

# Service-Information 07

## Physical parameters of inks



Issued August 2003

Dear customers,

“...inks of finest quality“ is OCP’s slogan since foundation — but how to prove that our inks are of finest quality? Giving measurement figures can be an objective way to prove quality, if high qualified equipment is used, only. OCP uses only computer-controlled measurement equipment to measure the following physical parameters of every ink batch produced. This data is presented to our customers in our unique „Batch Certificates“ which are available upon request for every batch of ink.

### Surface Tension / Interfacial Tension

This parameter influences to following print out properties:

- ◆ Sharpness
- ◆ Penetration of ink into print media
- ◆ Primary diffusion
- ◆ Color gamut
- ◆ Ink flow inside an ink-jet cartridge

### Viscosity

- ◆ Influences sharpness and also penetration of the ink into print media
- ◆ Controls ink flow inside the cartridge, in combination with surface tension
- ◆ Can cause ink starvation (if viscosity is much too high, ink flow can be blocked completely)

### pH value

- ◆ Due to too low (acid) or too high (alkali) pH, ink can cause corrosion
- ◆ For perfect function and stability, the ink’s pH value must be adapted to the dye’s pH

### Conductivity

This parameter is influenced by:

- ◆ Salts (ions)
- ◆ Organic components with ionic properties (dyes)

The conductivity values of OCP inks represent ionic dye properties, only, as the ink water is purified at a conductivity in between 0,1-0,5 µS and all other raw materials have a purity better than 99,5%.

### Density

This parameter corresponds with the arithmetic mean of densities of all substances inside any ink formulation considering their proportions.

All these parameters can be measured in different ways with different type of equipment. OCP provides internationally standardized data as well as data in dimensions which are in some countries still used dominantly.

For details about all available dimensions, please look into the checkbox above.

Yours sincerely,

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**Batch Certificate**

Ink: UJ C 68  
 Batch: 063672

Parameter (y)	Range (y)	Unit	Value of this batch
Surface tension (drop volume)	28.00 - 35.00	mN/m	32.00
(bubble pressure) (y)	27.00 - 34.00	dyn/cm	
Viscosity (kinematic)	2.7000 - 3.0000	mm <sup>2</sup> /sec	2.8229
(dynamic)	2.8000 - 3.8000	mPa·sec	3.3000
pH value	5.50 - 6.50	pH	6.20
Electrical conductivity	3.05 - 3.25	mS/cm	3.21
Density	1.020 - 1.050	g/cm <sup>3</sup>	1.0306

(1) All measurements on scale at 20°C (DIN 201K)  
 (2) Specimen tested: 02/02/2003  
 (3) Alternative parameter (range, only)

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07.07.2003	Dr. R. Hoff
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08.07.2003	Dr. Hoff

This parameter range is subject to be changed by OCP due to technical innovation and/or development.

**Sample of OCP  
“Batch Certificate“**

### Dimensions:

- Surface Tension**     *mN/m (international standard)*  
                               *dyn/cm (previous dimension)*
- Kinematic Viscosity**     *mm<sup>2</sup> / sec (international standard)*  
                                       *cSt (previous dimension)*
- Dynamic Viscosity**     *mPa·sec (international standard)*  
                                       *cP (previous dimension)*
- pH**                             *without dimension*
- Electr. Conductivity**     *mS / cm (international standard)*
- Density / Specific Gravity**     *g / cm<sup>3</sup> (international standard)*

**OCP inks...**  
**...inks of finest quality!**