



Hart Materials Limited supplies **A full aqueous Chemical Spray-Silvering Process**

Process Chemicals

The Hart Materials Limited system is a fully aqueous process consisting of two separate stages. Firstly the surface to be treated must be sprayed - from a single nozzle spray gun - with a sensitising solution. The second stage consists of spraying the sensitised surface with two different solutions one containing a silver salt and the other a reducing agent. These solutions must be supplied separately from a twin nozzle gun. This type of gun is designed so that the two solutions mix about 250 mm in front of the nozzles of the gun at which point they impinge onto the surface being treated and react to form a film of pure silver metal.

The process chemicals are supplied as four concentrated solutions.

- Sensitiser Concentrate
- Silver Solution Concentrate
- Buffer solution Concentrate
- Chemical Reducing agent Concentrate

The Sensitiser and Chemical Reducing Concentrates are ready to use after dilution.

The Silver and Buffer Concentrates must be mixed in appropriate proportions and diluted before use.

The silver layer produced is suitable for use as an electrically conductive layer on the surface of a non-conductive substrate that subsequently allows nickel metal to be electrodeposited on top of the silver layer. This layer is so thin that it allows the dimensions and surface topography of the substrate material to be reproduced by the nickel electrodeposit with extreme accuracy.

The visual quality of the silver film is also excellent. It can therefore be used as a highly reflective layer – generally on plastics or glass substrates – for decorative applications. This normally requires a suitable lacquer undercoat before silver spraying and a lacquer top-coat to protect the silver layer from corrosion or mechanical damage. The lacquer top-coats can be coloured to achieve a variety of decorative effects.

Hart Materials Limited

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Spray guns

Hart Materials Limited supply a special twin nozzle spray gun to dispense the silvering solution and the reducing solution simultaneously onto the surface of the work-piece. Single nozzle spray guns for dispensing the sensitising solution are also available.

The design and nozzle sizes of both types of gun are optimised to maximise the efficiency of the spraying process in relation to the low viscosity of the aqueous solutions involved.



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