
LEAD Action NEWS

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The newsletter of The LEAD (Lead Education and Abatement Design) Group Inc.

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Volcano Art Prize Launched



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Editorial

There is always too much to do with not enough time, but these last few months have been particularly busy here at The LEAD Group. The extra work is a result of the various exciting new projects we hope will 'modernise' the LEAD Group image.

Central projects of this push towards creating a new look for The LEAD Group, the 2013 Lead-Safe World Calendar and inaugural Volcano Art Prize (VAP), were launched on Monday 22nd October 2012 during The LEAD Group's celebration of the 15th anniversary of Lead Poisoning Awareness Week. The launch was hosted by Melinda Pavey, New South Wales Parliamentary Secretary for Regional Health, at NSW Parliament House. For those who would like to see the VAP Launch presentation, it's online at <http://www.slideshare.net/elizabethobrien712/vap-launch-presentation-20121019>

Coinciding with the running of our inaugural Volcano Art Prize (VAP), this LEAD Action News has the issue of art and lead as its theme.

We begin the newsletter with a description of the Volcano Art Prize, and some suggestions for young artists who want to enter the Volcano Art Prize. At The LEAD Group we encourage the participation of all age groups, particularly children.

We then move to a letter by Elizabeth O'Brien to The Hon. Tony Burke MP, urging him to commit to a National Lead Poisoning Awareness Week following the recent VAP celebration of NSW Lead Poisoning Awareness week at NSW Parliament House.

In keeping with our 'lead in art' theme, LEAD Group volunteer *Filip Szczepanski* has collated and typed up documents *held by the Sydney Powerhouse Museum Library on silk printing in past decades*. Material relating to heavy metals in silk printing has been taken from four separate library books.

As many of you would have seen, lead has been given a lot of attention in Australian based media of late. In light of the recent large amount of media attention surrounding lead issues, we have included a list of those media articles which have appeared recently in the press and provided links for those interested in following them up. Professor Mark Taylor of The LEAD Group's Committee and Technical Advisory Board (TAB), and Professor Chris Winder of TAB, have whipped up enormous media interest in the need to revise downwards Australia's blood lead level guideline, and do a national blood lead survey of all ages so we finally have some data on lead exposure in Australia.

We also discuss the new saliva lead test as developed by Western Slope Laboratory - using oral fluid for lead screening. The method allows for the detection of lead in oral fluid with levels as low as 0.05µg/dL; this is one hundred times lower than the current CDC action level for children.

Finally I urge all of you to vote for the VAP 2012 Peoples Choice award. Voting is open until Friday 21 December 2012. All the wonderful entries for the 2012 competition are displayed at www.volcanoartprize.com/peopleschoice, head along and vote for your favourites!

These few months have not only been busy, but exciting ones. We have seen many historic 'firsts' for not only The LEAD Group and its staff (including my very first editorial and case study), but for the lead abatement effort. A lead-safe future is starting to come onto the horizon, but we have far to go yet.

- **Zac Gethin-Damon**

Volcano Art Prize 2012



International Environmental
Digital Image Competition



Lead-Safe World CALENDAR 2013

“In our lead-safe future, the only source of lead in air,
will be volcanoes.”

‘Elizabeth and the Volcano - Lead White’
by Tony Lennon, non-lead oil painting on canvas

Volcano Art Prize (VAP) is an annual digital image competition for environmental art organised by [The](#)

[LEAD Group](#) – an environmental health charity - in which 12 winning entries will be chosen to illustrate a Lead-Safe World CALENDAR (which also serves as an Art Prize Catalogue) to be sold to raise money for lead-awareness.

Mr. Julian Wrigley, artist and art teacher at Moriah College, Sydney will be the sole judge of the 2012 competition and Julian will consult with Elizabeth O’Brien, President of The LEAD Group, on whether the artwork accurately illustrates the lead-safety theme chosen by the artist.

The Volcano Art Prize has a number of [suggested lead-safety themes](#) based around how to be lead-safe and prevent lead exposure, despite lead-containing artists materials, widespread lead contamination of old buildings, and our environment generally.

All artists must [enter a digital image](#) which addresses a lead-safety theme, though you are permitted to create your own lead-safety theme. The lead-safety theme is part of your entry so it is recommended that before creating your own lead-safety theme, or start working on your entry, you should read the suggested themes carefully and view [“previous winners”](#). If you are new to the issue of lead poisoning prevention, or want more ideas, you can also read The LEAD Group’s extensive website at www.lead.org.au. Young artists and their teachers can “Like” our Volcano Art Prize FACEBOOK fan page, in order to download some very useful tips on creating an image for this competition.

As soon as an entry which complies with the Conditions is uploaded to www.volcanoartprize.com/peopleschoice, it can be “Liked” by anyone wishing to vote for the People’s Choice award. Any one person can only “Like” an entry once, though you can “Like” more than one entry.

In addition to the \$100 cash prize for the People's Choice Award, the entry with the most "Likes" will be printed on the Cover of the 2014 Lead-Safe World CALENDAR.

Up to 36 digital images will be pre-selected by the judge from entries, and be displayed at a launch at NSW Parliament House on Monday 22 October 2012 at 2:30 – 3:30pm. Prizes to the value of \$1300 will be shared between the 12 winners and one Peoples Choice winner.

CONDITIONS OF ENTRY:

- 1 The prize is open to ANYONE anywhere in the WORLD.
- 2 Entry into the competition is FREE and limited to ONE entry per person.
- 3 The Digital images must be the ORIGINAL artwork of the entrant and created within the 12 MONTHS prior to the closing date of the competition (October 1, 2013).
- 4 The single digital image must be between 1 MB and 3MB and in landscape orientation, not portrait orientation. That is, winning entries will be printed in colour on a landscape A4 page.
- 5 Save the image onto your computer with a filename in the following format: <Surname, Forename, title of the work.file extension>. For example, the 2013 Calendar Cover Artwork has the filename: <Lennon, Tony, Elizabeth and the Volcano - Lead White.jpg>
- 6 Include the filename when you upload your entry at www.volcanoartprize.com/submitentry
- 7 A completed entry form including the lead-safety theme of the entry, must be uploaded at www.volcanoartprize.com/submitentry by Monday October 1, 2012.
- 8 Once received, if your entry is considered to comply with these Conditions of Entry, it will be uploaded onto www.volcanoartprize.com/peopleschoice so web-users can "Like" it.
- 9 Once uploaded on to www.volcanoartprize.com/peopleschoice, web-users can vote on an entry – once only – by clicking on its "Like" button.
- 10 The judging will be done by the above-mentioned sole judge. The judge will select up to 36 finalists from all the entries to the competition. The judge will then select 12 winners from the finalists. The decision of the judge will be FINAL and no correspondence will be entered into in relation to the judge's decision.
- 11 All finalists and winners will be advised of the decision of the judge by email.
- 12 All entries will be displayed at www.volcanoartprize.com/peopleschoice until Friday 21 December 2012, allowing votes for the People's Choice Award.
- 13 All entrants hereby consent to their work being reproduced / web-published by The LEAD Group for the launch, in the calendar/catalogue and on The LEAD Group's websites and by the media in all related advertising and publicity (including online).
- 14 The LEAD Group will not reproduce / web-publish images depicting illegal activity or any images which are deemed unsuitable by the judge or The LEAD Group.

PRIZES:

- 1 The 13 winners will receive a prize of 5 copies of a colour-printed Calendar/Catalogue in which their artwork is featured (one per month). This prize has a value of \$100.
- 2 All 13 winners will have their work printed on the LANDSCAPE orientation A4-sized top half of an A3 page-opening, where the A4-sized bottom half shows a month of the year, in a 2014 catalogue/calendar and will have their work archived at <http://www.volcanoartprize.com/previouswinners>
- 3 All finalists' works will be accessioned into **The LEAD Group Art Collection**.
- 4 The Peoples Choice Award will be a Cash Prize of \$100.
- 5 The Peoples Choice Winner's image will appear on the cover of the 2014 Calendar/Catalogue for the 2013 Volcano Art Prize and be archived at <http://www.volcanoartprize.com/previouswinners>

KEY DATES:

STARTING DATE FOR UPLOADING ENTRIES: 3rd September 2012.

CALENDAR AVAILABLE FOR ORDER ONLINE: You can order a calendar at <http://www.volcanoartprize.com/purchasecalendar>

CLOSING DATE FOR UPLOADING ENTRIES FOR 2013 – Monday 2nd September 2013.

OFFICIAL LAUNCH 2012: 2:30 – 3:30pm Monday 22nd October 2012

The Parliamentary Secretary (to the Minister for Health NSW) Melinda Pavey awarded the 13 winners of the Volcano Art Prize (VAP) and launched the 2013 Lead-Safe World Calendar, during Lead Poisoning Awareness Week which ran from Saturday 20th October to Friday 26th October - in the Jubilee Room of Parliament House, Macquarie Street Sydney.

ONLINE VOTING FOR THE PEOPLES CHOICE AWARD DATES: Until Friday 30th November 2012 web-users can vote (once for each entry they "Like") at www.volcanoartprize.com/peopleschoice

PEOPLES CHOICE AWARD ANNOUNCED: Monday 3rd December 2012.

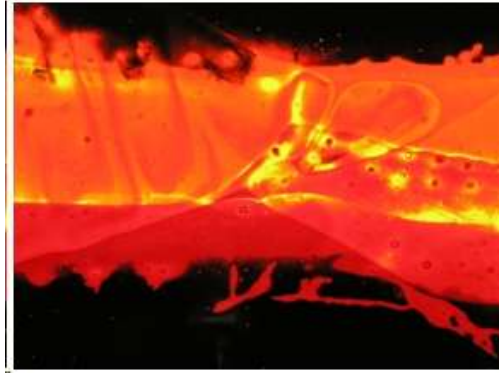
LEAD-SAFE WORLD CALENDAR 2014 LAUNCHED: during Lead Poisoning Awareness Week 2013, which runs from Sunday 20th October 2013 to Saturday 26th October 2013. This Calendar/Catalogue will have the 2012 Volcano Art Prize People's Choice Winner on the Cover and 13 winners from the 2013 Volcano Art Prize.

LEAD-SAFETY THEMES and Some of the 2012 Finalists:

See <http://volcanoartprize.com/lead-safety-themes/>

The following themes have been listed to help entrants visualise an art concept which illustrates a message: the lead-safety theme you choose to illustrate with your image is a vital part of your entry and the words of the lead-safety action can even be incorporated, if you wish, into your artwork. Entrants can create their own lead-safe behavioural-change message or choose one of the following themes for their image:

1. "In our lead-safe future, the only source of lead in air, will be volcanoes" (see Marc Grunseit's winning entry on this theme from the 2012 Volcano Art Prize, to the right)
2. "The most important lead test at any age, is a blood lead test - ask your doctor"
3. "If you live near an active volcano or a lead mine or lead smelter – ask your doctor for a blood lead test annually throughout your life"



4. "Replace lead on your roof with non-lead flashing / gutters / paint etc before installing a rainwater tank" (Finalist Peter Webb to left)

5. "Test traditional herbal or folk medicines for lead before taking them, or have a blood lead test if you already use them"
6. "Leadlighting can be made lead-safely in a properly equipped workshop"
7. "Don't melt lead or leaded e-waste at home - create a child-free lead-safe workplace or take it to a scrap metal recycler"
8. "Lead acid batteries should only ever be recycled in a regulated high-tech lead-safe smelter complex"
9. "Stay smart – live longer – protect your offspring – work lead-safe" (Winner Gary Lancaster of Lancaster Painters Australia Pty Ltd, using chemical stripper on lead paint, to the right)
10. "There's lead in cigarettes! Protect your family from tobacco smoke. Quit TODAY!"



11. "Test paint for lead before renovating. Never create lead paint dust or lead fumes."
12. "Lead causes early death in adults and IQ loss in kids. Keep your blood lead level below 2 micrograms per decilitre always."
13. "Give your kids nutritious meals and snacks before they play - an empty stomach absorbs more lead"
14. "Get your leaded ceiling dust professionally vacuumed by a member of the Australian Dust Removalists Association (ADRA)"
15. "Today you can buy artists paints that do not contain heavy metals like lead, but if you are



using leaded artists paints, make sure you never hold the paintbrushes in your mouth or get the paint in or on you" ("Lead's colour" by winner Luis Esteo Garcia, above)

16. "Buy lead-free glazes when making pottery or buy lead-free glazed pottery"
17. "Always buy lead-free products if they are available eg lead-free ammunition, crystal, fishing sinkers, jewellery, artists' paints, wheel weights, etc"
18. "You can test for many possible sources of lead in a child's environment with a LEAD Group test kit"
19. "The LEAD Group's Water DIY-Sampling Lab-Analysis Kits can be used to test lead and other metals in water"
20. "if you must remain living where lead dust falls from the sky all day, regular wet-cleaning is a vital part of keeping a child lead-safe"

Submit via the **ENTRY FORM** at <http://volcanoartprize.com/submitentry/>

Letter to The Hon. Tony Burke, MP: Please commit to a National Lead Poisoning Awareness Week for Australia



*The Hon. Tony Burke, MP
Minister for Sustainability, Environment, Water, Population and Communities
PO Box 6022, House of Representatives
Parliament House Canberra
ACT 2600*

Re: please commit to marking a National Lead Poisoning Awareness Week, beginning Oct 2013

Dear Mr Burke,

Thank you so much for your "gift" to us of another year's funding for the Global Lead Advice and Support Service.

On Monday, 22nd October 2012, the 2013 Lead-Safe World Calendar and inaugural Volcano Art Prize were launched during The LEAD Group's celebration of the 15th anniversary of Lead Poisoning Awareness Week, hosted by Melinda Pavey, New South Wales Parliamentary Secretary for Regional Health, at NSW Parliament House.

As was announced at the launch by Louise Kristensen, a Macquarie University lead researcher at Broken Hill, in recent years, we have also put in place a process through the World Health Organisation and United Nations Environment Programme to declare an international global day of action to prevent lead poisoning.

Our contact at WHO and UNEP, Lesley Onyon, has suggested that we ask Australian governments for a commitment to lead poisoning awareness week nationally and at state level, and to commit to providing other national governments with any documents created in that process, which may be helpful to those other countries in developing their own national days or weeks to mark lead poisoning awareness.

Specifically, In Bangkok in July of this year, Professor Taylor of Macquarie University and The LEAD Group's Committee and Technical Advisory Board attended, on behalf of The LEAD Group, the second meeting of the Global Alliance to Eliminate Lead in Paint (GAELP).

Having received an email on Lead Poisoning Awareness Day, 20th October 2012, from Lesley Onyon, Senior Programme Officer, United Nations Environment Programme (UNEP) and World Health Organisation (WHO) (the organisers of the GAELP meeting), Louise Kristensen reported at the launch this week, the positive discussion that took place in July concerning the need to continue to raise awareness in every country of the issue of lead contamination and lead paint specifically. The Bangkok meeting also discussed ways of approaching the naming of an international week for lead action.

The proposed approach that was supported at the meeting, was to work with countries on initiating their own days of action by providing and sharing material. Those countries who can speak about the positive outcomes brought about by their state or national Lead days or weeks would help argue for an international week to be recognized internationally. It is probably a little too ambitious to expect that an international week could be marked in 2013. However, the representative in the Bangkok meeting from the USA, agreed to ask US government representatives to get support from other countries so that the topic might be discussed at a future World Health Assembly. I have not heard how she progressed with this so far.

The resolution adopted at ICCM3 – also expresses support for the proposal of the international day.

The Resolution on lead in paint - endorsed by the parties at the International Conference on Chemicals Management Third session (ICCM3) on Friday 21st September 2012 “expresses support for the Global Alliance’s (GAELP’s) proposal to establish an international lead poisoning prevention day of action, with initial focus on the elimination of lead in paints, and encourages all Governments, industry and civil society organizations in all regions to organize related activities in cooperation with the Global Alliance.”

Lesley Onyon’s email of 20th October 2012 (the 115th Anniversary of the publication in an Australian medical journal by a Brisbane doctor of the world’s first article on lead poisoning in children) also noted: [Australian government ministers could be asked] “to commit to sharing the materials that will be developed in Australia for Lead Poisoning Awareness Week, with other countries who are interested in establishing their own national days of action as part of a movement to see an international week recognized as soon as possible?”

I formally now ask you if your Department could be the first environment department in Australia to commit to marking Lead Poisoning Awareness Week annually, on this the 15th Anniversary of it first being marked by the then NSW Health Minister Dr Andrew Refshauge (Labor) in 1997?

If lead-safety messages for renovators, consumers, locavore gardeners and egg producers, people who drink rainwater off old buildings, and for those living near lead in air sources, were coming from multiple agencies and organisations, we could help many more Australians and people overseas to reach their IQ and longevity potentials.

Please find enclosed our gift to you – a 2013 Lead-Safe World Calendar.

My request to you is that you make a commitment to assist State governments and the Federal government to raise awareness about lead contamination and environmental protection from lead during the week of 20th to 26th October 2013.

I look forward to your reply,
yours sincerely

Elizabeth O'Brien
President, The LEAD Group Inc
Ally, Global Alliance to Eliminate Lead in Paint (GAELP)
Partner, Partnership for Cleaner Fuels and Vehicles, United Nations Environment Programme
26th October 2012

Suggestions for young artists who want to enter the Volcano Art Prize (VAP)

By Tony Lennon and Elizabeth O'Brien

The topics for lead-safety messages listed below have been designed to direct young entrants to subjects we feel are relevant to the behaviour changes that will be necessary in creating a lead-safe world and also suitable for imaging and creating an artwork. Each of the 12 winning entries will be used in a landscape A4 page illustrating a month of the year for the proposed 2013 Calendar/Catalogue and the winners' lead-safety message, name and age (if under 18 years of age) and the title of their artwork will be printed next to their image.

The examples given below are just suggestions to help you focus on a topic and it's really up to you and your creative genius to come up with a winning message and image. **Good Luck!**

1 In our lead-safe future, the only source of lead in air, will be volcanoes: The Volcano Art Prize is named after a volcano because they are a natural source of lead in the air and if in the future, volcanoes were the only source of lead in the air, we'd know that humans had managed lead to the point where it could be used safely. The LEAD Group envisions a time when all the lead in the world that has already been mined and smelted, is made into lead acid batteries and after they've been used (to start our cars and trains and to store our solar and wind energy etc) they'll be recycled lead-safely and made in to new lead acid batteries. Current news: August **eruption in New Zealand of Mt Tongariro**. Did you know that Australia is the home of many extinct volcanoes and you can even see a lava flow on the foreshores of Sydney's famous Bondi Beach?

2 Leadlighting: The art of lead lighting has produced many fine works of window art all over the world. But it has been a very dangerous craft to participate in until today when we can now do it safely, in a workplace properly set up for the purpose. See <http://www.lead.org.au/fs/fs18.html>

3 Lead Flashing: Buildings constructed in the 19th and 20th centuries in Australia typically had lead flashing on the roof (thin strips of grey metal around the chimney or where two sections of roof meet, to stop the rain getting into the ceiling void). Much of this lead flashing remains on buildings even when a rainwater tank is added to the building – thus contaminating the drinking water with lead. Can you image any buildings with lead flashing and a rainwater tank in your area?

4 Blood Lead Tests: You can go to your doctor to have your blood painlessly tested for lead. The doctor may refer you to a clinic where they will take some of your blood and send it to a laboratory for testing. How would you feel about having a blood lead test? Maybe a pretend picture of you being tested by a friend who is dressed like a doctor or nurse?

5 Old Lead Paint: Many old houses in Australia have peeling lead paint on their walls or roof. Image an old building in your area which may have peeling lead paint on it. Or one that is having the peeling paint safely wet-scraped off onto plastic sheeting, or is being safely stripped of paint using chemical strippers. (see 2012 winner Janet Richardson photo to the right)





6 Lead in Cigarettes: Cigarettes also contain lead. Why not photograph a shop that sells cigarettes or dirty cigarette butts and packets in your area? Or image signs forbidding the smoking of cigarettes. Or for inspiration, see the classic painting of a skeleton smoking by Vincent Van Gogh (yet another painter who is thought to have gone mad due to lead poisoning from the lead in his paints) at [www.lead.org.au/Taylor Tobacco & Lead Toxicity 20101001.pdf](http://www.lead.org.au/Taylor_Tobacco_&_Lead_Toxicity_20101001.pdf) (see to the left)

7 Traditional Medicines may contain lead and should be tested before use: Do a websearch to find out which medicines have been tested and found to be leaded. Eg Tiro is used in Nigeria as a folk remedy to promote visual development, and was

responsible for the lead poisoning of a 6 month old baby boy in the USA – see http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6130a3.htm?s_cid=mm6130a3_e and there are many other examples including one fatal lead poisoning in a child given a traditional medicine in India – see

<http://ukpmc.ac.uk/articles/PMC2538609/reload=0;jsessionid=8bStOmN8M3jys0twQ46O.16>

8 Lead acid batteries used in motor vehicles should be collected and should only be recycled by experts: Take images of used car batteries you see discarded or being used as door-stops etc in your area and make a montage of the images.

9 Don't ever melt lead down at home: carefully dispose of the metal by taking it to a scrap metal collector. Make an image of scrap lead metal like fishing sinkers, lead bullets or lead shot, lead flashing from a roof or under a window, used lead acid batteries, old lead pipes, etc.

10 Port Pirie which is in South Australia, processes the lead ore from Australian mines and many of the inhabitants have been lead poisoned over the last 123 years. Take some images of Port Pirie showing what it is like to live in the shadow of the world's largest lead smelter.

11 Today you can buy artists paints that do not contain heavy metals like lead, but if you are using leaded artists paints, make sure you never hold the paintbrushes in your mouth or get the paint in or on you.



The great Spanish painter **Francisco Goya** may have gone mad and died of lead poisoning because he made his own artists paints - see http://en.wikipedia.org/wiki/Francisco_Goya (see to the left) - You could take some images of Goya's work and create your own digital works. Robert Hannaford is an Australian artist who suffered from cancer probably because of the lead and cadmium in his artists' paints, and his habit of holding the paint brushes in his mouth. See <http://australianetwork.com/nexus/stories/s2097088.htm>

12 Always buy lead-free products if they are available eg lead-free ammunition, crystal, fishing sinkers, jewellery, artists' paints, wheel weights, etc. Spent lead bullets, shot and pellets as well as lost fishing sinkers are poisoning birds and animals. For instance, see how American condors have suffered at <http://www.wired.com/wiredscience/2012/06/condors-and-lead-bullets/>

Yet, more and more, non-toxic products are coming on to the market. See an article about artists substituting their toxic products for safer products at <http://www.nowtoronto.com/columns/ecoholic.cfm?content=182926>

Heavy metal pigments used in silk printing

Each of the following articles is a collection of extracts from hard copy references held by the Sydney Powerhouse Museum Library, on silk printing in past decades. Collated and typed by Filip Szczepanski, LEAD Group volunteer, and located by Elizabeth O'Brien Manager, Global Lead Advice and Support Service (GLASS), Sydney, Australia with assistance from Powerhouse Museum Librarian Karen Johnson.

Many thanks to Karen for her encyclopedic knowledge of the Powerhouse Museum library holdings.

Glossary of Graphic Arts Terms re: heavy metals (used in the Printing Ink Industry)



84-87

Barytes (see Blanc Fixe)

Natural barium sulphate used as an ink pigment and a white extender. It is considerably more abrasive and gritty than precipitated barium sulphate.

Blanc Fixe

Precipitated barium sulphate used as a semi-transparent extender in printing inks.

Cadmium Red

An inorganic red pigment which is resistant to light, heat and soap.

Cadmium Yellow

An inorganic yellow pigment which is resistant to light, heat and soap.

Chrome Green

A fairly light resistant opaque green pigment made by mixing freshly precipitated iron blue and chrome yellow.

Chrome Yellow

A light resistant opaque yellow pigment composed essentially of lead chromate.

Cobalt Drier

A material containing chemically combined cobalt used to accelerate oxidation and polymerization of an ink film.

Driers

Substances added to inks to hasten their drying. They consist mainly of metallic salts which exert a catalytic effect on the oxidation and polymerization of the oil vehicles employed.

Eosine

A fugitive organic dyestuff used to produce a brilliant red pigment for printing ink.

89-90

Inorganic Pigments

A class of pigments used in printing ink manufacture consisting of compounds of the various metals. Example: Chrome Yellow.

Iron Blue

A class of light fast, dark blue pigments, essentially ferric-ferrocyanide.

Iron Oxides

A series of compounds of oxygen and iron occurring naturally or manufactured, used as printing ink pigments. They vary in hue from yellow to brown, to red, to black. Some iron oxides have special properties that make them useful in magnetic printing inks.

Lead Driers

Chemical combinations of lead with various organic acids that are used as driers for printing ink.

Leafing

A phenomenon whereby metallic pigments form a layer parallel to the surface of the print thereby yielding a high metallic luster.

Linoleates

Generally the salts or soaps of linseed fatty acid. Cobalt, lead, and manganese linoleates are widely used as driers in printing inks.

Lithol Red

A relatively brilliant, moderately lightfast organic red pigment derived from a dyestuff by treatment with metallic salts. It varies from orange to deep maroon and is the most widely used red pigment.

Lithopone

Formerly a widely used white pigment consisting of varying percentages of barium sulfate and zinc sulfide. Rarely used in printing inks today. Largely replaced by titanium dioxide (which see).

Magnesium Carbonate

A transparent white extender used in printing inks, often called magnesia.

Manganese Driers

A material containing chemically combined manganese used to accelerate the oxidation and polymerization of an ink film.

90-92, 95

Metallic Inks

Inks composed of aluminum or bronze powders in varnish to produce gold or silver color effects.

Molybdate Orange

An inorganic pigment used to produce opaque orange inks and red inks. It consists of a mixture of lead chromate and lead molybdate.

Naphthenate Driers

Compounds of naphthenate acid with metals, usually lead, cobalt, or manganese used to accelerate the oxidation of the ink film.

Ochre

Naturally occurring yellow iron oxide pigment.

Permanent Violets

1. A light resistant, tungstated or molybdated methyl violet pigment used in printing inks.
2. Carbazole violet.

Phloxine

Blush red pigment used for process red inks. The hue is often referred to as magenta. The term phloxine is applied to the lead lake of eosine.

Prussian Blue

A red shade iron blue pigment.

Vermilion

A red mineral pigment consisting of a sulfide of mercury.

Zinc Oxide

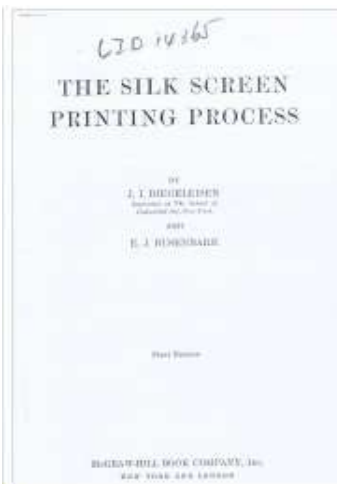
An opaque inorganic white pigment used in inks.

Zinc Yellow

A yellow pigment consisting essentially of zinc chromate.

An extract from **The Silk Screen Printing Process, 1938**

By Jacob Israel Biegeleisen, E. J. Busenbark, Instructor at The School of Industrial Art, New York



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MAKE-READY AND PRINTING METHODS

Imitation Frosting – There are also several ways to make imitation frosting effects. Special lacquer pastes are sold for this purpose. Or, extender, with a small amount of varnish and drier added, may be used as a medium. Another medium is prepared by grinding an inert substance, such as whiting, asbestine, magnesium carbonate, or linolith, in a mortar with mixing varnish.

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TEXTILE PRINTING IN COMMERCIAL WORK

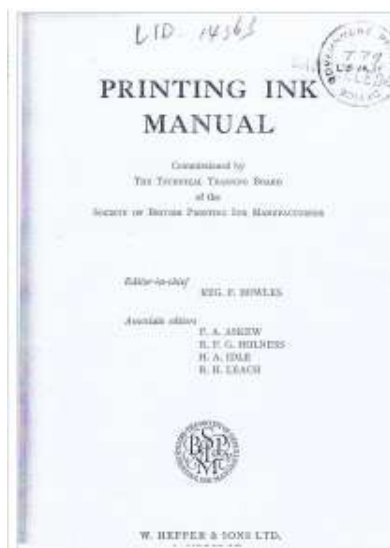
Dyes

Application Chrome Colors – These are used for printing on cotton and low-priced silks and are not very fast. Chrome colors are used only on light backgrounds. The dyestuff is cooked in water to a boil, then a quantity of thick gum tragacanth is added as a thickening agent.

Repitigen or Caustic Colors – These colors are of recent development and are now used on perhaps 90 per cent of the materials used for draperies, handkerchiefs, tablecloths, etc. They are absolutely tub-fast and are very brilliant. Because of the caustic nature of these dyes, the life of the stencil is comparatively short.

An extract from Printing Ink Manual, 1961

By Editor-in-chief, Reginald F. Bowles; Associate Editors: F.A. Askew; R.F.G.HOLNESS; H.A.IDLE;
R.H.LEACH, commissioned by the technical training board of the Society of British Printing Ink
Manufacturers



RAW MATERIALS

265-266

YELLOW PIGMENTS

Benzidine Yellows

Origin: By coupling of tetrazo-benzidine with aceto-acetanilide derivatives.

Hue: Yellows varying from lemon to golden yellow and in opacity from semi-opaque to transparent.-

Bulk value: 85. Concentrated paste: 40 per cent.

Application: Widely used in many types of inks. Particularly useful for soap- and heat-resistant inks. Used to replace chrome yellows

where lead pigments are objectionable.

Lead Chrome Yellows

Origin: By co-precipitation of lead chromate and lead sulphate together with basic salts.

Hue: Yellows ranging from pale greenish yellow to deep orange, all opaque.

The individual pigments are known as: primrose chrome, lemon chrome, golden chrome (medium chrome), orange chrome.

Bulk value: 16-20. Concentrated paste: 80 per cent.

Application: Their high specific gravity necessitates attention to formulation to obtain the best working qualities. Being compounds of lead, the pigments are not suitable for use in foodstuff inks. They catalyse the oxidation of drying oils and formulae must be adjusted accordingly.

Tartrazine Yellow Lakes

Origin: A dye-alumina complex prepared by the precipitation of tartrazine with barium chloride in the presence of alumina.

Hue: A range of shades varying from lemon yellow to orange.

Bulk value: 40 + according to extender. Concentrated paste: 40 per cent.

RAW MATERIALS

267-269

Cadmium Yellows and Reds

Origin: Mixtures of cadmium sulphide, cadmium selenide and lithopone.

Hue: A range of colours varying from pale greenish yellow to orange, scarlet and deep bluish red. All opaque.

Bulk value: 23. Concentrated paste: 65 per cent.

Application: Used in inks where resistance to heat and light and alkalis are of great importance. Not acid-resisting. Cadmium pigments are resistant to organic solvents and oil. Must not be mixed with lead pigments, being sulphides.

Iron Oxides, Ochres, Umbers, Siennas, etc.

Origin: Iron oxides and silicates.

The qualities used in printing inks nowadays are mostly synthetic forms, prepared by heating ferrous sulphate, or precipitation of the hydroxide followed by ignition.

Hue: Colours ranging from dirty lemon yellow to deep reddish brown.

Bulk value: 25. Concentrated paste: 75 per cent.

Application: Coarse pigments, difficult to grind. Their use is limited. Also used in silk-screen inks.

Persian Orange

Origin: Azo colour based on acid dyestuff (barium salt). Made by coupling diazosulphanilic acid with B naphthol.

Molybdate Orange

Origin: Lead chromate, lead molybdate and lead sulphate in the form of mixed crystals.

Bulk value: 18. Concentrated paste: 80 per cent.

Application: A very opaque orange pigment of wide general use. Limitations exactly as chrome yellows.

RAW MATERIALS

333-334

DRIERS

Metallic driers are used in two forms, as oil-soluble soaps, which comprise the liquid driers, and as dispersions in oils of inorganic salts, which comprise the paste driers.

The soluble driers are prepared by the conversion of suitable organic acids to their heavy metal salts or soaps.

The liquid driers are prepared with metal concentrations of the order of 3-8 per cent, with the exception of lead, 25 per cent. At such metal concentrations, the addition of between 0.5-4 per cent of driers is the amount normally necessary to achieve adequate drying in printing ink films.

Inorganic metal salts when dispersed in drying oils are converted to a limited extent to the soluble soap. The dissolved soap is in heterogeneous equilibrium with the insoluble metallic salt. Such a paste dries slowly but has the advantage of acting as a source of metal to replace adsorbed soluble drier.

LIQUID DRIERS

The metals most widely used in the preparation of liquid driers are the following:- Cobalt, manganese, lead, zinc, calcium, cerium, zirconium and lithium.

Cobalt forms a powerful drying catalyst, violet in colour. It is the most widely used of the metallic driers. Its chief limitations are its tendency to discolour tints and whites, and its ready solubility in inorganic acids.

Manganese is generally less powerful in its action than cobalt. It is brown in colour, affects pale colours less than cobalt, and is less readily leached out of lithographic inks. Manganese usually requires lead to be present in considerable quantity to act as an activator.

Lead is a slow-acting drier, of pale colour, now very limited in use in view of the many lead-free specifications for printing inks. It is unsuitable for use in alkyds, being precipitated as lead phthalate. It is frequently used in conjunction with manganese.

Cerium, zirconium and lithium are driers of medium efficiency and pale colours. They have replaced lead in alkyd vehicles and are usually used in conjunction with cobalt or manganese.

Calcium and zinc are both poor catalysts and it is doubtful whether they are of much value in printing ink films as driers.

RAW MATERIALS

334-335

Before the introduction of the present synthetic type of vehicle, the paint industry drew a distinction between through drying and surface drying or skinning. Lead and zinc in particular were said to promote through drying, and cobalt and manganese surface drying.

The linoleates prepared from linseed oil fatty acids are perhaps the most widely used of the soluble driers. The metal content is usually 3 to 6 per cent for all metals except lead which is commonly 16 to 24 per cent. Linoleates are mild in odour and of viscosity of the order of 10-60 poises.

Naphthenates, prepared from naphthenic acids, are supplied as solutions in hydrocarbon solvents, and are much lower in viscosity than the linoleates, usually less than 10 poises. The metal content is much higher and can go up to 12 or 16 per cent for cobalt and manganese. Their rather strong odour limits their use, but their high metal content offers economic advantages.

PASTE DRIERS

Paste driers are prepared by grinding mineral salts of lead and manganese in linseed oil varnishes. Lead acetate and borate and manganese borate are commonly used. The percentages vary with individual formulators, but are of the order of 40 per cent lead acetate, 8 per cent manganese borate. Small amounts of soluble manganese driers may also be added. Cobalt is not normally used in paste driers.

Cobalt driers are very inclined to yield dried prints which are not receptive to overprinting.

LITHOGRAPHIC INKS

430-432

Rub Resistance

The whole problem of producing rub-resistant inks is very complicated owing to the large number of variable factors involved. Work carried out by the author shows that individual pigments vary widely in respect of rub resistance and that this variation is not related simply to particle size. Lead chromes, for example, which have a comparatively large particle size, are capable of yielding inks of very good rub resistance.

Inks for Food Wrappers - Toxicity

The number of toxic ingredients of present-day printing inks is small, being virtually limited to compounds of lead and to a lesser extent, zinc. Lead may be present in the form of lead-chrome pigments or in the form of soluble lead soaps as driers. Zinc may be present as a pigment as in zinc oxide or sulphide (in lithopone) or as a soap in a resin (eg. Zinc resinate).

Inks for immediate wrappings must be applied to the outside of the wrapper. Inks for this purpose should be formulated with materials other than those known to be toxic, and in particular, pigments, driers and plasticisers should be selected accordingly; for example, materials containing significant quantities of arsenic or lead should not be used.

It can be calculated that an ink with a lead content of 1 per cent printed over an area of 4 sq. in. would add less than one half-part per million of lead to a quarter pound packet of butter. If, therefore, the whole of the printing ink were consumed with the butter, the contribution of lead from the printing ink would fall below the recommended limit. With the removal of the wrapper in the normal way before eating, it is difficult to visualise any possibility of lead contamination of the butter from the ink, sufficient to influence materially the acceptability of the butter in accordance with the 'Revised Recommendations for Limits of Lead Content of Foods.'

"The recommended limit for lead in butter is recorded in 'Food Standards Committee Report on Lead, 1954 – Revised Recommendations for limits of Lead Content.' 14.-(11). Edible Oils and Fats. 0.5 parts per million by weight.

LITHOGRAPHIC INKS

433

The 'Food Standards Committee Report on Lead, 1954,' makes the following to ice cream and iced lollies:

15.-(2) 'We feel that the lead limit for ice cream and iced lollies should be put as low as possible having regard to the large consumption by children.'

It is as well to remember that there is no evidence of any person in this country having suffered any ill effects which may be attributed to the use of toxic ingredients in inks. Nevertheless, there has been a considerable volume of correspondence on the matter and certain food manufacturers do specify that inks for packaging their products should be "lead-free." In practice, it is virtually impossible to guarantee complete freedom from lead and certain maxima expressed in terms of lead per million are used.

INKS FOR SPECIAL PURPOSES

532-533

COLLOTYPE INKS

The machines used are similar in principle to a lithographic flat-bed press and the output is low and may only run into a few hundred copies a day. Both the damping and inking have to be done with exceptional care and control of pressure, the inks have to be stiff, concentrated, and non-abrasive.

Highly concentrated offset inks, bodied still further to stiffer consistency by grinding in a proportion of a fine extender, such as alumina hydrate, are indicated.

Example:

Blue Collotype Ink

Iron blue pigment:	56 per cent
Alumina hydrate:	6 per cent
Lithographic varnish (40 poise):	32 per cent
Refined linseed oil	6 per cent

100 per cent

With pigments which do not accelerate drying, a small amount of paste drier (Pb/Mn) should be added (eg. 2 ½ per cent).

INKS FOR SPECIAL PURPOSES

535-536

INORGANIC PHOSPHORESCENT INKS

Phosphorescent inks are used for special purposes, the pigments being usually zinc sulphides containing small amounts of impurities which activate the molecule when irradiated, so that visible light is emitted. By choice of the metal sulphide, the activating impurity, and the conditions of preparing the pigment by calcining, various colours of emitted light can be produced and the pigments so formed are used for display or identification purposes.

INK AND FOOD

Many foodstuffs manufacturers and confectionery-makers specify the limits of such elements as lead and arsenic for printed matter used by them, and sometimes attempt to apply to inks the standards which should properly relate to package contents rather than the wrappings. Certain steps can be taken by the ink maker, such as avoiding the use of lead or cadmium pigments, but it is extremely doubtful if there is any risk attracting to the use of these in normal printed wrappings.

XEROGRAPHY

A plain surface, such as metal or paper, to which a coating containing selenium or zinc oxide has been applied, has a surface electrical charge applied to it by passing under a high voltage discharge.

An extract from *Printing Ink Handbook, 1958*

By National Association of Printing Ink Manufacturers (U.S.).



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WHITE PIGMENTS

Opaque white pigments commonly used in printing inks, listed in order of decreasing opacity are:

- Titanium Dioxide – Cover White
- Zinc Sulfide
- Lithopanes
- Zinc Oxides

Transparent white pigments commonly used in printing inks, listed in order of decreasing transparency are:

- Alumina Hydrate – often called “Hydrate”
- Magnesium Carbonate – often called “Magnesia”.

- Calcium Carbonate
- Blanc Fixe
- Barytes
- Clays

INORGANIC COLOR PIGMENTS

Chrome Yellow is generally lead chromate, modified with other lead compounds, especially lead sulfate.

Chrome Orange and Molybdate Orange are modified lead compounds similar in structure to chrome yellow.

FLUSHED COLORS

Some chrome colors tend to darken on exposure to light, and darken considerably on exposure to sulfur gases in the air.

Cadmium (Selenides) Yellows, Oranges and Reds are very fast to light and have excellent soap and alkali resistance.

Cadmium-Mercury Reds are among the newest additions to the pigment color field. Their properties are very similar to the older Cadmium Reds (Cadmium Selenide).

METALLIC POWDERS

“Gold” is generally a mixture of brass flakes, copper flakes, and other metals mixed to obtain varying shades of “gold” such as Rich Gold and Pale Gold.

14

ORGANIC COLOR PIGMENTS

The organic Yellows pigments (Yellow Lakes, Hansa Yellow and Diarylide Yellows) are generally used as replacement for Chrome Yellows in order to avoid the use of lead compounds.

Letters re: warning label requirements for artists paints in Victoria, Australia



In March 2012, Elizabeth O’Brien received an enquiry from an importer of artists paint pigments in the Australian state of Victoria

LETTER ONE

From: Elizabeth O’Brien

Sent: Tuesday, March 20, 2012 5:36 PM

To: Victorian artist’s paints importer

Subject: Fw: Info Pack 14 - VIC & Australia's legislation banning lead compounds in ALL industrial paints and inks

Dear David,

I’ve spent a number of hours researching your question today, but the best info I’ve found to date doesn’t actually answer it – thus my email below to DPU Victoria - Drugs and Poisons Unit, Department of Health, Victoria.

Hopefully they will provide an answer soon and then I will forward it to you.

In the meantime, we’ve extracted all the clauses on lead (and other metals) and paint from The Poisons Standard 2011 which consists of the Standard for the Uniform Scheduling of Medicines and Poisons No 2 (the SUSMP 2) [PREVIOUSLY SUSDP], in the file named: <Poisons Standard or SUSMP Extracts re Paint & Lead 20110802.doc>. You will note that graphic materials such as poster paint are specifically excluded from the definition of “paint”.

The Victorian “Drugs, Poisons and Controlled Substances Regulations 2006” do not call up / adopt the “Uniform Paint Standard” but nor do they mention the words artist or paint or ink or lead or pigment or graphic. So it will be interesting to receive the written advice from the Department of Health. And I will certainly reply to their email with feedback suggesting that they make it MUCH easier to find the list of poisons which their regulations cover.

I can totally understand why you had so much trouble finding the rules which relate to your proposed import of lead compounds for artist's paints.

Cheers

Elizabeth O'Brien

Manager, Global Lead Advice & Support Service (GLASS) run by The LEAD Group Inc.

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We lead the way | We educate | We advocate | We'll work until the world's lead-safe

LETTER TWO

From: Elizabeth O'Brien

Sent: Tuesday, March 20, 2012 4:40 PM

To: Victorian Drugs and Poisons Unit

Subject: Info Pack 14 - VIC & Australia's legislation banning lead compounds in ALL industrial paints and inks

Dear DPU Victoria,

As you may know, NICNAS has instituted a national ban on lead compounds in industrial paints and inks, but that ban of course excludes artists paints (since they are not industrial paints). Nevertheless, the ban has caused concern for a lead pigment exporter overseas when a Victorian artists paints manufacturer has tried to import lead pigments from the exporter. Can you please advise in writing, with exact reference to regulations and/or the SUSMP, as to whether it is legal to import lead compounds for artists paints in to Victoria?

When you send your answer, I will add it to the following text which forms the basis of this "Info Pack 14 - VIC & Australia's legislation banning lead compounds in ALL industrial paints and inks."

The gazette notice about banning lead compounds in all industrial paints and inks imported into, made and sold in Australia as of 1st January 2010 is called: "NOTICE OF PROPOSED VARIATIONS TO THE AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) FOR CERTAIN LEAD COMPOUNDS IN INDUSTRIAL SURFACE COATINGS AND INKS" and can be found online on the website of the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) at:

http://www.nicnas.gov.au/publications/Chemical_Gazette/Chemical_Gazette_February_2008.asp

Comments from the Australian Paint Manufacturers Federation (APMF) can be found at http://www.pc.gov.au/__data/assets/file/0004/68386/sub008.rtf (and a pdf version is attached), as well as a news article about the ban by the APMF which was originally web-published at http://www.apmf.asn.au/html/lead_in_paint.html but is no longer online, so is attached as a doc.

The above-mentioned 2007 APMF comments include the following:

Victoria: Department of Human Services

The Manager, Drugs and Poisons, Department of Human Services reported:

"The Drugs, Poisons and Controlled Substances Act.1981 does not adopt Appendix I Uniform Paint Standard of the Standard for the Uniform Scheduling of Drugs and Poisons".

Yours Sincerely

Elizabeth O'Brien

Manager, Global Lead Advice & Support Service (GLASS) run by The LEAD Group Inc.

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LETTER THREE

From: Drugs and Poisons Unit, Department of Health, Victoria

Sent: Friday, March 23, 2012 3:43 AM

To: 'Victorian artist's paints importer' ; mailto:Elizabeth O'Brien ; Cc: an Artists paint pigments exporter (outside of Australia)

Subject: RE: Info Pack 14 - VIC & Australia's legislation banning lead compounds in ALL industrial paints and inks

Hello all,

I based my initial question on The Australian Poison Standard, which does not seem to differentiate between industrial and consumer products.

Appendix C of this Standard is the "List of poisons prohibited from sale, supply or use because of their known potential for harm to human and/or animal health" What first caught my attention was the fact that Appendix C of the Poison Standards includes the entry:

LEAD COMPOUNDS in paints, tinters, inks or ink additives except in preparations containing 0.1 percent or less of lead calculated on the non-volatile content of the paint, tinter, ink or ink additive.

However, if by definition an artist paint is considered a "graphic material" as defined in the Standard's Definitions as:

"Graphic material" means the material which is to be deposited on another material by a graphic instrument during writing, drawing or marking and includes cores of pencils, school pastels or crayons, blackboard chalks, finger or showcard colours, poster paints and watercolour blocks.

Then, it would not be caught by Appendix C, because "Graphic Materials" are excluded from the Standard's definition of paint, which is:

"Paint", without limiting the ordinary meaning, includes any substance used or intended to be used for application as a colouring or protective coating to any surface but does not include graphic material or paints for therapeutic use.

If Williamsburg Oil Colors are indeed Graphic Materials and Not Paint, then it appears they should be labeled as a Schedule 6 poison under the heading:

† LEAD COMPOUNDS

If so, then it appears the correct label would carry the following elements, based on the guidelines of the Standard:

POISON

KEEP OUT OF REACH OF CHILDREN

Contains >30% LEAD

Avoid Eye and Skin Contact. Wash immediately with Soap and Water.

For advice, contact a Poisons Information Centre (e.g. phone Australia

131 126; New Zealand 0800 764 766) or a doctor (at once).

Please advise if you agree. If so, I will have these labels produced. If not, please provide your assessment and recommendations.

Sincerely,
[signed by

LETTER FOUR

From: Elizabeth O'Brien
Sent: Friday, March 23, 2012 7:34 PM
To: an Artists paint pigments exporter (outside of Australia)
Cc: Drugs and Poisons Unit, Department of Health, Victoria
Subject: New suggestion for a warning label for artists paints

Dear Sir,

I would wait before printing up those labels! The Victorian regulations don't adopt all of the Australian Poisons Standard 2011 so you will need to wait until DPU finds the exact clauses in their "Drugs, Poisons and Controlled Substances Regulations 2006" which relate to your question, before you can find out what wording to put on the labels. If another artists' paints manufacturer in another Australian state or territory wants to import your pigments, you'd have to go through this same enquiry process with that jurisdiction. The various clauses of the Australian Poisons Standard only become mandatory IF they are adopted by the state or territory regulations. Regrettably, we don't have your neat US system of federal regulations for issues like this. It's all due to the Constitution....

It is my understanding that the only use that can be made of the Australian Poisons Standard in EVERY jurisdiction in Australia is in a litigation process where, let's say, the lawyer representing an artist who had heavy metal poisoning because he habitually licked his brush to make a fine point, or held his brushes in his mouth, could argue that the state labelling regulations were too lax so the Poisons Standard, being more stringent, should have been implemented when labelling the artists' paints.

You are very wise to be taking so much care to get the wording right. You've made me realize I should try to contact Robert Hannaford (pictured: Photo:Tubes by Robert Hannaford is a self-portrait of the artist struggling to overcome cancer.) You can read his story at <http://www.abc.net.au/news/2008-01-04/hannaford-celebrates-art-and-life/1002598> and it includes: "It's most likely [Robert Hannaford's] cancer was caused by the lead and cadmium in the oil paints the artist absorbed by holding brushes in his mouth. A habit even his subjects [including ex Australian Prime Minister Paul Keating] warned him about." This all makes me wonder what the labelling requirements for artists paints are, in the state of South Australia (where Hannaford lives). I'll have to look in to it.

And that brings me to another suggestion for you. Would there be any harm in David putting a warning on his products, in addition to the required warning, along the lines of: "POISON – These paints can cause heavy metal poisoning if even minute amounts are swallowed or absorbed through the skin. Do not hold your brushes in your mouth. Never use your lips or bare fingers to make a fine point on the brush. Don't allow the paint to remain on your skin."

In other words, the resulting warning label might be something like:

POISON

KEEP OUT OF REACH OF CHILDREN

Contains >30% LEAD

This product can cause Heavy Metal Poisoning if even Minute Amounts are Swallowed or Absorbed through the Skin. Do not Hold your Brushes in your Mouth. Never use your Lips or Bare Fingers to make a Fine Point on the Brush. Don't Allow the Paint to Remain on your Skin. Avoid Eye and Skin Contact. Wash immediately with Soap and Water.

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor (at once).

I can send you our Info Pack on skin absorption of lead if you would like a copy.

Yours Sincerely

Elizabeth O'Brien

GLASS

www.lead.org.au

From: Victorian artist's paints importer

Sent: Tuesday, March 20, 2012 2:50 AM

To: an Artists paint pigments exporter (outside of Australia)

Subject: Fwd: Info Pack 14 - VIC & Australia's legislation banning lead compounds in ALL industrial paints and inks

Begin forwarded message:

Letter to The Honorable Anthony Roberts re: lead in consumer products.

From: The LEAD Group Inc

Sent: Tuesday, July 31, 2012 4:14 PM

To: The Honourable Anthony Roberts

Cc: Choice Magazine (ACA); Jo Immig (President, National Toxics Network)

Subject: Can NSW please be the California of Australia re: lead in consumer products, esp. jewellery?

To The Honourable Anthony Roberts,
NSW Minister for Fair Trading

Dear Minister,

Can you please ask Product Safety and Standards section of NSW Fair Trading, to investigate using the California state legislation on lead in consumer products as a role model, for creating AND policing stringent regulations on lead in consumer products, especially lead in jewellery?

Please see "APNewsBreak: Calif. tests show lead in jewelry" reported this month, at

<http://www.sfgate.com/default/article/APNewsBreak-Calif-tests-show-lead-in-jewelry-3711845.php>

which includes:

"State investigators uncovered hundreds of lead-laced trinkets marketed to children and adults, including some pieces contaminated with lead levels more than 1,000 times the legal state limit.

"The state was expected to file a lawsuit Tuesday against 16 companies — retailers, wholesalers, suppliers and distributors — doing business in Los Angeles and elsewhere. The companies are accused of violating lead standards and engaging in deceptive practices by falsely advertising tainted jewelry as lead-free.



“It’s against the law to make, ship or sell jewelry that contains dangerous levels of lead. Children’s jewelry cannot contain lead content exceeding the legal state limit of 600 parts per million. For adults, the limit is 60,000 parts per million.” (see photo by Ardhika Wira to the left)

Wouldn’t it be too tragic for you to bear, if a child died of lead poisoning by ingesting leaded jewellery during your time as Minister? A fatal child lead poisoning via ingestion of a leaded heart charm in 2006 in the USA was the provocation for the world’s largest consumer

product recall (150 million items), the US national regulation on Lead in Children’s Products, and various state Regulatory Actions on Lead in Children’s Jewellery and Adult’s Jewellery (with California’s being the best), while in Australia, the only jewellery which has any heavy metal content limit by law is jewellery which is sold as “Children’s Toys” eg bead sets.

I have already, along with Jo Immig, President of the National Toxics Network (based in NSW), approached the ACCC asking for federal regulations on this issue and received the astounding reply on April 18, 2012, that:

“We have noted your concerns regarding the absence of mandatory standards on heavy metals in products and the potential deficiencies of the current regulatory framework. This information will be logged into our database and may be utilised for future investigations and regulatory development.”

The ACCC is clearly happy to do nothing until a death comes. I trust you are not.

Yours Sincerely

Elizabeth O'Brien

President, The LEAD Group Inc. (a Health Promotion Charity on the federal Register of Environmental Organisations)

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We lead the way | We educate | We advocate | We'll work until the world's lead-safe

Case Study re: lead poisoned artist

By Zac Gethin-Damon, from case notes made by Elizabeth O'Brien, and emails from the artist. Artworks photos all provided by Claire Lewis.

An artists experience demonstrates the need for education of artists in lead awareness and the importance of the support of the medical system if people are going to be properly notified when they are lead poisoned and given the right advice re what action to take. Fortunately, in this case not only was a lead blood test taken but The LEAD Group was contacted. This meant firstly that it could be ensured that there was no ongoing lead exposure to the artist, and secondly that she was given advice as per how to minimise her lead absorption, but there should have been proper



medical procedures in place which meant that The LEAD Group's involvement was not required to achieve these outcomes.

Claire Lewis, a 76 year old artist and Gwandalan resident, had a worrying experience in 2010 when, after taking a blood lead test following the advice of a fellow artist, she was told by her GP that she had an elevated blood lead level. She was not surprised by the fact that she had an elevated blood lead level: *"When my doctor told me I had elevated blood lead level I was not surprised because as a china painter I had heard of others with this condition who had kidney problems."*

"When my doctor told me I had elevated blood lead level I was not surprised because as a china painter I had heard of others with this condition who had kidney problems."

Claire was surprised however, when a second lead blood test came back with a higher number. Claire was confused that her blood lead level had risen from 88 to 97, and didn't know what 88 or 97 meant, she had a number but no unit. She was aware that she had been exposed to lead as a working artist throughout her lifetime, having worked for a greeting card firm where she painted all day with lead based paints, and having done lead lighting work, but for the last while she had worn a mask and hadn't been using lead lighting glass. Did her raising blood lead level mean she was still being exposed to lead? And if that wasn't the case than how was it that her blood lead level was going up? Claire had many questions without many answers, answers which her ongoing medical problems called for.

Ongoing Medical Problems



Claire had been feeling unwell for some time. When she would do art society exhibitions all day she could hardly walk when she got home. She had a pain in the stomach and a pain mastoid bone which would later be identified as arthritis. Regarding her elevated blood level, Claire's GP, with little experience in lead poisoning, suggested that Claire contact the Poisons information Service. It was Poisons who referred her to The LEAD Group.

Elizabeth O'Brien at The LEAD Group told Claire her blood lead level was too high and that all of her medical problems could be symptoms of lead poisoning. She made it clear that lead comes from unusual exposures as well as common, and that she was on her own – *"Doctors aren't educated, and the health department are not there to help you."*

"Doctors aren't educated, and the Health Department are not there to help you."

Elizabeth was also able to give a possible answer to Claire's question of her increasing blood lead level. She told Claire that even in an adult who is not being exposed to an increasing amount of lead, blood lead levels can rise because stored lead is leaching out of the bones into the blood stream during the demineralisation of bones which occurs with ageing. Leaving nothing to chance, she encouraged Claire to have her studio lead tested to ensure she was no longer being exposed to lead, and to ensure she was making her art in a lead safe way.

Unanswered Questions

The crucial question remained however, what was the unit of Claire's result? Without a unit it was unclear whether her past blood lead results were either 88 and 97 µg/dL: an extremely high amount, OR 0.88 µmol/L and 0.99 µmol/L micromoles per litre: a level around 1/5 as high, approximately 20µg/dL.

The goal for all Australians is to be below 10 µg/dL, and 15 µg/dL was the 'notifiable' level for people in NSW, up until January 2012 when the notifiable level was reduced to 10 µg/dL. Claire's result therefore, whether it was 97 µmol/L. micromoles/L or 20 µg/dL was a notifiable level, so had the NSW Health Department been notified?

The only way to answer the remaining questions: to clarify the unit of Claire's blood lead level and if her case had been referred to Health Dept, was to get in contact with her doctor. Under Elizabeth's advice, Claire rang the doctor's office for the figures but the woman who answered didn't understand the question and gave her wrong figures. The search for the doctor was on.



The Doctor Finally Contacted

After a week of left and unreturned messages Elizabeth was finally told that fortunately Claire's results were in µmol/L, the highest of her results being 0.97 µmol/L (20µg/dL). Elizabeth was also told that as the result was over 0.72 it was notified to the NSW Health Department.

Under Elizabeth's advice, Claire arranged to see a toxicologist at The Mater Hospital. It was the toxicologist's opinion that the lead level was causing the high blood pressure, gout and arthritis, well known possible side effects of lead poisoning. As Dr. Ronald Hoffman states in a factsheet on his website about arthritis: "*Lead poisoning in adults can produce arthritic symptoms, and 'saturnine gout' was common among ancient Romans who deliberately leaded their wine*" (Dr. Ronald Hoffman, 2006). In another of the factsheets on Dr. Hoffman's website, Gout: An overview, "*decreased excretion of uric acid as seen in chronic renal disease, lead-induced nephropathy (kidney damage), [and] diabetic ketoacidosis.*" (Hoffman Center Staff, 2006), are given as possible causes of gout.

Claire was never contacted or given any assistance by The NSW Health Department or WorkCover, the two institutions which are supposedly those which deal with lead poisoning issues such as Claire's.

A Need to Educate

Claire's case demonstrates the lack of lead education of two groups: artists who work with lead and the Australian medical system. The lack of education amongst artists who work with lead is clear, if Claire had been properly educated as an artist working with lead than she would have been able to make her art in a lead safe way and hence her blood lead level would never have been elevated.

The second group, that of the Australian medical system, represents a much larger body of people as it includes any lead poisoned person in Australia who deals with the medical system concerning their lead poisoning. The education issues within the Australian medical system that this case raises therefore are all the more worrying. The confusion surrounding both Claire's blood lead level and the implications of her lead poisoning could easily be avoided through the establishment of nationwide procedures designed to respond in the case of an elevated blood lead level which,

most importantly, are taught to and followed by medical practitioners nationwide. Misinformation to patients on the part of medical practitioners stemming from lack of education regarding lead poisoning is a problem that we tackle all the time at The LEAD Group Inc., an issue this case illustrates.

Lessons Learned

Claire, with new knowledge concerning lead safety and in light of her health concerns has chosen to now no longer make leadlights. She also gave away lead and glass altogether. When grounding on porcelain wears a mask so to not breathe in particles of the porcelain paint, some of which is still 77% lead. She has cleaned up her work area to get rid of all lead residue. She has not had her blood lead level tested again, and feels well.

As can be seen from this recount of the events, Claire was very fortunate in this case as she was put into contact with Elizabeth O'Brien at The Lead Group who were able to make sure that not only was Claire not continuing to be exposed to lead, but that she knew what steps to take to minimise her lead absorption into blood.



The point that I hope to make through this piece is that Elizabeth O'Brien's involvement should have not been required, and Claire was lucky that she was referred to The LEAD Group. Had Claire never been put in contact with The LEAD Group it is very possible that she would continue being exposed to the lead in her home and would have wasted much more time with a medical system which didn't properly respond to her lead poisoning. (see Claire Lewis's design for Toukley Art Gallery exterior mural to the left)

To read more on arthritis and gout see the links to Dr. Ronald Hoffman's Website below in the references:

Hoffman Center Staff (circa 2006), Gout: an overview, at Dr Hoffman Website: <http://www.drhoffman.com/page.cfm/546>, accessed 29/10/12

Dr. Ronald Hoffman (circa 2006), Arthritis: not for seniors only at Dr Hoffman Website: <http://www.drhoffman.com/page.cfm/112>, accessed 29/10/12

New saliva lead test - using oral fluid for lead screening: Combating lead poisoning in our children, communities, and ourselves

By Erica A. Guice, Western Slope Laboratory, LLC

Lead has been demonstrated to be harmful to most living things. It is very detrimental to human beings, even at very low levels. As such, efforts have been made to remove lead from common products such as paint, gasoline, plumbing pipes, and food cans. Consequently, acute lead poisoning is now rare in the developed world. Nevertheless, chronic exposure to lead through hobbies, occupation, and the environment does still occur. This exposure is quite dangerous leading to neurodevelopmental and profound IQ deficits in children and elevated blood pressure, kidney problems, and infertility in adults.

Due to these harmful effects, lead concentrations are monitored, generally at the local level, following standardized guidelines. The Centers for Disease Control and Prevention (CDC) has stated that childhood lead poisoning is the number one environmental health risk facing children in industrialized countries today. One out of six children, which is more than three million children age six and younger, have toxic levels of lead in their bodies in the United States alone. However, adult lead poisoning rates are at the level of six persons per every 100,000, which is down 14% from 2004. With the number of persons afflicted with toxic lead levels, the CDC has recently reduced the action level for whole blood to 5µg/dL in children; the elevated lead level for adults is 10µg/dL.

Since most clinical laboratories rely on atomic absorption (AA) and inductively coupled plasma-optical emission spectroscopy (ICP-OES) to test whole blood as a screen, the implementation of testing to detect even lower action levels will probably not be addressed due to the limitations of these technologies. In an effort to utilize more sensitive technology and reduce, if not eliminate, the need for painful, invasive blood testing, Coventry Diagnostics, LLC began research into a salivary lead test. This test employs inductively coupled plasma mass spectrometry (ICP-MS) and therefore has increased sensitivity which allows for lower levels to be detected. In the first study in 2005, with Guilford County Department of Public Health (North Carolina, United States), Dr. David R. Schneider was able to demonstrate the utility of using oral fluid for lead screening while overcoming many of the obstacles named by previous researchers in the field. The study demonstrated an equivalent correlation between salivary lead and whole blood lead. Paired sets of the data are shown below in Graph One. As demonstrated in Graph Two, the distribution of concentration was the same and the mean values were the same. This result was statistically significant. Continued studies looking at lead levels above the CDC action level has been undertaken, first in Texas (US) and now in the UK. These subsequent studies are also including the comparison with plasma lead levels to aid in the detection of vulnerable fetuses.

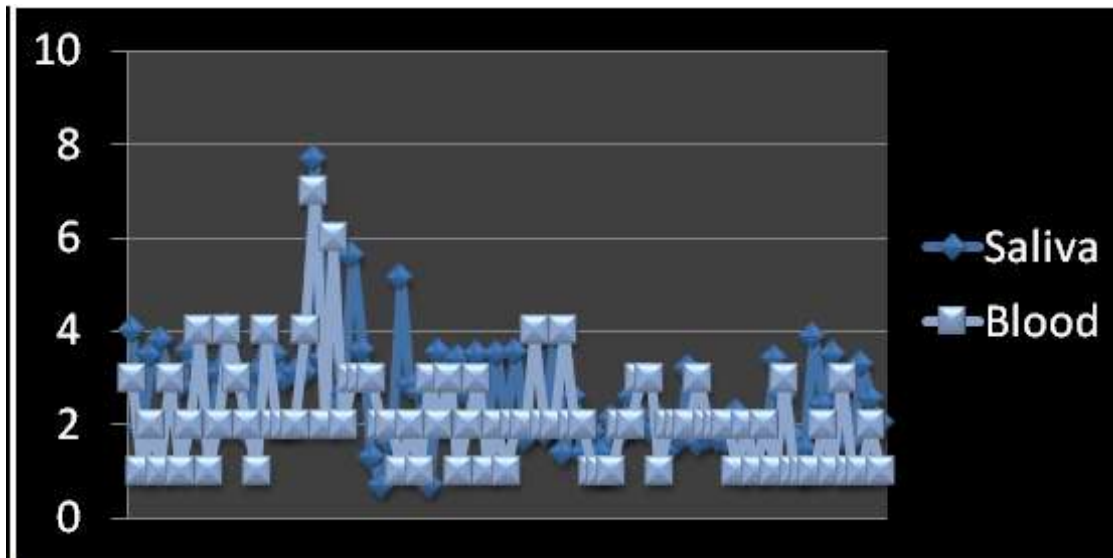
Coventry Diagnostic, LLC was issued a US patent for the Schneider method of salivary lead testing with ICP-MS. The method allows for the detection of lead in oral fluid with levels as low as 0.05µg/dL; this is one hundred times lower than the current CDC action level for children. The patented method has an accuracy greater than 94% for the major lead isotopes (206, 207, and 208) while maintaining extreme precision. The overall uncertainty of the method is no more than 1% for each isotope.

The impact of a noninvasive, salivary lead screening test will allow for more testing and will lead to faster adaptation of the method. Currently, the test is available on a limited basis to the construction and demolition industry in the UK via a distributor. Persons can also purchase the test directly from Western Slope Laboratory, LLC, a wholly-owned subsidiary of Coventry Diagnostics, LLC. The test is available worldwide, but all testing is performed at the Troy, MI, United States facility of Western Slope. Anyone, not just physicians and other medical practitioners, can use the Coventry salivary lead test since it is designed to be user friendly. The test is very economical since it does not require a trip to a physician's office; the cost is \$80 (AUD) and the donor must cover shipping. Western Slope recommends postal couriers or a logistical shipping company like Federal Express (FedEx). Results are released via an online reporting network within seven business days of receipt of sample. Purchasing and shipping costs can vary with number and weight of the packages.

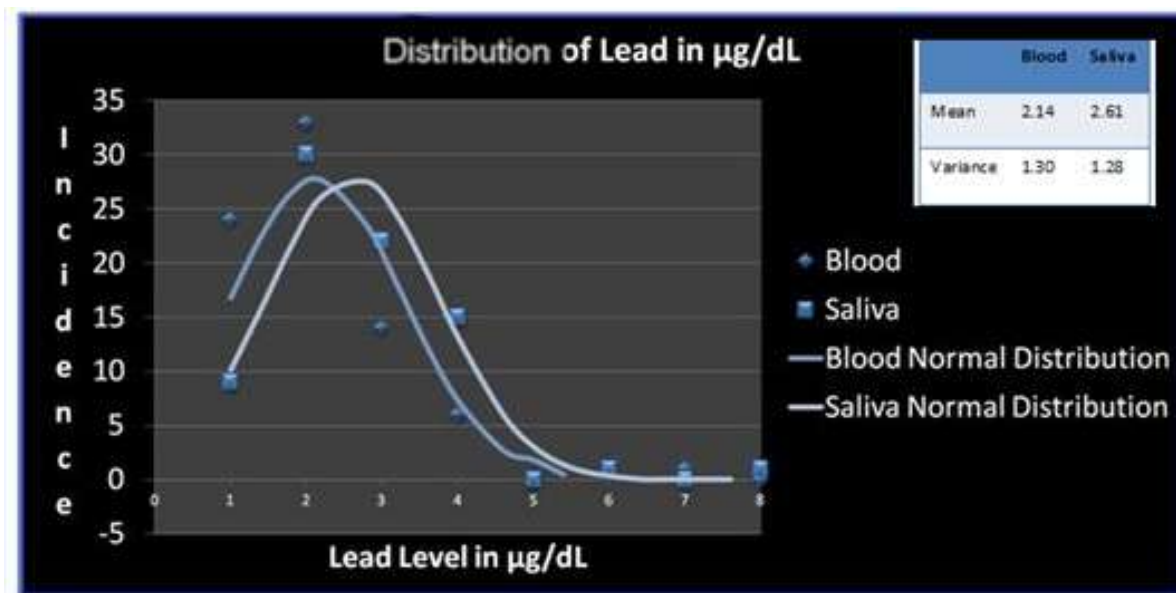
Due to the aforementioned correlative data, the suggested action level for oral fluid is the same as whole blood screening. As such, Western Slope Laboratory suggests that donors with levels above 5µg/dL in children and 10µg/dL in adults consult their physicians if in the United States. It is suggested that donors in other countries follow their respective health department guidelines. In consulting their guidelines, please note that the correlation is such that values under 10µg/dL were corresponding.

At this time, Western Slope Laboratory is also investigating this method for use in testing for other heavy metals including aluminum, mercury, arsenic, copper, and uranium. For more information on lead or any other metal testing in oral fluid, please contact Western slope Laboratory 0011+1-800-789-4317 x 22.

Graph One:



Graph Two:



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Links to recent lead related Australian-origin media articles

Collated by Zac Gethin-Damon

Lead has been mentioned frequently in recent Australian news with the 5th of November 2012 being the day with the most lead related Australian news in The LEAD Group's memory. It is good to see exposure on some important lead issues. To read/watch the lead related media articles find the links below separated by their themes:

The call to lower Childhood blood lead intervention levels in Australia:

1. Andrew Robertson (22/10/12), "Lead goal 'too high'", in *Barrier Daily Truth*
<http://bdtruth.com.au/main/news/article/3942-Lead-goal-'too-high'.html>
2. Amy Corderoy (5/11/12), "Children's lead standard 'too high'" in *Sydney Morning Herald*
<http://www.smh.com.au/national/health/childrens-lead-standard-too-high-20121104-28s6c.html>
3. Amy Corderoy (5/11/12) "Children's lead standard 'too high'" in *WA Today*,
<http://www.watoday.com.au/national/health/childrens-lead-standard-too-high-20121104-28s6c.html>
4. Amy Corderoy (5/11/12) "Children's lead standard 'too high'" in *Border Mail*,
<http://www.bordermail.com.au/story/572363/childrens-lead-standard-too-high/?cs=7;>
5. Amy Corderoy (15/11/12), "Lead standard for children 'too high'", *Canberra Times*,
<http://www.canberratimes.com.au/national/lead-standard-for-children-too-high-20121104-28sdu.html>
6. Amy Corderoy (5/11/12) "Children's lead standard 'too high'" in the *Brisbane Times*,
<http://www.brisbanetimes.com.au/national/health/childrens-lead-standard-too-high-20121104-28s6c.html>
Amy Corderoy (5/11/12) "Children's lead standard 'too high'" in *Queensland Country Life*,
<http://qcl.farmonline.com.au/news/metro/national/general/lead-standard-for-children-too-high/2632450.aspx>
7. Amy Corderoy (5/11/12) "Children's lead standard 'too high'" in the *North Queensland Register* <http://nqr.farmonline.com.au/news/metro/national/general/lead-standard-for-children-too-high/2632450.aspx>
8. *Sydney Morning Herald* (5/11/12), Childhood blood lead levels fear,
<http://www.dailytelegraph.com.au/news/breaking-news/childhood-blood-lead-levels-fear/story-e6freuz0-1226510443630>
9. *Adelaide Now* (5/11/12), Childhood blood lead levels fear,
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11. NineMSN News (5/11/12), "Childhood blood lead levels fear,
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12. Herald Sun (5/11/12), "Childhood blood lead levels fear,
<http://www.heraldsun.com.au/news/breaking-news/childhood-blood-lead-levels-fear/story-e6frf7kf-1226510443630>
13. News.com.au (5/11/12), Childhood blood lead levels fear,
<http://www.news.com.au/breaking-news/national/childhood-blood-lead-levels-fear/story-e6frfku9-1226510443630>
14. Perth Now (5/11/12), Childhood blood lead levels fear,
<http://www.perthnow.com.au/news/breaking-news/childhood-blood-lead-levels-fear/story-e6frg13c-1226510443630>
15. Sarah Martin (5/11/12), Outdated lead level standards 'a danger', *The Australian*,
<http://www.theaustralian.com.au/news/health-science/outdated-lead-level-standards-a-danger/story-e6frg8y6-1226510197678>
16. New Zealand Herald (5/11/12), Dangerous lead levels in Aussie kids,
http://www.nzherald.co.nz/lifestyle/news/article.cfm?c_id=6&objectid=10845247
17. Mark P Taylor, Chris Winder and Bruce P Lanphear (5/11/12), Eliminating childhood lead toxicity in Australia: a call to lower the intervention level in *Medical Journal Australia* 2012; 197 (9): 493. doi: 10.5694/mja12.11159,
<https://www.mja.com.au/journal/2012/197/9/eliminating-childhood-lead-toxicity-australia-call-lower-intervention-level>
18. Mark P Taylor, Chris Winder and Bruce P Lanphear (5/11/12), Time to rethink blood lead goals to reduce risk to children's health in *The Conversation* (Website) ,
<http://theconversation.edu.au/time-to-rethink-blood-lead-goals-to-reduce-risk-to-childrens-health-10493>
19. ABC Brisbane (5/11/2012 5:09 PM) Interview with Mark Taylor, Professor, Macquarie University. Hardgrave reports that lead standards for children are claimed to be far too high, on *Drive Radio*.
20. Michael Vincent (5/11/12) Blood lead level standard for children 'outdated' [with audio of AM radio story] *ABC AM Radio* <http://www.abc.net.au/news/2012-11-05/lead-levels-am/4352624>
21. Reported by Mike Sexton (5/11/12), "Does Australia expose children to unhealthy lead levels?" as seen on *7.30 Report*, *Australian Broadcasting Corporation*, first aired on 5/11/12.
22. Ellen Feely, Justin Smith (5/11/12), "Parents warned of lead-poisoning risk during renovations." [Link to Audio: Professor Mark Taylor speaks with Justin Smith] *3AW News Radio* <http://www.3aw.com.au/blogs/breaking-news-blog/parents-warned-of-leadpoisoning-risk-during-renovations/20121105-28t3b.html>
23. Jen Hunt (6/11/2012), In a letter published in the *Australian Medical Journal*, researchers are claiming that 100,000 children in Australia could have dangerous levels of lead in their blood. Mark Taylor, Professor in Environmental Science, Macquarie University, Interview on *ABC South East NSW (Bega) South East Mornings*
24. Jill Emberson (5/11/2012) Emberson recaps her interview with Elizabeth O'Brien from Global Lead Advice & Support Service which is run by LEAD Group Inc. Elizabeth is joined by

Prof Mark Taylor, to lower the guidelines for the safe levels of lead exposure on *ABC Newcastle (Newcastle) Mornings*

25. Adam Spencer (5/11/2012) Spencer says there are claims that lead level exposure of children may be unacceptably high. Prof Mark Taylor from Macquarie Uni says it is well established that exposure under the age of five is most damaging on *702 ABC Sydney (Sydney) Breakfast*
26. Natalie Poyhonen (5/11/2012) Research published in the Medical Journal of Australia suggests 100,000 children under four could have high enough lead levels to have adverse health outcomes on *ABC North Queensland (Townsville) 08:30 News*
27. Bernadette Young (5/11/2012), Young talks to Mark Taylor re co-authoring a letter published in the Medical Journal of Australia which says the blood-lead levels, that are currently deemed safe, can cause health and behavioural problems on *ABC Western Queensland (Longreach) Mornings*
28. Justin Smith (5/11/2012), Interview with Professor Mark Taylor, Environmental Science Expert, Macquarie University. Smith says a new study suggests 100,000 Australian kids are at risk of lead poisoning due to the popularity of home renovations on *3AW (Melbourne) Mornings*
29. ABC1 Adelaide ABC News (5/11/2012), Researchers say many Australian children are at risk of health problems due to high levels of lead, and that standard for acceptable levels of lead in Australia are too high. Experts say there are still too many homes with lead based paint.
30. ABC1 Hobart ABC News (5/11/2012) Researchers say many Australian children are at risk of health problems due to high levels of lead, and that standard for acceptable levels of lead in Australia are too high. Experts say there are still too many homes with lead based paint.
31. ABC, *7:30 Report* (5/11/12), Does Australia expose children to unhealthy lead levels?
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32. Channel 10, *The Project* (5/11/12), "100,000 Aussie Kids could have dangerous levels of lead in their blood",
http://theprojecttv.com.au/video.htm?movideo_p=39696&movideo_m=242487 [Start 5.35]
33. ABC1 (Sydney) 7:30 - 5/11/2012 7:38 PM, Broadcaster Leigh Sales, Station Phone, (5/11/12), "A group of environmental scientists says Australia lags behind other developed countries when it comes to lead levels. Port Pirie is home to the world's largest lead smelter. For generations pollution from the smelter has found its way into the city"
34. ABC News 24 (Sydney) ABC News - 19:00 - 5/11/2012 7:20 PM, Broadcaster Kumi Taguchi, Station Phone, (5/11/12), "Researchers say many Australian children are at risk of health problems due to high levels of lead, and that standard for acceptable levels of lead in Australia are too high. This include behavioural problems like ADHD"
35. ABC1 (Brisbane) ABC News - 5/11/2012 7:17 PM, Broadcaster David Curnow, State News Editor Mr Bernard Bowen, (5/11/12), "Up to 100,000 children may have elevated levels of lead in their blood and experts are saying we need action. Researchers say Aust acceptable lead levels too high. Prof Chris Winder says that any house built before 1975 probably contains leaded paint"
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