SUMMARY

Cutler Brands installed new cleaning equipment and reduced the use of thinners by 40% (from 15,000 to 6000 L per annum) and subsequently reduced the disposal of ink soaked cleaning rags. Total savings: $164,930 per annum with an investment of $45,000.
**Business Profile**

Cutler Brands is an Australian owned company employing 94 staff. Since its inception in 1946 the company has developed into a diversified operation based on modern screen printing processes that can perform a variety of product branding and enhancement tasks.

**Financial assistance provided**

An interest free loan of $22,529 was provided by the EPA’s Cleaner Industries Demonstration Scheme.

**Technology implemented**

Installation of the CPS Ink Cleaner and the CPS Stencil Cleaner.

**Cleaner production motivators**

Improve resource management, minimise environmental impact, increase productivity.

**TRADITIONAL APPROACH**

- Approx 2200 kg per annum of ink soaked rags generated from cleaning screens.
- Each printer washed screens with thinners: large loss of production time and high solvent usage, therefore both financially and environmentally undesirable.
- Solvent fumes in the screenshop undesirable for printing personnel.
- High potential for operator to be exposed to chemicals from open old solvent reclaiming unit (no air curtain).
- Hazard to employees during production by using thinners and traditional reclaiming technology.

**WASTE MANAGEMENT**

<table>
<thead>
<tr>
<th>Waste stream</th>
<th>From cleaning ink from screens</th>
<th>From cleaning stencil from screens</th>
</tr>
</thead>
<tbody>
<tr>
<td>The process generating waste</td>
<td>Ink cleaned from screens after printing and before storage for re-use.</td>
<td>Stencil removed from the screen and replaced at end of its life.</td>
</tr>
<tr>
<td>Disposal method</td>
<td>Rags collected and transported to landfill.</td>
<td>Fluid to sewer after screening solids.</td>
</tr>
<tr>
<td>Cost of disposal</td>
<td>$700 per annum</td>
<td>Approx $9500 per annum</td>
</tr>
</tbody>
</table>
Benefits recommended and implemented
The new technology developed allows the complete washing of screens in a central area by one operator, with the screens being cleaned of ink, stains and stencils and looking all but new by the end of the process. The units are connected to the plant’s exhaust system offering effective ventilation.

CPS Ink Cleaner
The CPS Ink Cleaner removes ink from the screens without using rags. The screen wash is pumped and circulated from the upper level of the tank providing for prolonged and improved cleaning. It is then recirculated. Chemicals are used to make the ink soluble. Filtration through the filter mat withholds larger particles preventing pump blockages. The conical shaped bottom of the solvent tank ensures effective collection of sediments and removal of sludge.

CPS Stencil Cleaner
The CPS Stencil Cleaner removes stencils. The spray dispenser unit promotes quick and efficient spraying of a ready-to-use stencil remover or degreaser.

Figure 1. Comparison of the Cleaner Production investment ($ per annum) and an annual financial return.
### ENVIRONMENTAL

| Storage, usage and handling of chemicals | • Number of ink soaked rags used for cleaning screens substantially reduced.  
| Wastewater | • Minimised volume of generated waste, reduced hazardous content and reduced amount of waste needing disposal. System also filters waste and controls pH of wastewater discharged to sewer.  
| OHS | • Significant reduction in operator exposure to fumes from thinners and the danger of spillage due to reduced usage.  
| Productivity | • Optimised effectiveness. Chemicals used more efficiently, reducing consumption.  
| Investment | • $45,000 (includes EPA contribution).  
| Savings, outcomes | • Savings in use of thinners $6190  
| Payback period | • Approx 4 months.  
| ECONOMIC | • Solvent recycling means a significant reduction in the volume of solvent used and sent off site, from 15,000L to 6000 L per annum. Solvent now needs to be replaced only once every 4-6 months.  
| Productivity | • Print machine down time reduced by 1950 hours per annum, representing $105,000 per annum and an additional earning capacity without additional labour costs, increasing gross profits by $25,000 per annum.  
| OHS | • Significant reduction in operator exposure to fumes from thinners and the danger of spillage due to reduced usage.  
| Performance | • Printers and juniors now freed from tedious task of cleaning screens can devote more time to production.  
| Savings, outcomes | • Savings in rag usage $3740  
| Payback period | • Improvement in delivery to clients by increasing product turnover.  
| OHS | • Small amount of airflow at the front edge of the machine helps protect the operator from exposure to solvent vapours.  
| Performance | • Additional earning capacity without additional labour costs $25,000  
| Savings, outcomes | • Reduced print machine down time $105,000  
| Payback period | • Less frequent contact with solvents and chemicals from reduced solvent usage and unit being enclosed.  
| OHS | • In the event of contact with chemicals, CPS system far less hazardous by virtue of chemistry being very dilute.  
| Performance | • Savings in use of thinners $6190  
| Savings, outcomes | • Improved gross profit from capacity increase $25,000  
| Payback period | • Fire risk substantially reduced by elimination of flammable solvents.  
| ECONOMIC | • Additional earning capacity without additional labour costs $25,000  
| Savings, outcomes | • Total savings $164,930  
| Payback period | • Reduced print machine down time $105,000  
| OHS | • Total savings $164,930  

WHERE TO FIND ADDITIONAL INFORMATION

Mr Jack Walter  
Managing Director  
Cutler Brands Pty Ltd  
33 Humphries Terrace  
Kilkenny SA 5009  
Ph: (08) 8268 9888