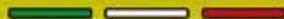


Muchcolours ink: THE FUNDAMENTALS



MuchColours



NANOINK

Nanoinks are hydro-alcoholic solutions containing a siloxane resin able to polymerize with temperature. The thermodynamic equilibrium of the polymerization allows different ratio time-temperature according to different material properties and/or different process requirements.

MuchColours is proud of its inks, as the R&D Department reached all the desired objectives:



- ✓ **No need of pre-printing coating, i.e. direct printing**
- ✓ **Nanotechnology, i.e. inks able to graft surfaces into their structures**
- ✓ **Reliable inks, i.e. no problems on printheads during usage**
- ✓ **Brilliant colours**
- ✓ **Good primary ink colours, i.e. wide gamut-range of printing colours possibility**
- ✓ **No heavy chemical solvents, i.e. no heavy dangers for users**
- ✓ **Alcohol based inks, i.e. fast print dryness**
- ✓ **Versatility, i.e. inks able to print with good performance on glass, EVA, leather, metals and many other materials**

MuchColours has a wide range of inks to satisfy the needs of designers and changeable fashion trends.

CLASSIC_ the four primary ink colours, magenta, yellow, cyan and black

WHITE_ a white ink for printing white as a colour or as a background for primary colours*

TRANSPARENT_ a matt ink for gloss-matt effect*

PLASTIC_set of inks especially designed for plastic media

SILVER_a metallic ink

*(could be used in tempering process)

Only **MuchColours Rip Software** allows the simultaneous use of a special ink (for example white) with the basic ones!

SAFETY DATA SHEET (SDS)

A **Safety Data Sheet (SDS)** is a document that within the harmonized system should provide comprehensive information about a substance or mixture (i.e. the ink) for use in workplace chemical control regulatory frameworks. Both employers and workers use it as a source of information about hazards, including environmental hazards, and to obtain advice on safety precautions. The required format and content of an SDS within the EU Member States is regulated and a new classification will be in force from 1 June 2015. On this document you will find the hazards identification, the advised safety protections and pictograms, i.e. symbols that help the easy identification of hazards.

HAZARDS OF INKS FROM SDS

MANUFACTURER PICTOGRAM	MUCHCOLOURS NANOINK MIG	MIMAKI LUS-200 (UV)	MIMAKI LATEX INK LX100	ROLAND ECO UV	DURST RHO RIGID	HP C2P09
	✓	✓	✓	✓	✓	NOT CLASSIFIED
		✓		✓	✓	NOT CLASSIFIED
		✓		✓	✓	NOT CLASSIFIED
	✓					NOT CLASSIFIED
<p data-bbox="98 869 173 1476" style="writing-mode: vertical-rl; transform: rotate(180deg);">Hazard Statements</p> <p data-bbox="191 805 319 1093">Flammable liquid and vapor. Causes serious eye irritation</p> <p data-bbox="191 989 319 1093">Muchcolours SDS MIG - V1 06/05/2015</p>	<p data-bbox="337 805 479 1324">Causes skin irritation May cause an allergic skin reaction Causes serious eye irritation. Suspected of damaging fertility or the unborn child Causes damage to organs through prolonged or repeated exposure Very toxic to aquatic life</p> <p data-bbox="337 1340 479 1460">Mimaki SDS N°. 031-38U10CB dated 26/07/2013</p>	<p data-bbox="479 805 621 909">Causes mild skin irritation. Causes serious eye irritation.</p> <p data-bbox="479 925 621 1061">Mimaki SDS N°. 031-37W28 CP dated 29/03/2012</p>	<p data-bbox="621 805 763 1452">Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child. May cause respiratory irritation. Cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.</p> <p data-bbox="621 1460 763 1524">Roland ver. G 3.1 del 08/12/2014</p>	<p data-bbox="763 805 907 1396">Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. Suspected of damaging fertility. Causes damage to organs through prolonged or repeated exposure if inhaled. Toxic to aquatic life with long lasting effects.</p> <p data-bbox="763 1420 907 1476">Durst Process 103-12-2013</p>	<p data-bbox="907 805 1055 1077">HP SDS C2P09 Series [Y][3] vers. N°. 4 dated 01/19/201; C6635Series [C][3] N°. 1 dated 03/10/2015</p>	

INDUSTRIAL PRINTING

In recent years the demand for **digital decoration** by industry has become increasingly strong. This comes from the fact that the need to make any product more attractive and customizable, is booming. And as a result, the industry has identified, in this technology, the easiness in customization and the slaughter of all the processes impacting on the work environment and application environment.

The nanoink has a color that immediately allowed the industrial processes of decoration.



Industry kitchens that use Muchcolours digital printers



Glass printed in the "primeira igreja batista" church in Brazil

In fact, you can use this color without affecting in any way the other processes of preparation or finishing present in "Factory". By this we mean that if the wood/furniture industry decide to place a decoration before the final lacquering process, may do so without having to replace or adapt their finishing systems. As if in glass you might put a decoration before the lamination process, whether this is done with EVA or PVB, the nano ink keeps its process parameters.

In other words, **great performance**, never seen before in a color digital printing.

Thanks to this, in a short time many industries who need to customize keeping stable its strength parameters and product environmental impact, have chosen Nanoinks from MUCHCOLOURS.

The great attention to all certificates, issued by external independent laboratories, related to the printer and its use, and the environment, allow you to use this color in many different processes: by thermofoming plastic materials to glass, from leather to all those materials that are to be in contact with the person.



An entire glass building's facade printed with Practika



Glass cooktop digitally printed with Practika

The Muchcolours staff is a **team of experts** who gained a wide experience working with the R&B departments of different industries.

This is the base of a technological know-how transfer available to all our customers as a key of their success.

PERFORMANCE OF PRINTED INK



humidity
resistance

ISO 12543-4

3.3.3

1 >>>>>>>> 3

Humidity
PRINTED LAMINATED GLASS.
Tests according to EN 12543-4.
Bubbles (first score),
delamination (second score),
haze (third score) not present
on specimen with EVA or PVB.
No edge protections.
Score: increasing values from
1 to 3.



temperature
resistance

ISO 12543-4

2.3.3

1 >>>>>>>> 3

Temperature
PRINTED LAMINATED GLASS.
Tests according to EN 12543-4.
Fine bubbles beside edges (first
score) on specimen with EVA or
PVB.; delamination (second
score) and haze (third score) not
present on specimen with EVA or
PVB. No edge protections. Score:
increasing values from 1 to 3.



light
resistance

ISO 11341

5.5.5.5

1 >>>>>>>> 5

Light
PRINTED GLASS.
Test according to EN 11341.
Yellow (first score), Cyan (second
score), Magenta (third score)
and black (fourth score) undergo
to any colour change after 500
hours of xenon-arc lamp. [After
1.000 hours, the score is 3.5.5.4].
Score: increasing values from 1 to 5.



Cross Cut
Test

ISO 2409

1-2

5 >>>>>>>> 0

Cross-cut test
PRINTED GLASS.
Test according to ISO 2409. The
resistance of the printed ink to
separation from glass when a
right-angle lattice pattern is cut
into the printed ink, penetrating
through to the substrate, is very
high. Score: decreasing values
from 5 to 0.



H Statement

MSDS

0

5 >>>>>>>> 0

Hazards:
PRINTED GLASS.
Risk assessment of printed glass.
No hazards coming from the
printed inks are identified.
No protections for skin, eyes,
breathing apparatus are needed.
Score: decreasing values from
5 to 0.



Emissions

ISO 16000-6

A+

C >>>>>>>> A+

Emissions
PRINTED GLASS.
A chamber test for 28 days was
performed according to ISO
160003/6/9/11 and according to
the French Decree Number
2011-321 of the 25 march
2011, and French Arrêté of the 19
april 2011. Score: decreasing
values from letter C to A+.



ACUSTICA measured the noise levels of a working MUCHCOLOURS printing system according to the Italian law concerning work safety (D.Lgs. 81/2008).



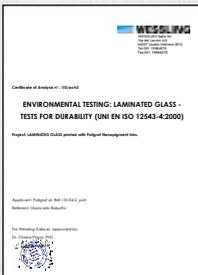
PRINTED GLASS

UNI EN ISO 11341 Paints and varnishes – Artificial weathering and exposure to artificial radiation – Exposure to filtered xenon-arc radiation.



PRINTED GLASS

EN ISO 16000-3/6/9 Indoor air – Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air – Active sampling method – Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS or MS-FID– Part 9: Determination of the emission of volatile organic compounds from building products and furnishing Emission test chamber method



PRINTED LAMINATED GLASS

UNI EN ISO 12543-4:2000 Glass in building – Laminated glass and laminated safety glass – Part 4: Test methods for durability



PRINTED COIL COATED METALS

EN 13523-9 Resistance To Water Immersion (T-BENDS TEST)



PRINTED COIL COATED METALS

EN 13523-8 Resistance To Salt Spray (fog)



PRINTED COIL COATED METALS

EN 13523-10 Resistance To Fluorescent Uv Radiation And Water Condensation

**You can add value to your products
thanks to our tests and certifications.**

Tell to your customers how you are taking care

**of the Environment,
of the Safety of your workers,
of the Health of your customers,
of the Quality of your products.**



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