



*A COMMERCIAL APPLICATION OF
VIROFLOW™ TECHNOLOGY*

**CASE STUDY
EMROWARE**

*After treatment with ViroFlow™ Technology
using ElectroBind™ reagent, the
concentrations of zinc were reduced
significantly allowing for safe landfill disposal.*



PROBLEM

During manufacturing, zinc casted components are removed from their molds and present a rough finish, complete with burrs. To aide in the removal of the burrs and to bring a smooth finish to the components, they are placed into a vibrator for polishing and de-burring before electroplating.

The polishing and de-burring stones are made from a special resin. This resin and zinc waste is then pumped into holding tanks where it is dewatered and placed into drying pits.

As a result of this process, Emroware had approximately 20 tonnes of stockpiled resin/zinc waste with a leachable zinc concentration of nearly 600mg/L, well above EPA requirements for disposal.

VIROTEC TOTAL SOLUTION

Virotec was commissioned by Emroware to treat the resin/zinc waste from its manufacturing process using ViroFlow™ Technology, a total solution service that included the ElectroBind™ reagent, technical support, treatment outcome validation and liaison with key staff at Emroware.

ViroFlow™ Technology was implemented with the following outcomes:

- > Significant reduction in leachable zinc to <0.1mg/L;
- > As this limit was below 500mg/L the waste was able to be disposed of directly to a double lined landfill, and;
- > The lowest possible disposal cost with limited moving equipment required.

BACKGROUND

Emroware is Queensland's leading die-casting company, with 50 years industry experience. Emroware is based in Caloundra, Queensland, Australia and services both the Australian and New Zealand markets. Emroware is the manufacturer of bathroom fittings plus other home hardware components made of zinc.



The drying beds containing the sludge



The components within the vibrator for polishing

TREATMENT METHODS

ViroFlow™ Technology was implemented to treat the stockpiled resin waste using the ElectroBind™ reagent, which was mixed with the sludge waste.

The 20 tonnes of the waste were successfully treated using ElectroBind™ reagent and the treated waste was analysed to determine the leachable metal concentrations. The result achieved by using ElectroBind™ reagent was a reduction in leachable zinc from 600mg/L to <0.1mg/L, allowing for disposal via landfill.

Due to the successful treatment of the stockpiled waste, a dosing plant was installed to treat sludge as it is produced.



Mixing the ElectroBind™ Reagent with the sludge waste

RESULTS

The results show that the zinc concentrations in the waste were reduced to the safe disposable level for landfill.

TABLE 1: RESULTS AFTER TREATMENT WITH VIROFLOW™ TECHNOLOGY

	Before ViroFlow™ Technology Treatment	After ViroFlow™ Technology Treatment	EPA Requirements
Zinc (mg/L)	581	<0.1	500

CONCLUSION

After treatment with ViroFlow™ Technology using proprietary ElectroBind™ reagent, the concentrations of zinc were reduced significantly allowing for safe landfill disposal.

ElectroBind™ reagent provided a highly effective solution to Emroware's resin waste, that enable the immobilisation of zinc contaminant so that the waste could be safely disposed of. The solution was quick and the results are permanent.

For more details regarding Emro Products please visit www.emro.com.au



The zinc components during the vibration process