

Toolkit for establishing laws to eliminate lead in paint

Module A

The Problem With Lead Paint



Outline

- Background
- Paint basics
- What components of paint can contain lead?
- Why lead paint is a problem?
- Summary
- References
- Point of contact



Background

- Lead paints contain lead compounds that are added to give certain properties to the paint.
- Lead paints are still widely available and used in many countries.
- Uses include decoration of interior and exterior surfaces in homes and public buildings, on roads and bridges, and also on toys, furniture and playground equipment.
- Water-based paints rarely contain intentionally-added lead.

The term paint is used to also include varnishes, lacquers, stains, enamels, glazes, primers, and coatings



Paint basics - categories

- Paint is sometimes categorized by its solvent base:
 - water-based paint - commonly called latex paint
 - organic solvent-based paint - commonly called alkyd paint.
- Paint is sometimes categorized by its intended use, e.g.:
 - decorative paints
 - industrial paint
- Some paints are categorized by their finish, e.g.:
 - enamel paint - hard, glossy and opaque finish.

Paint basics - ingredients

- Pigment and fillers
 - Provide colour, hiding power and control gloss.
 - Fillers are special pigment materials are sometimes added to provide opacity and thickness to the paint.
- Resin
 - Functions as a binder to hold the pigment particles together and provide adhesion to the surface painted.
- Solvent
 - Acts as a carrier for the pigments and resin.

Paint basics - ingredients

- Drying agent (drier)
 - The drying agent is added to some solvent-based paints to catalyze the reaction resulting in hardened cross-linked polymer networks that bind the pigment to the painted surface.
 - The result is often a dried paint with a hard, glossy surface.
- Other additives
 - A variety of substances can be added to the paint to enhance the paint's properties, such as ease of brushing, scuff resistance, sag resistance, corrosion resistance and increased durability.

(Reference 1)



Lead compounds have a range of functions in paint

- **Pigments** - The most commonly used lead pigments are lead chromates and lead molybdates which are bright yellow, orange or red in colour.
- These pigments can also be used in a mixture with other pigments to produce bright colours such as green and purple.
- Lead carbonates and lead sulfates can be used as white pigments, but are rarely used since lead-free alternatives perform better.

Lead compounds have a range of functions in paint

- **Drying agents and catalysts** - e.g. lead naphthenate and lead octanoate.
- **Corrosion resistance agents** - Added to paints used on metal surfaces, e.g. lead tetroxide (also called red lead or minium).
- **Unintentional contamination** - Trace quantities of lead may sometimes be present in the fillers and other earth-based ingredients that are used in paint formulation.

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_26773

