THE END OF LIFE VEHICLE DIRECTIVE 2000/53/EEC

The End of Life Vehicle Directive 2000/53/EEC has evolved from the 1975 Directive on Waste (75/442/EEC) and the 1991 Directive on Hazardous Waste (91/689/EEC)

It was adopted by the European Parliament on 18th September 2000 and will be law in England on 18th March 2002.

Objective:

> *"This directive lays down measures which aim, as a first priority, at the prevention of waste from vehicles and, in addition, at the reuse, recycling and other forms of recovery of end of life vehicles and their components so as to reduce the disposal of waste, as well as at the improvement in the environmental performance of all of the economic operators involved in the life cycle of vehicles and especially the operators directly involved in the treatment of end of life vehicles."*

End of life vehicles in the EEC member countries generate between 8 and 9 million tons of waste per year, and it is for this reason that this legislation aims to reduce and control this by

- Minimising the amount going to landfill
- Avoiding hazardous materials in the manufacture of the car
- Recycling as much material back into vehicle manufacture

The following will need to be put in place to meet the requirements of this legislation:-

- Banning lead, mercury, cadmium and hexavalent chromium from July 2003 (with some minor exceptions – as listed in Annex II of the Directive, see below).
- Pan-European coding system for materials used to be used for car components
- Manufacturers to pay for new cars disposal from June 2002
- Manufacturers to pay for old cars disposal from January 2007
- Manufacturers to provide dismantling manuals to disposal firms
- Recycling target of 85% of car's contents by 2006
- Recycling target of 95% of car's contents by 2006
- Permits to be required for car dismantlers and recyclers
- Certificates of destruction provided to last owner once car is disposed of.

Annex II

Lead as an alloying element

1. Steel (including galvanised steel) containing up to 0.35% lead by weight
2. Aluminium containing up to 0,4% lead by weight
3. Aluminium (in wheel rims, engine parts and window levers) containing up to 4% lead by weight
4. Copper alloy containing up to 4% lead by weight

4a. Lead/bronze bearing-shells and pistons

Lead and lead compounds in components

5. Batteries within the framework of Directive 91/157/EC
6. Coating inside petrol tanks
7. Vibration dampers
8. Vulcanising agent for high pressure or fuel hoses
9. Stabiliser in protective paints
10. Solder in electronic circuit boards and other applications

10a Balance weights, with a protective coating giving at least 10 years corrosion protection

Hexavalent chromium

11 Corrosion preventative coating on numerous key vehicle components (maximum 2 g per vehicle)

Mercury

12. Bulbs and lighting elements

Cadmium

12a. Batteries within the framework of Directive 91/157/EC

It should be noted that **electroplated chromium** (i.e. bright nickel chrome plating for decorative purposes or hard chrome for engineering purposes) is not affected by this directive as it is an inert metal.

Below is a copy of a letter from Ford which highlights their views on this subject :-

Ford Motor Company
The American Road
P.O. Box 1899
Dearborn, Michigan 48121-1899
November 8, 1999

To: Production Part and Material Suppliers

Subject: Ford Corporate Vehicle Recycling Strategy

Substance of Concern

Mercury, cadmium, hexavalent chromium, and many applications of lead must be eliminated from new Ford vehicles by the 2003 model year, and applications of polyvinyl chloride must be eliminated by the 2006 model year where technically and economically feasible. Suppliers should be prepared to report all uses of these substances, and should explore the use of viable substitute materials.

If you have questions regarding component and/or material impacts, please contact the staff of our Vehicle Recycling department [Bill Orr on (313) 248-2384 in the US or Dr. Bernd Gottselig on (49) 221-901-2109 in Europe]. On issues regarding specific vehicle program actions, suppliers should work with the appropriate individual program management teams. Thank you in advance for your support.

Signed,

Carlos E. Mazzorin
Group Vice President
Purchasing and Ford of Mexico

Neil W. Ressler
Vice President and Chief Technical Officer
Research and Vehicle Technology

Similarly Daimler Chrysler have Daimler Chrysler have stated that:-

The use of a hexavalent chromium or trivalent chromium passivate is optional for parts prior to January 1, 2003.
Starting January 1, 2003, the hexavalent chromium option is not allowed. This time period shall be used to develop the trivalent system that will be used in order to ensure a smooth, "transparent" changeover. NO TOPCOAT OR SEALERS ARE ALLOWED ON FASTENERS UNLESS APPROVED BY FASTENER ENGINEERING.

As electroplaters our concern is that of **Hexavalent Chromium – in other words the use of yellow, black and olive drab passivates.**

Although the directive allows for 2 grams to be used per car, this has been very difficult to measure. One major manufacturing has stripped a car down and tried to remove and weigh the amount of hexavalent passivate present on all the parts. Unfortunately the process of removing the passivate film reduces a proportion of the substance to trivalent chromium and so the resultant weight is not an accurate measure.

Another manufacturer has gathered together details of the surface area of all components with hexavalent passivate on them and made a calculation of the weight of passivate.

Both these methods have had their difficulties and there is now a general opinion amongst the manufacturers that it is probably better to remove all hexavalent passivates rather than try to prove that the amount is below the 2 grams limit.

The Automotive Manufacturers, the component supply chain and the metal finishing industry now need to ensure that satisfactory alternatives are available within the timescales of the directive.

P.S

The European Commission has adopted a proposal for a Directive on Waste Electrical and Electronic Equipment (WEEE) and a proposal for a Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment from 1 January 2008 onwards.
This will mean that in seven years time we could be looking at this issue again for all components supplied to the electrical and white goods industries in Europe !