



## Application Note

### Auto Darkening Welding Helmet Lens

#### Problem

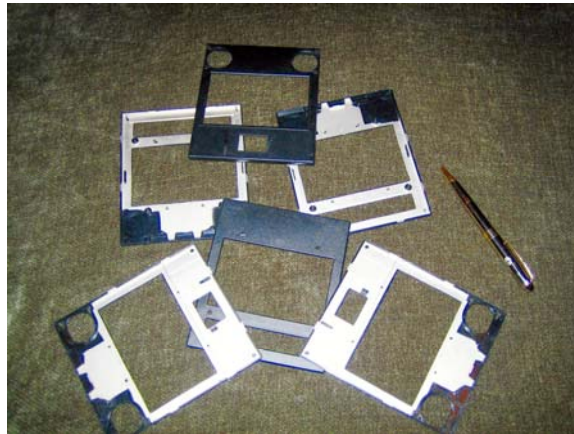
A major welding helmet manufacturer was experiencing electrical interference that caused its Auto Darkening Lens to malfunction. Certain welding torches and operating environments interfered with the electronics that controlled the Auto Darkening Lens performance. The result was that the lens would occasionally not darken immediately when the torch was ignited, which could lead to eye damage of the welding operator.

#### Cybershield Solution

Cybershield teamed with the OEM to design and fabricate the selectively plated plastic lens cover, where the EMI shielding was applied precisely to areas on the interior of the Lens Housing. PC/ABS was specified due to its low cost, high impact strength and ability to be plated. Cybershield applies selective electroless plating with 10-20 micro-inches (0.25-.50  $\mu$ ) Nickel over 80-120 micro-inches (2.0-3.0  $\mu$ ) Copper. The customer required lot certification that the coating met the ASTM 3359 plating adhesion standard.



Auto Darkening Welding Helmet



Cybershield Selectively Plated Nickel over Copper EMI System

Many other plastic resins are compatible with Cybershield plating processes.

<b>Plateable Resins</b> – Consult Cybershield for details
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ABS, PC/ABS, Polycarbonate, Polyetherimide (Ultem), Syndiotactic Polystyrene (SPS), Noryl, Polypropylene, Polyphthalamide, Polyethersulfone (PES), LCP, Xylex, Urethane, Nylon, Epoxy, Polyetheretherketone (PEEK),
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**For more information about this application, Cybershield capabilities and/or to review your application requirements for metallized plastic, contact Cybershield**

**Cybershield**  
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- Fabricate a full range of EMI shielding solutions – Electroless Plating and Conductive Paint
- Electroplating Copper, Nickel, Trivalent Chrome, including decorative plating on plastics and metal
- Offer engineering design assistance – plastic resin selection, metal coating specification and mechanical design recommendations
- Serve applications in volumes from 25 units per month to millions of units per month
- Provide extensive mechanical assembly services to its customers
- Manage entire supply chain, including plastic injection molding to provide customers with turnkey solutions, designed and manufactured to strict OEM requirements

**EMI Shielding, ESD and Electroplated Coatings**

All-over & Selective Coverage  
 Electroless Plating Copper, Nickel, Tin, Gold  
 Electroplating Copper, Nickel, Trivalent Chrome  
 Conductive Paint

**Assembly Services**

Dispensed Gaskets (Conductive or Environmental)  
 Insert Installation (Ultrasonic or Heat Staking)  
 Decorative Paint  
 Mechanical Assembly

**Other Cybershield Plastic Metallization Systems**



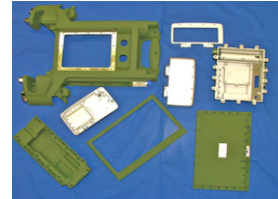
Plated Plastic  
Router Chassis



Plated Plastic RF  
Filter Housing



Plated Plastic  
Shielded Connectors



Military Electronics  
EMI Shielding