

RECP Best Practices Catalogue

*Homogenisation of the varnish and
optimisation of its use*

Developed within the framework of MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is
funded by the European Union

Best Practice - Homogenisation of the varnish and optimisation of its use

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| SECTOR: | Metal, electrical and motor vehicle parts |
| SUBSECTOR: | Manufacture of other fabricated metal products |
| PRODUCTS | Metal packaging, printing on metal, plastic bottles, tin cans, frustoconical pails, cylindrical boxes, rectangular bottles. |
| CATEGORY | Process control or modification |
| APPLICABILITY | Process |
| COMPANY SIZE | 120 |



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Description of the Problem (Base Scenario):

The varnish used on the metal packaging sheets is not homogeneous. This results in printing quality problems on the sheets.

The type of stirrer used to homogenise the varnish is not the right kind, and there are varnish losses during the transfer from the drums to the feed tray, as well as losses of solvents during changes in the production series.

The estimate of varnish loss: About 0.5 L of varnish per drum, an average of 2 drums a day is consumed, which is a loss of 1 litre of varnish/day.

For cleaning solvents, losses are 5 to 10 litres/turnover, 1 turnover/2 days, which is 150 turnovers per year x 10L = 1,500 litres/year

Description of the Solution

It is proposed as a solution to use another type of agitator (propeller 3 blades) diameter 20/25 cm and a reduced speed for ½ hour to prevent the creation of bubbles detrimental to the coating.

The drum should be shaken only before it is put into service, agitation during use (4 hours) is no longer necessary; the product will be stable during use.

Storage of drums near machines provide 3 drums permanently available: 1 in use, 1 in agitation and 1 in waiting

Provide a cover for the drum during agitation and during use to avoid evaporation of the solvent. Provide a tray with support for cleaning the agitator between each homogenisation operation.

Plan to close the feed tray as well.



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Economic Gain

Savings on varnish with each transfer
Savings on cleaning and on solvent; production turnovers are 5 to 10 L/turnover:
assuming 1 turnover/2 days = 150 turnovers x 10 L is 1,500 L/year
Savings of about 0.5 L of varnish per drum: 1 drum = 4 hours, so at least 2 drums
per day or 1 litre of varnish/day is 5.17 €/day -> € 1,568/year

Environmental Gain

Reduction of varnish and solvent waste of 300 litres for varnish and 1,500 litres
for solvents.
VOC reduction

Health and Safety Impact

Limitation of solvent fumes for staff



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| Investment & Financial Indicators | Low cost Agitator, according to the options € 1,000/€ 1,200 (Time for Return on Investment: 10 months to 1 year) |
| Suppliers | Imported |
| Other aspects | Gains on the quality of varnishing Stability of the homogenisation of the varnish throughout its use. Reliable traceability: use of the drums in chronological order. Quality gains on varnish coating with constant viscosity during use. |
| Implementation and New Indicator | Action carried out. New Indicators not yet established. |



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