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Australian National Halon Bank and Destruction Facility

Background

Australia, along with many other countries, is a signatory to the Montreal Protocol, an international treaty to phase out the use of ozone depleting chemicals.

There are many substances that deplete atmospheric ozone, the most common being various forms of CFC's and Halon gases. CFC's were commonly used in refrigeration systems and Halons are used in fire extinguishing applications.



Small Cylinders to Decant into Storage Tanks

In compliance with its obligations under the Montreal Protocol the Australian Government established a National Halon collection scheme in 1993. Subsequently a National Halon Banking and Destruction Facility was established in 1996. The destruction of Halons and CFC's at the National Halon Bank is carried out under contract to the Australian Government by BCD Technologies Pty Ltd using SRL Plasma Pty Ltd's original PLASCON® plant.

Waste Treated

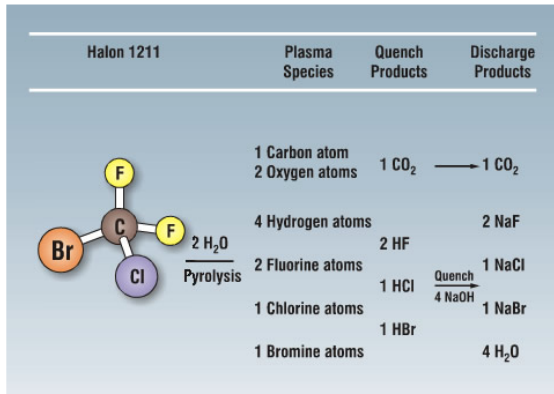
The Halons and CFC's were first decanted from small vessels into large bulk storage tanks before being pumped into the PLASCON® plant for destruction. Many different CFC mixtures can be destroyed at any one time, with the PLASCON® plant automatically adjusting for any changes in the feed composition.



CSIRO/SRL Plasma test Rig used for the destruction of ozone depleting substance

Chemistry

An example of the decomposition chemistry for an ozone depleting substance follows:



A flare is not required as there is sufficient oxygen in the process inputs to favour the formation of carbon dioxide over carbon monoxide.

Operational Efficiency

The commercial destruction of ODS commenced in early 1997 and in less than 3 years over 1,000 tonnes of material was destroyed. Halon can be destroyed at an average destruction rate of 115 kg/h, achieving a Destruction Efficiency (DE) of >99.9999%. When the volume of waste permitted the plant operated 24 hours a day, with one manned shift for general monitoring and maintenance. CFC destruction began in 1998, with a destruction rate of 70 kg/h, 24 hours/day. The DE achieved at 70 kg/h CFC is in excess of 99.9999%. The Montreal Protocol mandated destruction efficiency is 99.99%.

The dioxin/furan emissions from the Tottenham PLASCON® plant are below detectable limits using the I-TEQ (International Toxic Equivalent) standard.

