Electrically conductive nickel coating

Applying electrically-conductive nickel coating 3800N series is a fast and easy method for EMI/RFI shielding/screening of plastic enclosures/housings. Your electrostatically sensitive applications can be shielded by using an electrically conductive paint containing nickel, copper or silver.

The paint comes in aerosols (Part number 3801N) for easy use, but can also be supplied in tins of 5 liters, 7 kg (Part number 3805N) and tins of 20 liters, 28 kg (Part number 3820N) if you need larger quantities. Materials such as iron-chromium-aluminium and molybdenum disilicide are used for higher temperature applications.

Some oxide ceramics are used as conductors and semi-conductors for specialized applications. To fulfill the requirements concerning the limits of immunity and emission to interference, plastic housings and components need to be coated either fully or selectively with an electrically conductive coating. The nickel-conductive coating is contained in an air-drying acrylic resin.

The resin becomes touch dry 15 minutes after application and achieves maximum conductivity within 24 hours. It is intended to prevent electrical interference which penetrates enclosures made from thermoplastics and other insulating materials. The coating also prevents static build up.

It is recommended that an grounding connection is made to achieve maximum shielding performance. A suitable material for this is Part number 3201, Copper shielding tape which can simply be stuck onto the coated surface or over-sprayed with the electrically-conductive nickel coating. The coating, once it has been applied, has a mat gray textured finish.

3801N : Electrically-conductive nickel coating in aerosols of 400 ml

Conductive nickel coating applied to plastic enclosures to prevent electromagnetic interference

3820N : Electrically conductive nickel coating in packaging of 20 liters (28 kg)

Benefits:

- Available in aerosol for prototype and small runs (Part number 3801N)
- Low surface resistivity of 0.9Ω/sq yielding high attenuation
- Enables speed and easy coverage of complex shapes
- Delivery from stock
- Cost-effective solution
- Compatible with most plastics and metal substrates, the paint meets the requirements of BS IEC 61340-5-1:2001 (Basic specification: Protection of electronic devices from electrostatic phenomena) and suitable for use in Atex hazardous environments.

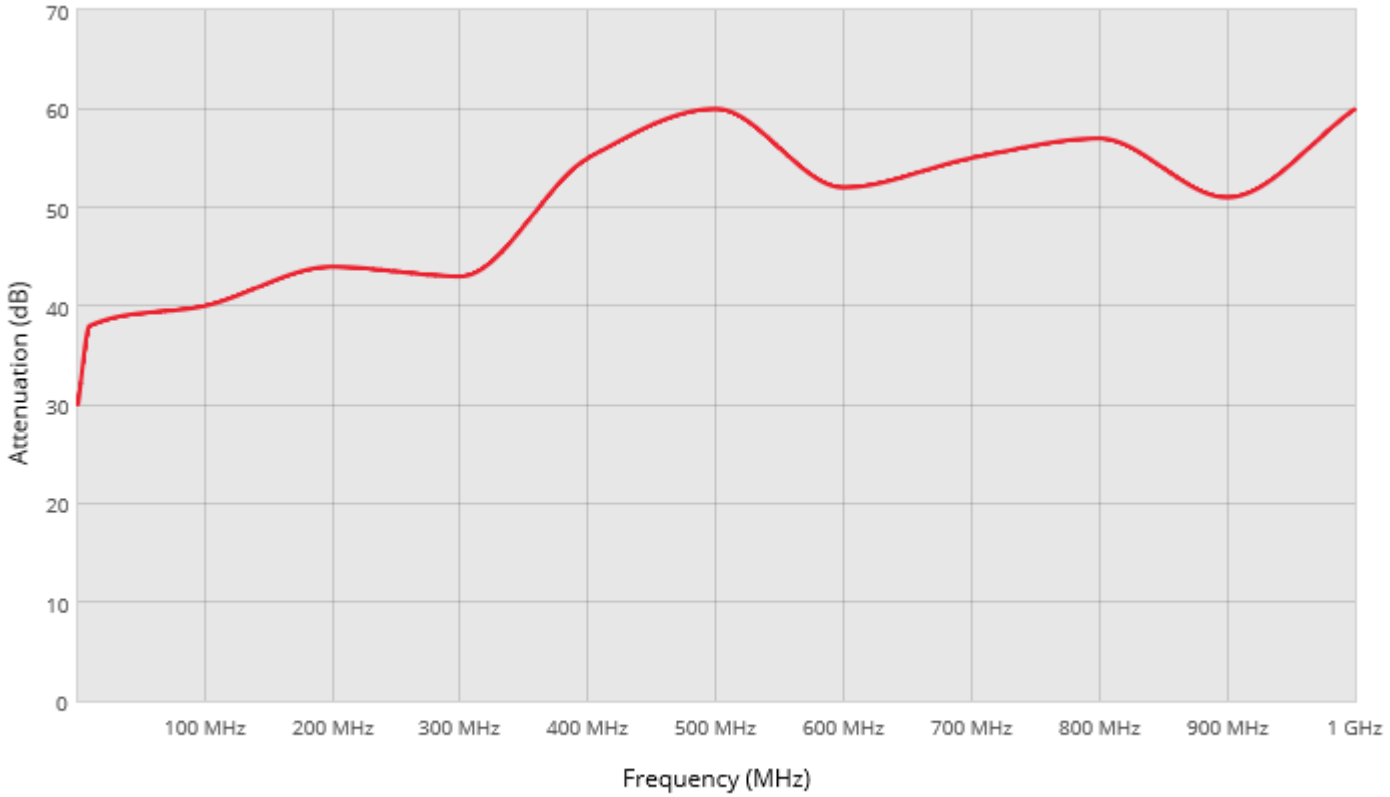
Physical properties

Electrically conductive nickel coating

Colour	grey
Flash point (Abel closed cup - method IP 33/59)	25 °C
Recommended dry film thickness (ASTM D 4138-82)	50 microns (2 thou)
Specific gravity	1.5 g/cc
Coverage per litre at 50 microns	7-10 square metres
Drying time: touch	15 minutes
Drying time: full	12 hours
Adhesion (BS 3900 E6)	Excellent
Pencil hardness (ASTM D3363-74)	H
Shelf life	12 months
Surface resistivity at 50 microns (2 thou) ASTM D257	0.5 Ohms/square or less
Viscosity when thinned 1:1 with *** thinners	0.6 p on a cone & plate, 27-32 secs on a B4 flow cup
Shielding effectiveness (dB)	50-55
UV-resistant	Yes

Shielding effectiveness
3800 series - Conductive nickel coating

Electrically conductive nickel coating



Please note : These values are measured under laboratory conditions. Results may vary in other situations; please read our Guarantee.

Method of use

Surface preparation: All contaminants including mould release, grease and dirt must be removed. Mask areas that do not require coating. A suitable primer may be necessary on certain substrates such as Polyethylene and Polypropylene, etc.

Mixing and application: Care must be taken to ensure the concentrate is thoroughly mixed to ensure that all the solids are in suspension.

Electrically-conductive nickel coating may settle out and regular agitation is recommended during spray application. The paint should be diluted with thinner *** to suit local spray conditions. Typically 2 parts of concentrate to 1 part thinner can be used in a conventional gravity-feed spray gun or, alternatively, a pressure pot with agitator. Gun pressure of 30 psi is recommended. Two passes are normally required to achieve optimum thickness and surface resistivity values.

Brush coating: Brush coat from the can, or thinned to suit the application.

Availability

Part number	Description
3801N	Aerosol 400 ml
3805N	Tin 5 liters (7 kg)
3820N	Tin 20 liters (28 kg)

Applying the electrically-conductive nickel coating

For easy application of the electrically-conductive nickel coating, we have a small sprayer which is to be connected to a compressor.

PRECAUTIONS

Electrically conductive nickel coating

The 3801N is in a pressurised container. Protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Do not spray on an open flame or any incandescent material. Keep away from sources of ignition - No Smoking (S16)

Use Under Well Ventilated Conditions: Contains Nickel, Ethyl Acetate, Xylene,Butyl Ethanoate, Isobutanol. - Do not breath vapour (S23). Harmful by inhalation (R20). In case of insufficient ventilation - wear suitable respiratory equipment (S38), such devices must be used in accordance with the manufacturer's instructions. For excessive vapour inhalation, remove to fresh air and summon medical attention.

Avoid Contact With Skin And Eyes (S24/25) - In case of skin contact, wash with soap and water, dry and apply work cream. Eye contact - flush with water for at least 15 minutes and seek medical attention. If accidentally swallowed, summon medical attention.

Application of Electrically Conductive Nickel Coating (on request)

For easy application of electrically conductive nickel coating, we have a small sprayer that needs to be connected to a compressor.

Notice:

To avoid confusion between the nickel and copper aerosols, the name of the conductive nickel coating 3800 has been changed to 3800N

For this product there are **no free samples** available.

Part number

Select an option:

3801N : Aerosol 400 ml

3805N : Tin 5 liters (7 kg)

3820N : Tin 20 liters (28 Kg)

* Note: The **red** blocks are required