SPAIN

Med Clean Propre Limpio Terraneum

UNEP

MAP

Regional Activity Centre for Cleaner Production

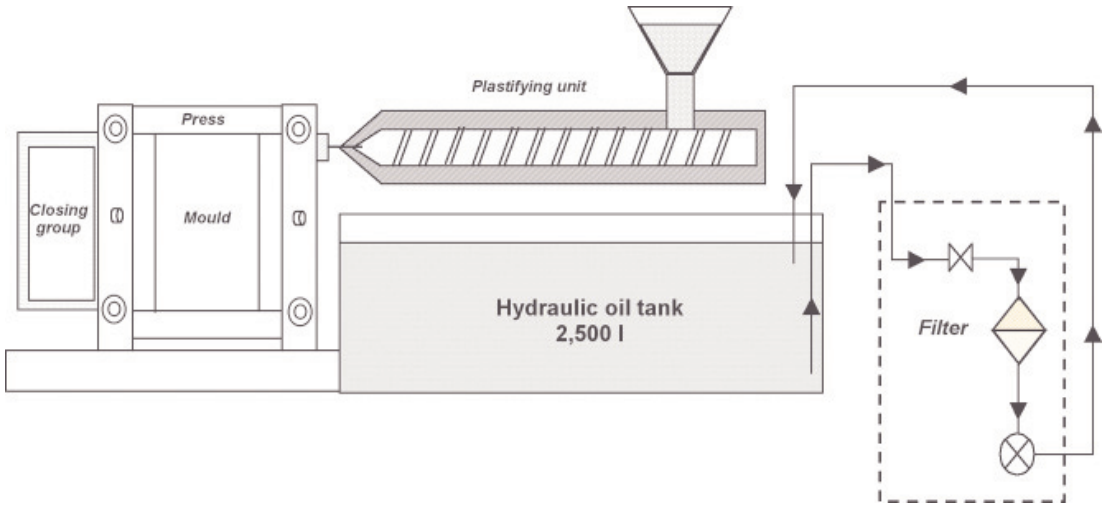
MINISTERIO DE MEDIO AMBIENTE

Generalitat de Catalunya
Government of Catalonia
Department of the Environment and Housing

Recycling of hydraulic oil at a factory in the automotive industry

Company	Faurecia, Abrera (Spain).
Industrial sector	Automotive. Manufacture of interior modules for motor vehicles.
Environmental considerations	The company Faurecia manufactures various plastic components for the automobile industry such as, instrument panels, door panels, consoles, airbag covers, etc. The production process is based on the manufacture of the various parts which are then joined together to form the module. The manufacture process of the different modules consists of the following stages: reception of raw material, injection, painting, thermoforming and assembly. To manufacture the parts, the plastic injection mould machines use hydraulic oils for their operation. These hydraulic oils suffer a certain amount of degradation due to impurities collected such as resins, metals, etc., which leads to the end of their life and requires their management as waste.
Background	Faurecia generated used hydraulic oil waste from its plastic injection machines. These hydraulic oils, together with oil leakages from the machines led to the generation of waste. In 2002, the company started an action plan to identify the activities causing the highest environmental impact and it applied corrective measures, considering the plastic injection line their first objective. Actions focused on the following aims: • Achieving a process that would make it possible to extend the life of the hydraulic oils. • Reducing the amount of used hydraulic oil waste. • Reducing the consumption of hydraulic oils.
Summary of actions	The project consisted of the installation of hydraulic oil filters in the oil circuits of the machines; the filtering system makes it possible to eliminate the impurities that used to accumulate making it necessary to change the oil often and take care of the waste management. The filtering system makes it possible to extend the life of the oil, so that the change of oil in the machines has gone from being carried out once a year to every seven years.

Diagram



Balances

Balances	Old process	New process
Balance of materials		
Consumption of hydraulic oils (t/y)	22.40	5.68
Hydraulic oil waste (t/y)	28.40	7.10
Economic balance		
Cost of hydraulic oils (€/y)	17,920	4,544
Management cost of hydraulic oil waste (€/y)	4,368	1,107
Savings and expenses		
Savings in hydraulic oil consumption (€/y)		13,376
Savings in management of hydraulic oil waste (€/y)		3,261
Total savings (€/y)		16,637
Investment in installations (€)		12,068.66
Payback period (years)		0.72

Conclusions

The implementation of the project has made it possible to extend the life of the hydraulic oils of the plastic injection machines, leading to a reduction in the consumption of hydraulic oils by 16.72 t/year, while achieving a 60% decrease in the generation of hydraulic oil waste, which represents a minimisation of 21.3 t/year.

This at-source pollution prevention action is the result of the company's environmental policy and is included in the 2002 continual improvement Plan. It should be noted that the company obtained the ISO 14001 certification in December 2003 and continues to carry out periodic assessments of its Environmental Management System, and promote the continual improvement of its processes.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

Regional Activity Centre for Cleaner Production
Dr. Roux, 80
08017 Barcelona (Spain)
Tel. (+34) 93 553 87 90
Fax. (+34) 93 553 87 95
e-mail: cleanpro@cprac.org
http://www.cprac.org