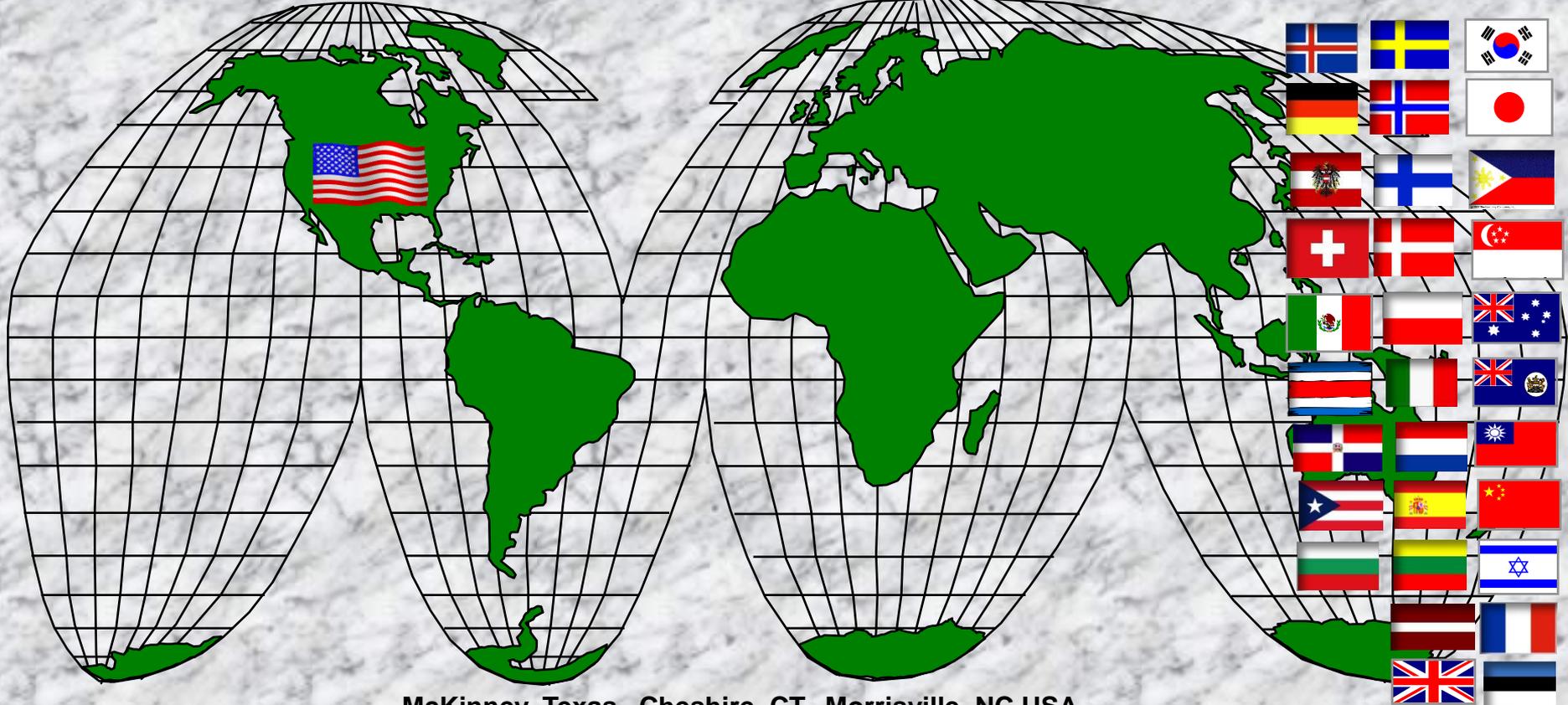
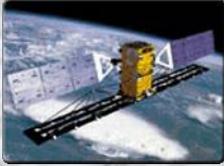


MICROCOAT TECHNOLOGIES



McKinney, Texas, Cheshire, CT, Morrisville, NC USA

<http://www.m-coat.com>



UV Cure Conformal Coatings
vs.
Solvent Based Coatings



MicroCoat Technologies

Environmental
Responsibility

&

Demonstrable Cost
Savings



THE 3 MAJOR FACTORS EFFECTING COSTS ARE

APPLICATION SPECIFIC COSTS

TANGIBLE COSTS

INTANGIBLE COSTS

APPLICATION SPECIFIC COSTS

- ◆ **Likely to Increase Product Performance, Durability, & User Safety**
- ◆ **Higher Productivity, as in WIP (Cycle Time)**
- ◆ **Regulatory Compliant Materials per OSHA, EPA, FDA**
- ◆ **Lower Energy Costs**

Tangible Costs

- ◆ **No Solvents and VOC (Volatile Organic Compounds) Treatment**
- ◆ **Less Downtime and Maintenance**
- ◆ **Lower Energy Costs**
- ◆ **Less Scrap**
- ◆ **Less Waste & Waste Disposal**
- ◆ **Lower Tooling & Fixturing Costs**
- ◆ **Lower Overhead**
- ◆ **May Lower Insurance Rate**
- ◆ **Lower Operating Costs**

Intangible Costs

Intangible Costs Can Be More Compelling Than Tangible Costs

Regulatory Compliant

- -OSHA (Health)
- -FDA (Safety)
- -EPA (Waste Disposal)
- -No Solvent Handling
- -May Improve Quality
- -Higher Capacity Utilization
- -A Process Not Achieved by Another Method

Maximizing a Plant's Real Estate

- Plant managers (our customers), restructure and reconfigure every square inch of the "real estate" under their care to increase throughput, output and quality, reducing labor and waste as much as possible in the process. Capital improvements focus not so much on expanding plant size as on wringing as much production as is mechanically and humanly possible from existing capacity.
- One 6-10 foot UV conveyor will replace ~100-500 sq. ft. of conventional ovens and save an enormous amount of energy dollars and real estate

SHORTENING CYCLE TIME

REDUCES

WIP (Work in Process)

Labor per Part

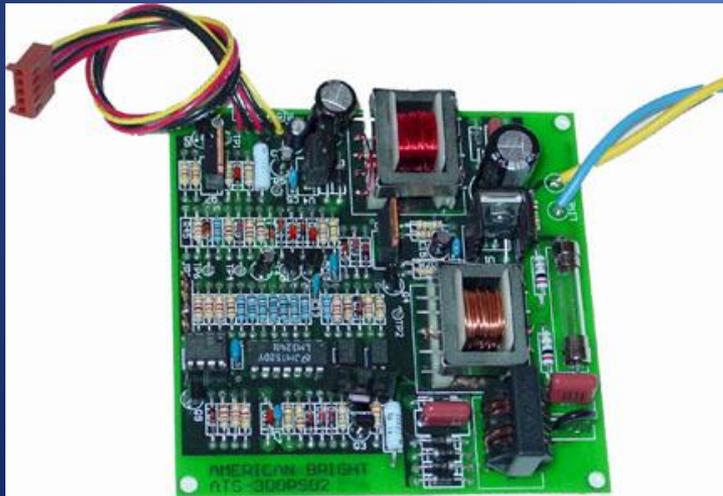
Overhead per Part

THE RESULT!

PRODUCTIVITY INCREASES

Conformal Coatings

UV, Dark Cure & Heat Cure



UV Cure Conformal Coatings

100% Solids

So, what does that mean

How is that better

And - why

Costs (Example only)

Solvent based coating Cost \$40/gallon

One gallon = 80% solids 20% solvent

You cost is now \$48.00/gallon HUH!

Remember, the 20% solvent goes up the stack not on the PCB

Cure time: 24 hours. WIP is now behind one full day

This process requires explosion proof lighting, fans, etc

Insurance costs are high

Remember slide 6?

Slide 6

- ◆ **No Solvents and VOC (Volatile Organic Compounds) Treatment**
- ◆ **Less Downtime and Maintenance**
- ◆ **Lower Energy Costs**
- ◆ **Less Scrap**
- ◆ **Less Waste & Waste Disposal**
- ◆ **Lower Tooling & Fixturing Costs**
- ◆ **Lower Overhead**
- ◆ **May Lower Insurance Rate**
- ◆ **Lower Operating Costs**

It is very possible that your \$40 cost/gallon is more like \$55-\$60+

UV cure coatings generally cure in 15-25 seconds

Coatings with a secondary cure – typically acrylated urethane compounds, cure in 15-20 seconds as well but the secondary cure, usually for coatings that will run under components, absorb moisture and cure in 12-24 hours.

But! The PCB's that have been UV cured can be handled immediately, tested, and even shipped while the secondary cure is taking place. NO material on the board will remain wet or uncured

UV materials cost

- UV coatings and adhesives generally cost more than solvent based coatings – not because we know that we can save you thousands of dollars each year but because the chemistry is much more expensive

The Complete UV/Visible Light Adhesive Assembly Package

- ◆ Glob Tops and Dams for COB
- ◆ Wire Tacking
- ◆ Peelable & Water Soluble Masks
- ◆ Potting & Encapsulating
- ◆ Conformal Coatings

- END