# *O*Tech Palladium - Palladium Ink for Electrodes and Plating Data Sheet

## Product description

OrelTech's unique process allows printing and aerosol spraying of highly conductive palladium thin films or non-connected nanoparticle islands. Printed layers undergo short development (curing) using plasma treatment resulting in a thin fine pure palladium structure. OrelTech inks in liquid form do not contain nanoparticles and are significantly environmentally friendlier than the alternatives on the market. Lack of nanoparticles also allows them to be much more cost-effective than other conductive inks.

## Benefits

- Coating and patterning by inkjet, aerosol or dip-coating
- Low temperature process
- Printed on polymers, metals and fabrics
- No solid or liquid waste
- Material saving
- Cost-efficient solution

## Typical properties of the ink

| OTech Jet | |
|---|---|
| Viscosity, cP | 3 – 10 |
| Shelf life, 4°C | **2 months** |
| Cure type | Cold plasma |
| Application method | Inkjet, slot-die, aerosol |
| Substrate | Plastic, paper, fabric |
| Appearance | Clear tea-colored liquid |
| Applications | • Plating<br>• Electrodes<br>• PCBs<br>• Calalysis<br>• Other sensitive devices |


**Not for distribution**
**For additional questions please contact konstantin@oreltech.com**

## Directions for use and storage

- **Storage**: Inks can be stored in closed containers in cold, dry conditions (fridge, **3°C**) for up to 2 months.

- **Clean-up**: Materials can be cleaned up using alcohols and ketones, preferably isopropanol.

- **Pre-treatment**: It is recommended to **filter (3 µm)** prior to use. In some cases, to ensure better wettability and/or adhesion, the substrate material must be pre-treated prior to ink application.

## Curing conditions

- **Curing time**: 5-10 minutes.

- **Curing apparatus**: Cold plasma instrument with a low pressure chamber.

- **Curing temperature**: Temperature in the plasma chamber does not exceed 70 °C. No additional heating is needed. That temperature can be lowered to room temperature using a temperature-controlled plasma chamber.

## Typical properties of the cured film

| | |
|---|---|
| Sheet resistance, Ω/□ (when applicable) | 50 |
| Adhesion | Tested on PET, PI, ABS |
| Layer thickness, nm | 20 – 100 |