

Stainless Steel Rainwater Tanks and Lead: Questions and Answers

What rainwater tanks are affected by this Public Health warning?

This public health warning is about stainless steel tanks bought from Kingston Sheetmetal.

Industry informants have said it is unlikely any other manufacturers of rainwater tanks in Tasmania are producing tanks that create similar risks. If you are still unsure or concerned you can get your water tested as described below.

Has the investigation found all the Kingston Sheetmetal stainless steel tanks?

As of 27 March 2013, the investigation by the Public and Environmental Health Services (PEHS) had contacted 76 of 81 persons on the manufacturer's customer list, and accounted for 112 of the 118 tanks on this list. In the course of the investigation other people who bought tanks from Kingston Sheetmetal have also contacted PEHS. Six of these people appear to have stainless steel tanks.

Others own galvanised iron tanks, which are not subject to this public health warning.

If you believe you may have a Kingston Sheetmetal stainless steel tank, and have not already contacted PEHS, please call 1800 671 738.

I don't know if my water tank is made of stainless steel, what should I do?

There are two basic tests you can do yourself to see whether a metal tank is stainless steel or galvanised:

1. Brush the dirt and dust from your rainwater tank and put a fridge magnet on the tank. If the magnet holds well (i.e. like it does on your fridge) then your tank is galvanised and is not affected by this public health warning. If the magnet slides off then your tank is stainless steel.
2. Scratch the side of your tank with a sharp knife. If you can gouge out a chunk or strip of your tank then your tank is galvanised and is not affected by this public health warning. If only a shallow scratch or mark appears, then your tank is stainless steel.
3. Contact your installer who should be able to tell you what type of tank you have.

I know or think my tank is stainless steel and made by Kingston Sheetmetal, what should I do next?

Stop using the water immediately for drinking, cooking, preparing food and brushing teeth.

If you know or think your tank is stainless steel then we recommend you get your water tested to determine the level of lead.

Why should I get my tank water tested?

Getting your tank water tested for lead is useful for two reasons:

1. If you are uncertain whether it is a Kingston Sheetmetal stainless steel tank, the lead test will help determine whether it is or not.
2. If it is a Kingston Sheetmetal stainless steel tank, it will help determine the lead exposure of people who drank the water.

Please note: If you do have a Kingston Sheetmetal stainless steel tank, you should not use this for drinking water now, or in the future, *regardless* of the current water lead test result. These tanks will always pose a risk of having high lead levels in the water.

How do I get my water tested?

There are two NATA-accredited laboratories in Tasmania for testing lead in water:

1. Analytical Services Tasmania (in Hobart) 6230 7000
2. Tasmanian Laboratory Services (in Launceston) 6331 4430

Follow their instructions on collecting a water sample and specify it is a sample of water used for drinking. It costs about \$65 to get one sample of water tested. Testing takes up to seven working days.

Any tests of drinking water that show lead concentrations over 10 micrograms per litre (ug/L) must be notified by the laboratory to the Department of Health and Human Services.

What is the actual issue?

Stainless steel rainwater tanks made by Kingston Sheetmetal have been made with a solder that contains

50 per cent lead. Australian Standards specify solder materials that come into contact with drinking water must not contain more than 0.1 per cent lead.

The high-lead solder and the stainless steel tank form an electrochemical circuit that results in the solder corroding and releasing lead into the water. This is a particular problem with stainless steel tanks because the stainless steel does not corrode, but the lead does.

What limit does the Australian Drinking Water Guideline have for lead?

The Australian Drinking Water Guidelines (2011) have a health-based limit for lead in drinking water of 10 micrograms per litre (ug/L). This limit is based on the risk to health that may occur from long-term consumption of water containing this much lead or more.

My water lead level is more than 10 micrograms per litre, what should I do?

If your water has been tested and found to contain more than 10 micrograms per litre of lead, then you should stop using the water immediately for drinking, cooking, preparing food and brushing teeth.

- If you do have a Kingston Sheetmetal stainless steel tank, you should not use this for drinking water (now, or in the future) *regardless* of the current water lead test result. These tanks will always pose a risk of having high lead levels in the water.
- If you do not have a Kingston Sheetmetal stainless steel tank, you should contact the manufacturer of your tank to ask about its construction and whether lead-based solder was used. You should also contact a plumber to check for other sources of lead in your water supply.

Boiling the water does not remove the lead.

Some filters will remove lead to levels safe for human consumption. You should specifically check this with the filter manufacturer, but we do not recommend filters as a long-term solution. If the water in your tank contains high levels of lead, it will always pose a risk.

What about my pets and livestock?

If your water has been tested and found to contain more than 10 ug/L of lead, then you should not give it to any animals. All animals should be provided with clean reticulated drinking water.

What can I use lead contaminated water for?

Lead-contaminated water can be used safely for:

- showering and bathing. Please supervise children so they do not drink any water or suck on any toys in the water
- washing clothes
- washing dishes
- house cleaning
- fire fighting
- crop, fruit and vegetable garden watering
 - The risks of watering fruit trees and vegetable crops with lead contaminated water are very low. Lead does not accumulate significantly in fruit and vegetables because it does not readily get from the soil into the plant or from roots to the shoot
 - However, as a precaution, wash any home-grown produce with clean drinking water before eating and peel and remove the outer layers of leafy vegetables.

Can the tank be fixed or refurbished or made safe?

Kingston Sheetmetal stainless steel tanks will always pose a risk of having high lead levels in the water.

Workplace Standards Tasmania are arranging to have warning labels permanently attached to the 120 or so Kingston Sheetmetal stainless steel tanks identified during this investigation. These labels will state that the tanks are not suitable for storing drinking water.

You may be able to use these tanks for stormwater storage, for fire fighting and for other purposes that do not involve drinking the water.

You may choose to dispose of the tank through a metal recycler.

Consumer Affairs and Fair Trading (1300 654 499) can provide you with advice about your consumer rights.

Do garden beds made by Kingston Sheetmetal pose a risk?

No. Most garden bed surrounds reported by owners to have been made by Kingston Sheetmetal have turned out to be made from galvanised iron. These have been made in a way that does not pose a risk of significant lead contamination of the soil. Use of stainless steel garden beds would pose a similarly low risk. No stainless steel garden beds have been identified so far.

Where can I get further information?

- Guidance on the use and maintenance of rainwater tanks is available at www.dhhs.tas.gov.au/_data/assets/pdf_file/0017/57032/Guidance_on_use_of_water_tanks.pdf

- Consumer Affairs and Fair Trading (1 300 654 499) can provide you with advice about your consumer rights.
- Further health advice is available by calling the Public Health Hotline on 1800 671 738.

What are the health effects of lead?

People can be affected quickly and severely by exposure to *extremely* high lead levels. This is called acute lead poisoning and is uncommon in Australia.

This is not a concern with Kingston Sheetmetal stainless steel rainwater tanks.

However, lead can build up in the body from ongoing low levels of exposure. Because of this, long-term exposure to lead (such as lead in drinking water) can slowly increase blood lead levels. This may result in mild or moderately increased blood lead levels, but most often no symptoms. This appears to be the case for the regular users of the stainless steel rainwater tanks with whom we have spoken, and for whom we have elevated blood lead test results. The highest blood lead level notified to Public and Environmental Health Service so far has been 26 micrograms per decilitre in an adult.

It is always important to minimise blood lead levels as lead does no good for the body and can cause harm. A particular health concern is the effect lead can have on the development of the brain in young and unborn children. This concern is based on studies of large groups of children followed over time. These studies show subtle differences in IQ tests or in learning ability among children with prolonged raised lead levels. This is an average effect; it is not really possible to know for any individual child the extent to which they have been affected because there are so many other influences on

brain development (including the home environment and parenting) that are generally stronger than the effect of lead.

I'm worried that lead may affect me or my family. What can I do?

If you are concerned about your health, especially if you (or your family) have been regularly drinking from a Kingston Sheetmetal stainless steel rainwater tank, we recommend you visit your GP and ask for a blood lead test. A blood lead test is the only way to tell if your body has absorbed lead.

What blood lead levels are we aiming for?

Lead has no useful purpose in the human body. The National Health and Medical Research Council recommends all Australians should have a blood lead level below 10 micrograms per decilitre. In Tasmania we strive for all children to have a blood lead level of five micrograms per decilitre or less. Blood lead levels below these targets pose negligible risk to health. The Public and Environmental Health Service (PEHS) is notified of Tasmanians with a blood lead levels greater than 10 micrograms per decilitre. PEHS provides assessments and advice to notified cases, in collaboration with the person's GP.

What will happen to the lead in my (or my child's) blood? Do we need another blood test?

Lead is eliminated slowly from the body through the urine and faeces. As long as the important sources of exposure to lead are stopped, blood lead levels usually return toward normal over several months. Your GP may recommend retesting of blood for lead in two or three months; there is little benefit in retesting any sooner than this.

Can I still breastfeed?

Breast milk is the best food for infants. It is safe for mothers who may have been drinking water with elevated lead levels to continue to breastfeed while they wait for the result of their blood lead levels. Breast milk contains less than a twentieth of the lead in the mother's blood, so lead in breast milk is not a significant source of lead exposure for the infant. It is not useful to measure lead in breast milk.

It is only necessary to stop breastfeeding if the mother's blood lead levels are very high (over 40 micrograms per decilitre).

What else can I do to reduce the exposure of my family to lead?

1. *Make sure your home environment is safe.* Older houses pose a risk from lead-based paints. Take care if renovating a house built before 1970. Your council Environmental Health Officer can provide advice. Keep pregnant women and young children away when lead-based paint is being removed. Make sure your child cannot get at peeling or deteriorating old paint or chewable surfaces painted with lead-based paint, such as old cots.
2. *Avoid exposure from hobbies.* Hobbies, such as making lead sinkers or shot, or lead-lighting, can pose a risk. Only do these in well ventilated areas and with appropriate precautions. Keep pregnant women and young children away from such activities.
3. *Have a healthy and varied diet.* A diet high in Vitamin C (e.g. fruit), iron (e.g. red meat) and calcium (e.g. milk, cheese, yoghurt) will reduce

the amount of lead absorbed into your bloodstream.

History of blood lead levels in Australians

Today's generation of children have much lower average blood lead levels than many of their parents and grandparents had when they were children. For example, the average blood lead level in several surveys of Australian children in the late 1970s and early 1980s was greater than 11 micrograms per decilitre. The decrease since then is because of public health successes such as banning lead in paint, banning lead solder in tin cans used for food, and phasing out lead in petrol.