

2016

# New water based printing technology

Environmental impact analysis

Rev. 2



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IMBALL - CENTER SRL

## AN AMBITIOUS PROJECT

Between the end of 2015 and the beginning of 2016, Imball – Center Srl has totally renewed his machinery with the purchase of two last generation flexo printing machines by Windmöller & Hölscher.

The company is currently one of the very few European realities that can boast the technological capacity of flexographic water based printing on plastic film, thanks to the newest equipment and the experience of over thirty years in the industry.

## MITIGATION OF ENVIRONMENTAL IMPACT: LESS IS MORE

### Emissions

The release of pollutants into the environment has been brought nearly to zero. For this reason, the new system does not need the abatement equipment and does not produce waste.

Emissions		
Parameters	Solvent based printing	Water based printing
Emission (COT)	70 t/year	2 t/year ( <i>appraisal</i> )
Waterwaste discharged suppression system	1150 m <sup>3</sup> /year	0 m <sup>3</sup> /year

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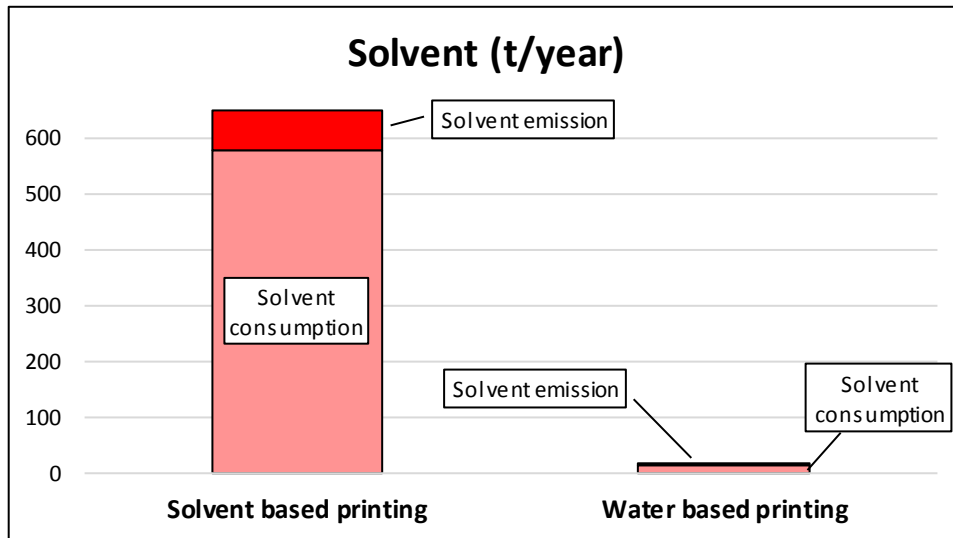
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### Consumptions

Solvent consumption decreased from 650 t/year to only 15 t/year, while keeping the production capacity and improving the performance of the graphic productions.

Another significant consequence of this technological step is the reduction of energy and matter. Indeed, given the fact that solvent distillation installations and emissions abatement are no longer necessary, we have an electric power saving for 400 MW/year and water to more than 1000 m<sup>3</sup>/year.

Annual consumptions		
Parameters	Solvent printing	Water based printing
Solvent consumption	650 t/year	15 t/ year (appraisal)
Electrical consumption of the abatement	290 MW	0 MW
Water consumption of the abatement	1160 m <sup>3</sup> /year	0 m <sup>3</sup> /year
Electrical consumption of solvent distiller	98 MW	0 MW

### Waste

The production of hazardous waste has been diminished almost to zero, with the elimination of some CERs and the radical reduction of others.

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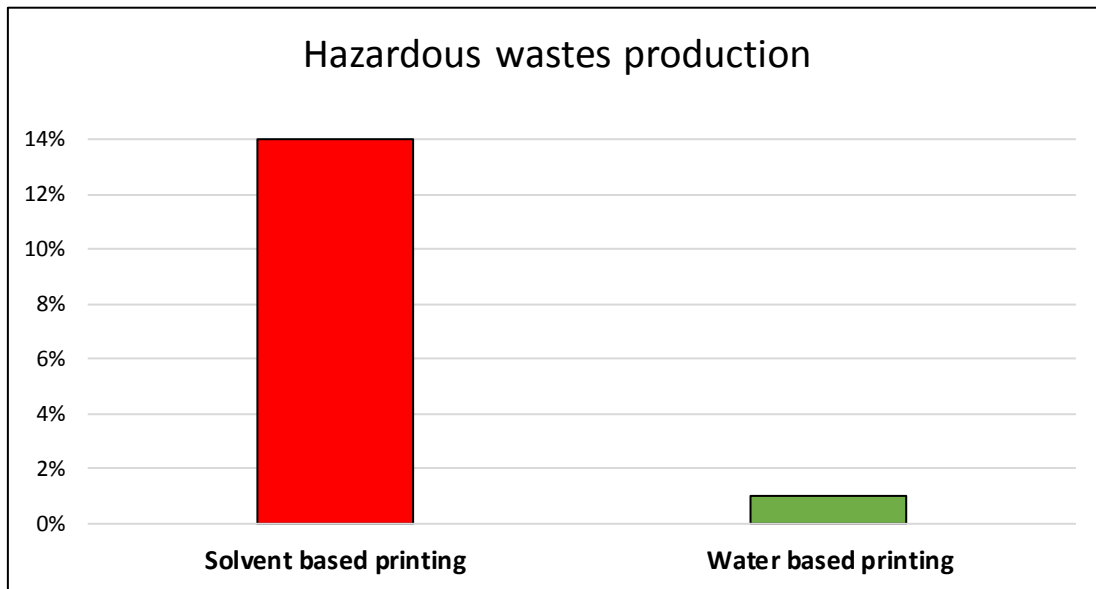
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Wastes	Solvent based printing (kg/year)	Water based printing (kg/year)
Hazardous	42.757	3.000
Not hazardous	304.590	300.000
<b>% Hazardous</b>	<b>14,0%</b>	<b>1,0%</b>



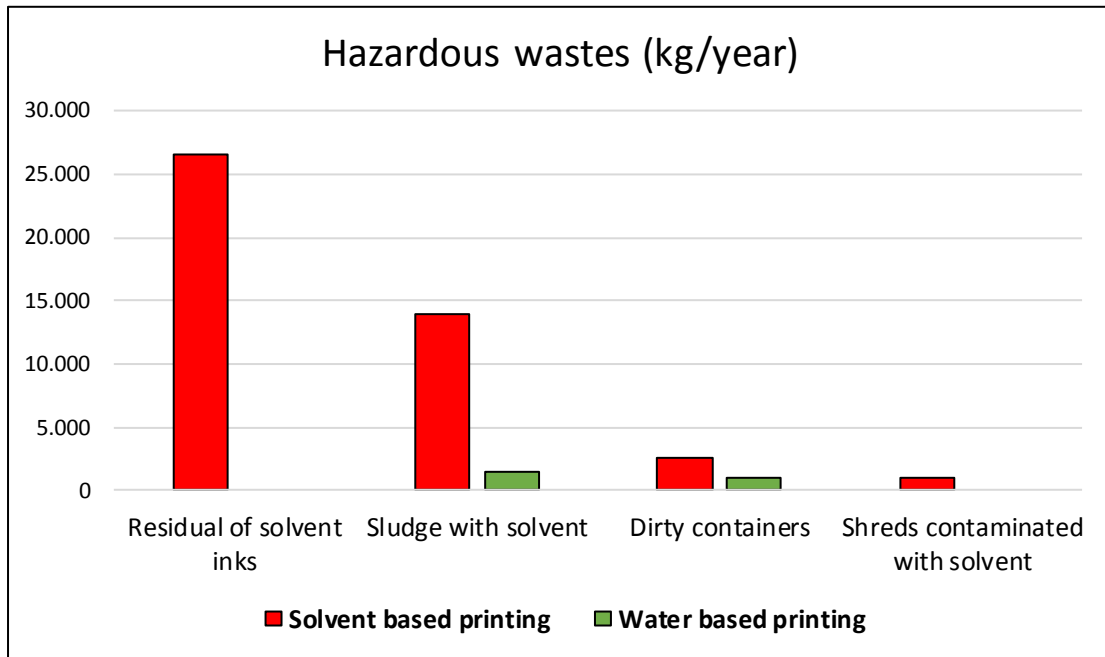
Dangerous wastes			
Code CER	Description	Solvent based printing (kg/year)	Water based printing (kg/year)
08 03 08	Residual of solvent inks	1.000	0
14 06 03	Sludge with solvent	26.500	0
15 01 10	Dirty containers	14.000	1.500
15 02 02	Shreds contaminated with solvent	2.500	1.000

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### 🌿 Simplification

The reduction of environmental impact is well represented by the transition to a new environmental license: with solvent based printing, the company was subjected to a type of permission reserved to the most polluting types of industries. With water based printing, instead, the company switched to a type of authorization intended only for environmentally friendly industries.

## HEALTH AND SAFETY FOR WORKERS, RISK OF ACCIDENTS

- 🌿 The nearly total suppression of solvents from the production cycle has involved a profound reduction of chemical risk to which workers were exposed before. Almost all the used products are classified as “not hazardous” and the exposure to VOC in the Printing Department has been reduced to zero.

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- Moreover the storage of tons of solvents and solvent based products has been deleted, breaking down the fire danger and the AtEx risk both in the plant and in the warehouses. The risk of accidental spillage of solvents into the environment is now practically null.
- The workers' health and safety risks and the risk of accidents with environmental impacts related to a distillation plant and abatement have been completely deleted.

## CONCLUSIONS

The shift to a different printing technology entailed a drastic reduction of our environmental impact and allowed us to raise our qualitative standards and our productive capacity.

The target of our company has always been to remain at the forefront of technology and constantly improve the quality of products offered to our customers.

Quality, respect for the environment, health and safety for workers are the values in which we strongly believe. Therefore, we aim to achieve the best satisfaction of our customers, by means of an even more careful and qualitative advanced offer, improvement both of the workplace for our employees and of the quality of life of local communities.

We believe that the defense and the respectful and sustainable management of the environment are at the same time moral duties and investments for the future: for this reason we commit ourselves to reduce more and more the impact of our activity on the surrounding environment. In order to do it in the most effectively way, we opt for a dynamic approach extremely oriented to the future, which leads us to carry out ambitious projects and long-term investments like this.

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