health or the environment of the Party that submitted the notification."*

The information that a country provides in the Notification's summary description of the country's risk evaluation, and in the accompanying supplementary documents should be sufficient to make the case that the regulatory action can be *expected to result in a significant reduction of risk for human health.*

The World Health Organization, the United Nations Environment Programme, and other authoritative international voices – for more than a

decade – have been consistently informing governments and others that effective regulatory action to control the lead content of paints is needed and will result in a *significant reduction of risk for human health*. The information already provided in the Notification about the country's risk evaluation will provide evidence that reflects this message. And members of the CRC and delegates to the COP will – almost certainly – already be aware that preventing the use of lead paints will result in a significant reduction in risk to human health.

It is, therefore, doubtful that any meaningful objection will be raised as to whether the answer to question 2 is *yes*.

5.9 Conclusion.

When a low- or middle-income country that recently adopted lead paint controls prepares a Notification of Final Regulatory Action to Severely Restrict Lead Chromates, its Notification must contain information that will enable the CRC to conclude that the regulatory action:

1. Led to a significant decrease in the quantity of lead chromates that the country used, and

2. Can be expected to result in a significant reduction of risk for human health.

If the Notification contains the needed information, and if the CRC reaches this conclusion, it will also conclude that the Notification satisfies Criterion (c). And when it does this, it will have found that the restriction the regulatory action imposed on lead chromates was sufficiently severe to justify listing them in the Convention's Annex III and making their international trade subject to its PIC procedure.

Appendix 1: The Convention's Annex I

ANNEX I

INFORMATION REQUIREMENTS FOR NOTIFICATIONS MADE PURSUANT TO ARTICLE 5

Notifications shall include:

1. Properties, identification and uses

   (a) Common name;

   (b) Chemical name according to an internationally recognized nomenclature (for example, International Union of Pure and Applied Chemistry (IUPAC)), where such nomenclature exists;

   (c) Trade names and names of preparations;

   (d) Code numbers: Chemical Abstracts Service (CAS) number, Harmonized System customs code and other numbers;

   (e) Information on hazard classification, where the chemical is subject to classification requirements;

   (f) Use or uses of the chemical;

   (g) Physico-chemical, toxicological and ecotoxicological properties.

2. Final regulatory action

   (a) Information specific to the final regulatory action:

      (i) Summary of the final regulatory action;

      (ii) Reference to the regulatory document;

      (iii) Date of entry into force of the final regulatory action;

      (iv) Indication of whether the final regulatory action was taken on the basis of a risk or hazard evaluation and, if so, information on such evaluation, covering a reference to the relevant documentation;

(v) Reasons for the final regulatory action relevant to human health, including the health of consumers and workers, or the environment;

(vi) Summary of the hazards and risks presented by the chemical to human health, including the health of consumers and workers, or the environment and the expected effect of the final regulatory action;

(b) Category or categories where the final regulatory action has been taken, and for each category:

(i) Use or uses prohibited by the final regulatory action;

(ii) Use or uses that remain allowed;

(iii) Estimation, where available, of quantities of the chemical produced, imported, exported and used;

(c) An indication, to the extent possible, of the likely relevance of the final regulatory action to other States and regions;

(d) Other relevant information that may cover:

(i) Assessment of socio-economic effects of the final regulatory action;

(ii) Information on alternatives and their relative risks, where available, such as:

- Integrated pest management strategies;
- Industrial practices and processes, including cleaner technology.

Appendix 2: The Convention's Annex II

ANNEX II

CRITERIA FOR LISTING BANNED OR SEVERELY RESTRICTED CHEMICALS IN ANNEX III

In reviewing the notifications forwarded by the Secretariat pursuant to paragraph 5 of Article 5, the Chemical Review Committee shall:

(a) Confirm that the final regulatory action has been taken in order to protect human health or the environment;

(b) Establish that the final regulatory action has been taken as a consequence of a risk evaluation. This evaluation shall be based on a review of scientific data in the context of the conditions prevailing in the Party in question. For this purpose, the documentation provided shall demonstrate that:

(i) Data have been generated according to scientifically recognized methods;

(ii) Data reviews have been performed and documented according to generally recognized scientific principles and procedures;

(iii) The final regulatory action was based on a risk evaluation involving prevailing conditions within the Party taking the action;

(c) Consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III, by taking into account:

(i) Whether the final regulatory action led, or would be expected to lead, to a significant decrease in the quantity of the chemical used or the number of its uses;

(ii) Whether the final regulatory action led to an actual reduction of risk or would be expected to result in a significant reduction of risk for human health or the environment of the Party that submitted the notification;

(iii) Whether the considerations that led to the final regulatory action being taken are applicable only in a limited geographical area or in other limited circumstances;

(iv) Whether there is evidence of ongoing international trade in the chemical;

(d) Take into account that intentional misuse is not in itself an adequate reason to list a chemical in Annex III.

Appendix 3: The Convention's *Notification Form*[43]

ROTTERDAM CONVENTION

SECRETARIAT FOR THE ROTTERDAM CONVENTION
ON THE PRIOR INFORMED CONSENT PROCEDURE
FOR CERTAIN HAZARDOUS CHEMICALS AND PESTICIDES
IN INTERNATIONAL TRADE

UNEP

FORM FOR NOTIFICATION

OF FINAL REGULATORY ACTION TO BAN OR SEVERELY RESTRICT A CHEMICAL

Country:

SECTION 1	**IDENTITY OF CHEMICAL SUBJECT TO THE FINAL REGULATORY ACTION**	
1.1	**Common name**	
1.2	**Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists**	
1.3	**Trade names and names of preparations**	

[43] The Rotterdam Convention's *Form for Notification of Final Regulatory Action to Ban or Severely Restrict a Chemical* can be downloaded at http://www.pic.int/Portals/5/eForms/hardcopy/FRA%20simple%20word%20form_E.doc

1.4 Code numbers

1.4.1 CAS number	
1.4.2 Harmonized System customs code	
1.4.3 Other numbers (specify the numbering system)	

1.5 Indication regarding previous notification on this chemical, if any

1.5.1 ☐ This is a first time notification of final regulatory action on this chemical.

1.5.2 ☐ This notification replaces all previously submitted notifications on this chemical.
Date of issue of the previous notification: _____

SECTION 2 FINAL REGULATORY ACTION

2.1 The chemical is: ☐ **banned** **OR** ☐ **severely restricted**

2.2 Information specific to the final regulatory action

2.2.1 Summary of the final regulatory action

2.2.2 Reference to the regulatory document, e.g. where decision is recorded or published

2.2.3 Date of entry into force of the final regulatory action

2.3 Category or categories where the final regulatory action has been taken

2.3.1 All use or uses of the chemical in your country prior to the final regulatory action

2.3.2 Final regulatory action has been taken for the category ☐ Industrial

Use or uses prohibited by the final regulatory action

Use or uses that remain allowed (only in case of a severe restriction)

2.3.3 Final regulatory action has been taken for the category ☐ Pesticide

Formulation(s) and use or uses prohibited by the final regulatory action

Formulation(s) and use or uses that remain allowed

(only in case of a severe restriction)

2.4 **Was the final regulatory action based on a risk or hazard evaluation?**

☐ **Yes**

☐ **No** (If no, you may also complete section 2.5.3.3)

2.4.1 If yes, reference to the relevant documentation, which describes the hazard or risk evaluation

2.4.2 Summary description of the risk or hazard evaluation upon which the ban or severe restriction was based.

2.4.2.1 Is the reason for the final regulatory action relevant to human health? ☐ Yes ☐ No

If yes, give summary of the hazard or risk evaluation related to human health, including the health of consumers and workers

Expected effect of the final regulatory action

2.4.2.2 Is the reason for the final regulatory action relevant to the environment? ☐ Yes ☐ No

If yes, give summary of the hazard or risk evaluation related to the environment

Expected effect of the final regulatory action

2.5 Other relevant information regarding the final regulatory action

2.5.1 Estimated quantity of the chemical produced, imported, exported and used

	Quantity per year (MT)	Year
produced		
imported		
exported		
used		

2.5.2 Indication, to the extent possible, of the likely relevance of the final regulatory action to other states and regions

2.5.3 Other relevant information that may cover:

2.5.3.1 Assessment of socio-economic effects of the final regulatory action

2.5.3.2 Information on alternatives and their relative risks, e.g. IPM, chemical and non-chemical alternatives

2.5.3.3 Basis for the final regulatory action if other than hazard or risk evaluation

2.5.3.4 Additional information related to the chemical or the final regulatory action, if any

SECTION 3 PROPERTIES

3.1 Information on hazard classification where the chemical is subject to classification requirements

International classification systems **e.g. WHO, IARC, etc.**	**Hazard class**

Other classification systems **e.g. EU, USEPA**	**Hazard class**

3.2 Further information on the properties of the chemical

3.2.1 Description of physico-chemical properties of the chemical

Reference

3.2.2 Description of toxicological properties of the chemical

Reference

3.2.3 Description of ecotoxicological properties of the chemical

Reference

SECTION 4 **DESIGNATED NATIONAL AUTHORITY**

Institution	
Address	
Name of person in charge	
Position of person in charge	
Telephone	
Telefax	
E-mail address	

Date: _____

Signature of DNA and official seal: _____

PLEASE RETURN THE COMPLETED FORM TO:

Secretariat for the Rotterdam Convention
Food and Agriculture Organization

OR

Secretariat for the Rotterdam Convention
United Nations Environment

of the United Nations (FAO)

Viale delle Terme di Caracalla

00153 Rome, Italy

Tel: (+39 06) 5705 2188

Fax: (+39 06) 5705 3224

E-mail: pic@fao.org

Programme (UNEP)

11-13, Chemin des Anémones

CH – 1219 Châtelaine, Geneva, Switzerland

Tel: (+41 22) 917 8296

Fax: (+41 22) 917 8082

E-mail: brs@un.org

Definitions for the purposes of the Rotterdam Convention according to Article 2:

(a) 'Chemical' means a substance whether by itself or in a mixture or preparation and whether manufactured or obtained from nature, but does not include any living organism. It consists of the following categories: pesticide (including severely hazardous pesticide formulations) and industrial;

(b) 'Banned chemical' means a chemical all uses of which within one or more categories have been prohibited by final regulatory action, in order to protect human health or the environment. It includes a chemical that has been refused approval for first-time use or has been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process and where there is clear evidence that such action has been taken in order to protect human health or the environment;

(c) 'Severely restricted chemical' means a chemical virtually all use of which within one or more categories has been prohibited by final regulatory action in order to protect human health or the environment, but for which certain specific uses remain allowed. It includes a chemical that has, for virtually all use, been refused for approval or been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process, and where there is clear evidence that such action has been taken in order to protect human health or the environment;

(d) 'Final regulatory action' means an action taken by a Party, that does not require subsequent regulatory action by that Party, the purpose of which is to ban or severely restrict a chemical.