

BCD Technologies Pty Ltd

- Waste treated - Mixtures of PCB (Polychlorinated Biphenyl) and Trichlorobenzene.
- This case study includes Company History, Simplified Reaction Chemistry and Destruction Efficiency.
- Case Study of the BCD Technologies Site.

A range of other wastes have been destroyed, including commercial destruction of organochlorine wastes, and small quantities of persistent organic pollutants (POPs) on a trial basis.

Background

Analysis of Samples

BCD Technologies Pty Ltd, a waste destruction company, specialising in collection and destruction of PCBs, was the first company to commercialise the US EPA-licensed, Base Catalysed Dechlorination (BCD) process. The process was operated for a number of years to destroy Polychlorinated Biphenyl (PCB) contaminated oil.

As a consequence of the BCD process's limitation on the maximum concentration of PCB that it could economically treat, BCD Technologies purchased a licence and PLASCON® plant from SRL Plasma Limited in 1997 to treat a range of concentrated chlorinated wastes including PCBs and organochlorine pesticides.

Waste Treated

BCD Technologies use their PLASCON® plant to destroy a variety of PCB wastes containing chlorine concentrations up to 60%.

The bulk of the waste is drained from electrical transformers and capacitors and transferred to a bulk feed storage vessel. Any contaminated solids are then broken up and the remaining liquid is extracted by a thermal desorption process. The condensed vapours are added to the liquid storage. The liquid waste is then pumped directly to the PLASCON® plant for destruction.

Chemistry

An example of the decomposition chemistry for one specific PCB molecule follows:

Note: Sufficient oxygen is added to convert carbon to carbon monoxide which is subsequently converted to carbon dioxide in a flare.

Operational Performance

Over the past two years BCD Technologies have operated their PLASCON® plant 24 hours a day, destroying waste at the rate of 40-45 kg/h, returning a Destruction Efficiency of >99.9999%.

The level of PCB in the effluent discharged to the sewer complies with the 2 ppb limit specified in the Australian Government's PCB Management Plan.