

# graphispag

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RECINTO GRAN VIA



**Fira Barcelona**

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TINTAS, BARNICES Y  
RECUBRIMIENTOS EN BASE AGUA  
PARA LA IMPRESIÓN SOSTENIBLE.  
PREPARADOS PARA LA ECONOMÍA  
CIRCULAR

*WATER-BASED INK SOLUTIONS FOR  
SUSTAINABLE PRINTING INNOVATIONS.  
PREPARED FOR THE CIRCULAR ECONOMY*

Laura Pomés  
*Technical Manager*



**Quimovil** S.A.  
GRAPHICS INDUSTRY INKS  
Water based inks experts

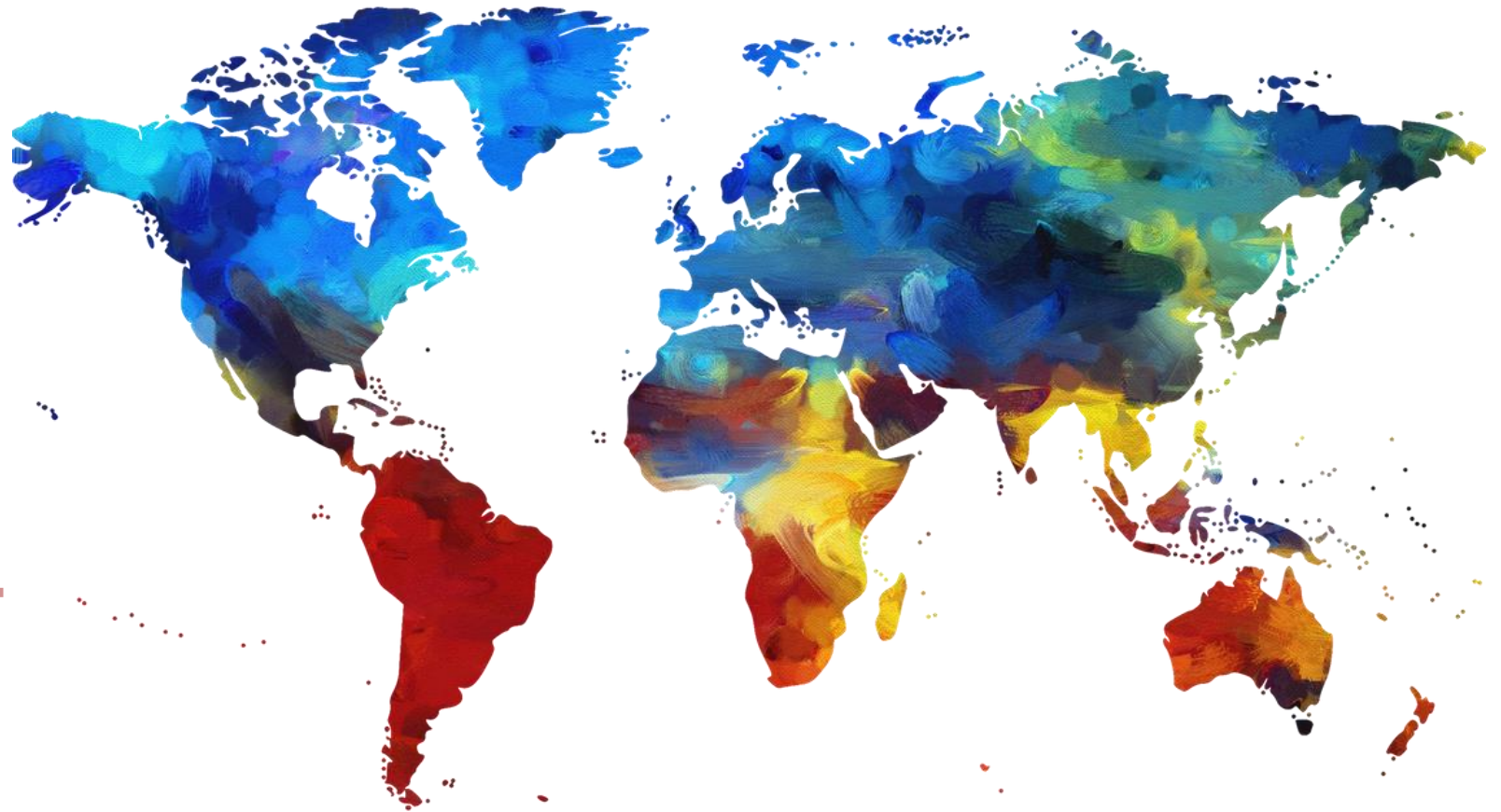
**QUIMOVIL - PRESENTATION**

**EU GREEN DEAL**

**CARBON FOOT PRINT AND VOCs**

**INKS – FOUR SUSTAINABLE STRATEGIES**

- Specialists in the design and manufacture of **WATER-BASED** flexographic printing inks, varnishes and coatings
- 60 years' experience
- Headquarters in Barcelona (Spain)
- Sales offices in Madrid and Valencia
- Presence in South America, Africa, Australia and Europe
- Flexible manufacturing system
- Own **R&D** Department
- **SERVICES:** Direct technical support, Consulting, Trainings, Strategic environmental services...



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<https://audiovisual.ec.europa.eu/en/video/l-199819?&lg=EN/EN>



Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal will transform the EU into a modern, resource-efficient and competitive economy, ensuring:

- no net emissions of greenhouse gases by 2050
- economic growth decoupled from resource use
- no person and no place left behind

[https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)

Ministerio de Transición Ecológica de España:

La totalidad de gases de efecto invernadero (GEI) emitidos por efecto directo o indirecto por un individuo, organización, evento o producto.

**GEI:**

Dióxido de Carbono (CO<sub>2</sub>)

Metano (CH<sub>4</sub>)

Óxido nitroso (N<sub>2</sub>O)

Hidrofluorocarbonos (HFCs)

Perfluorocarbonos (PFCs)

Hexafluoruro de azufre

**Cómo se calcula:**

- ✓ Consumo de combustibles fósiles
- ✓ Consumo eléctrico
- ✓ Fugas de equipos de climatización

[https://www.miteco.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/guia\\_huella\\_carbono\\_tcm30-479093.pdf](https://www.miteco.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/guia_huella_carbono_tcm30-479093.pdf)

PCG: Potencial de calentamiento global de los gases de efecto invernadero

Gas	PCG
Dióxido de Carbono (CO <sub>2</sub> )	1
Metano (CH <sub>4</sub> )	21
Óxido Nitroso (N <sub>2</sub> O)	296
Fluorocarbonos (HFC)	120 – 12.000
Perfluorocarbonos (PFC)	5.700 – 11.900
Hexafluoruro de azufre	23.900

### COV : EMISIONES DE CO<sub>2</sub> INDIRECTO

“Los compuestos orgánicos volátiles (COV) son todos aquellos hidrocarburos que se presentan en estado gaseoso a la temperatura ambiente normal o que son muy volátiles a dicha temperatura. Se puede considerar como COV aquel compuesto orgánico que a 20°C tenga una presión de vapor de 0.01 kPa o más, o una volatilidad equivalente en las condiciones particulares de uso”. RD 117/2003.

*Por ejemplo: Acetato de etilo, acetato de propilo, alcohol etílico, alcohol isopropílico, etc.*

Cómo se convierte el valor de COV en CO<sub>2</sub>:

$$\text{Emisión de CO}_2 = \text{Emisión de NMCOV} * 0,60 * 44/12$$

[https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/emisiones/act-emis/compuestos\\_organicos\\_volatiles.aspx](https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/emisiones/act-emis/compuestos_organicos_volatiles.aspx)

# FOUR SUSTAINABLE INNOVATION STRATEGIES

1

**WATER-BASED INKS**

2

**INKS MANUFACTURED WITH 100%  
RENEWABLE FEEDSTOCK**

3

**INKS PARTLY BASED ON BIO  
RENEWABLE RAW MATERIALS**

4

**NEW OK-COMPOST INK SERIES**



1

## **WATER-BASED** INKS FOR PRINTING ON PAPER, CORRUGATED BOARD AND FLEXIBLE PACKAGING *(surface and reverse print & lamination applications)*



- Very low (or no) VOC content:
  - VOCs treatment is not necessary
  - Less solvent consumption
- Less volatile substances used in production increase safety both for workers and for the finished food packaging
- Non-flammable:
  - No special handling or storage requirements
  - No explosion proof equipment are necessary
- The same quality and performance as solvent-based inks
- More stable on press
- Higher yield
- Higher photopolymer plates useful life

### REDUCTION OF:

- ✓ VOCs content
- ✓ Carbon footprint
- ✓ Fossil resources

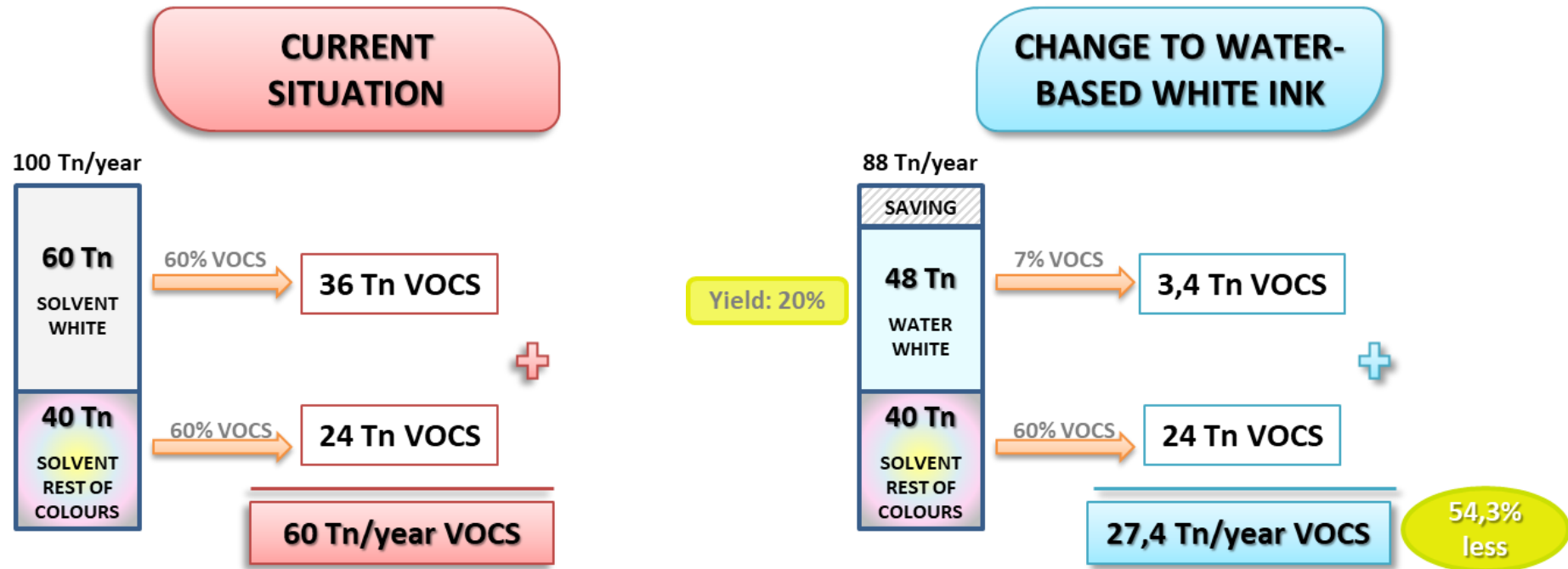
For flexible packaging:  
**#WePrethinkINK**

1

# WATER-BASED INKS FOR PRINTING ON PAPER, CORRUGATED BOARD AND FLEXIBLE PACKAGING

(surface and reverse print & lamination applications)

**\*CASE STUDY:** TOTAL VOCs EMISSIONS CALCULATION WITH ONLY THE CHANGE OF SOLVENT-BASED TO WATER-BASED WHITE INKS



1

**WATER-BASED INKS FOR PRINTING ON PAPER,  
CORRUGATED BOARD AND FLEXIBLE PACKAGING**  
*(surface and reverse print & lamination applications)*



## TINTAS DE QUIMÓVIL

### IMPRESIÓN REVERSO:

Lamin-Flex

### IMPRESIÓN EXTERIOR:

Aquaplus

RA Aqua-Film

BBB Aqua-Film

### ESPECIALIDADES:

Blanco Neutro-Flex

Heptacromía

Barnices OPV

Primers

Blancos cubrientes

Tintas metalizadas

Serie Soluflex

Serie Film-Quimo-Iris: OK COMPOST

1

**WATER-BASED** INKS FOR PRINTING ON PAPER,  
CORRUGATED BOARD AND FLEXIBLE PACKAGING  
*(surface and reverse print & lamination applications)*



**FOOD SAFETY RISK ANALYSIS** *(Lamin-Flex series):*

- ✓ **OVERALL MIGRATION**, according to UNE-EN 1186-4
- ✓ **SPECIFIC MIGRATION OF PRIMARY AROMATIC AMINES (PAA)**, according to UNE-EN 13130-1
- ✓ **SCREENING OF COMPOUNDS**, on sample and on migration solution

**POSITIVE RESULTS\***

\* According to Regulation (EU) N. 10/2011

1

**WATER-BASED INKS FOR PRINTING ON PAPER,  
CORRUGATED BOARD AND FLEXIBLE PACKAGING**  
*(surface and reverse print & lamination applications)*



**INK CARBON FOOTPRINT** *(Lamin-Flex series):*

- ✓ *CARBON FOOTPRINT OF MATERIALS*
- ✓ *CARBON FOOTPRINT OF MANUFACTURING PROCESS*
- ✓ *CARBON FOOTPRINT OF WASTE VALORIZATION (IMPACT + CREDITS)*

WATER-BASED INKS 25 - 35 %  
LESS THAN SOLVENT-BASED INKS

2

**PRINTING INKS FORMULATED WITH POLYMERS MANUFACTURED WITH 100% RENEWABLE FEEDSTOCK FOR PRINTING ON PAPER, CORRUGATED BOARD AND FLEXIBLE PACKAGING**  
*(100 % substitution of fossil with renewable raw materials)*

**Feedstock**

Fossil



Renewable

**BASF Production  
Verbund**



**Products**



Conventional



Allocated

The new REDcert² standard ensures the correct allocation of renewable resources in BASF's value chain.



Source: BASF «In every change lies a packaged chance»

**PRINTING INKS FORMULATED WITH POLYMERS MANUFACTURED WITH 100% RENEWABLE FEEDSTOCK FOR PRINTING ON PAPER, CORRUGATED BOARD AND FLEXIBLE PACKAGING**  
(100 % substitution of fossil with renewable raw materials)

**\*CASE STUDY: OVERPRINT VARNISH FOR PAPER**

OPV producer purchasing 100 tons/year of standard fossil based varnish and replacing this volume by new renewable based varnish

	CO <sub>2</sub> EMISSIONS (tons CO <sub>2</sub> )	CRUDE OIL CONSUMPTION (tons)
STANDARD fossil based varnish	~116	~58
NEW renewable based varnish	~6	0
<b>SAVINGS (tons)</b>	<b>~110 (~95%)</b>	<b>~58 (100%)</b>

**REDUCTION OF:**

- ✓ Carbon footprint
- ✓ Fossil resources

**1100 tons CO<sub>2</sub> is similar to the savings of ~10500 solar panels\*\***

\*\*Solar panel info: In NL, 1 solar panel delivers ~225 kWh and saves ~103 kg CO<sub>2</sub> per year (0,46kg CO<sub>2</sub>/kWh)

Source: BASF «In every change lies a packaged chance»

**PRINTING INKS FORMULATED WITH POLYMERS  
PARTLY BASED ON **BIO RENEWABLE RAW MATERIALS** FOR  
PRINTING ON KRAFT PAPER AND CORRUGATED BOARD**



- Water-based technology (with all its benefits)
- High content of renewable material (up to 50% on solids)
- Good press performance
- Excellent transfer and color strength
- Ink for a variety of printing and packaging applications: pre- and post-print, corrugated boards, folding cartons, labels, etc.

**REDUCTION OF:**

- ✓ Carbon footprint
- ✓ Fossil resources



4

## SERIE QUIMO-IRIS:

WATER-BASED INKS FOR PRINTING ON COMPOSTABLE PAPER AND PLASTICS, CERTIFICATED BY TÜV AUSTRIA WITH THE **OK COMPOST INDUSTRIAL AND OK COMPOST HOME** CONFORMITY MARKS



### EN-13432 STANDARD

Requirements for packaging recoverable through composting and biodegradation. Test scheme and evaluation criteria for the final acceptance of packaging

#### BIODEGRADABILITY

The amount of carbon dioxide release must be at least 90% as much carbon dioxide given off by a control sample within 6 months

#### DISINTEGRATION

At least 90% of material must pass through a 2mm sieve at the end of 12 weeks

#### CHEMICAL ANALYSIS

The 11 chemicals must be under the stated threshold concentrations shown in the EN 13432 standard *(including Cu: blues and greens!)*

#### ECOTOXICITY

The number of grown plants and the plant biomass of the sample should be no less than 90% of the blank sample

4

### SERIE QUIMO-IRIS:

WATER-BASED INKS FOR PRINTING ON COMPOSTABLE PAPER AND PLASTICS, CERTIFICATED BY TÜV AUSTRIA WITH THE **OK COMPOST INDUSTRIAL AND OK COMPOST HOME** CONFORMITY MARKS

### SPECIAL CONDITIONS WITH INKS (constituent):

- The concentration of **each component** in the final packaging must be limited to **1% maximum** (% of dry weight of the final product).
- The **total** concentration of the components used in the final packaging must be limited to **5%** (% of dry weight of the final product).

~~BIODEGRADABILITY~~

CHEMICAL ANALYSIS

~~DISINTEGRATION~~

ECOTOXICITY

4

## SERIE QUIMO-IRIS:

WATER-BASED INKS FOR PRINTING ON COMPOSTABLE PAPER AND PLASTICS, CERTIFICATED BY TÜV AUSTRIA WITH THE **OK COMPOST INDUSTRIAL AND OK COMPOST HOME** CONFORMITY MARKS

- Water-based technology (with all its benefits)
- Wide portfolio of certificated products
- Suitable for printing on compostable papers and plastics
- Same performance in press than conventional inks
- Excellent printability and resistance properties
- Excellent adhesion on non-absorbing substrates



### REDUCTION OF:

- ✓ VOCs content
- ✓ Carbon footprint
- ✓ Fossil resources
- ✓ Waste

Different **SPREADSHEETS** as tools for helping and advising to our customers in:

- The calculation of the maximum printing surface of each ink (% of the final product)
- The calculation of the technical viability in a real printing work (with different inks)

# gracias



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