



**Presents**

***NitrothermSpray Technology***

**Best in Class Spray Technology**

*Reduced Cycle Time, Reduced Cost , Reduced  
VOC's*

*Better Finishes, More Profit for You, ETL listed*

# NitrothermSpray Technology

## Technology and Process Result in the Following:

- Consistent Painting Conditions
- Savings in Liquid Materials
- Savings in Spray Labor
- Savings in Sanding and Buffing Labor and Materials
- Higher Quality Finish
- Higher Transfer Efficiency
- Less VOC's in Environment
- More Profits for your Business



# NitrothermSpray Technology

Patented By Eurosider  
In 2004. Eurosider is a  
World Leader in the  
Production of Nitrogen  
and its Uses.

International Patent # 1,332,784  
US Patent # 6,821,315 B2

N2Spray Solutions is the  
Only Authorized Distributor  
Of Eurosider Products in the  
United States.



# Properties of Nitrogen

- The air we breathe and compress is 78% nitrogen, 21% oxygen, and 1% trace gases.
- Spray painting is currently done with 78% nitrogen using compressed air
- Issues associated with compressed air painting result from the 22% non-nitrogen elements and static electricity.
- Nitrogen is anhydrous which means it is completely without moisture, dew point is -76 degrees F
- Nitrogen is nearly inert and reacts only with oxygen and sulphur.

# Problems with Compressed Air

- When atmosphere air is compressed, **heat, moisture, and static electricity** are produced which cause problems in spray painting:
- **Heat** makes the non-nitrogen molecules expand which, depending on the temperature, causes a less dense coverage or inconsistent results. **Uncontrollable Variable**
- **Moisture** reacts directly with the paint, resulting in several known paint problems. **Uncontrollable Variable**
- **Static electricity** attracts dust and all unwanted objects to the freshly painted surface. It can attract from more than three feet away. **Uncontrollable Variable**

# How Static Electricity Is Created

- Static electricity is a result of friction.
- Friction is present in every aspect of the finishing process.
- Compressed Air: Compression of the Air flowing through the piping, and forcing air through the paint nozzle all intensify the static electricity present in the delivery of paint.
- Preparing the object: Sanding, tacking, and the properties of the object itself.
- Plastic naturally has negative properties

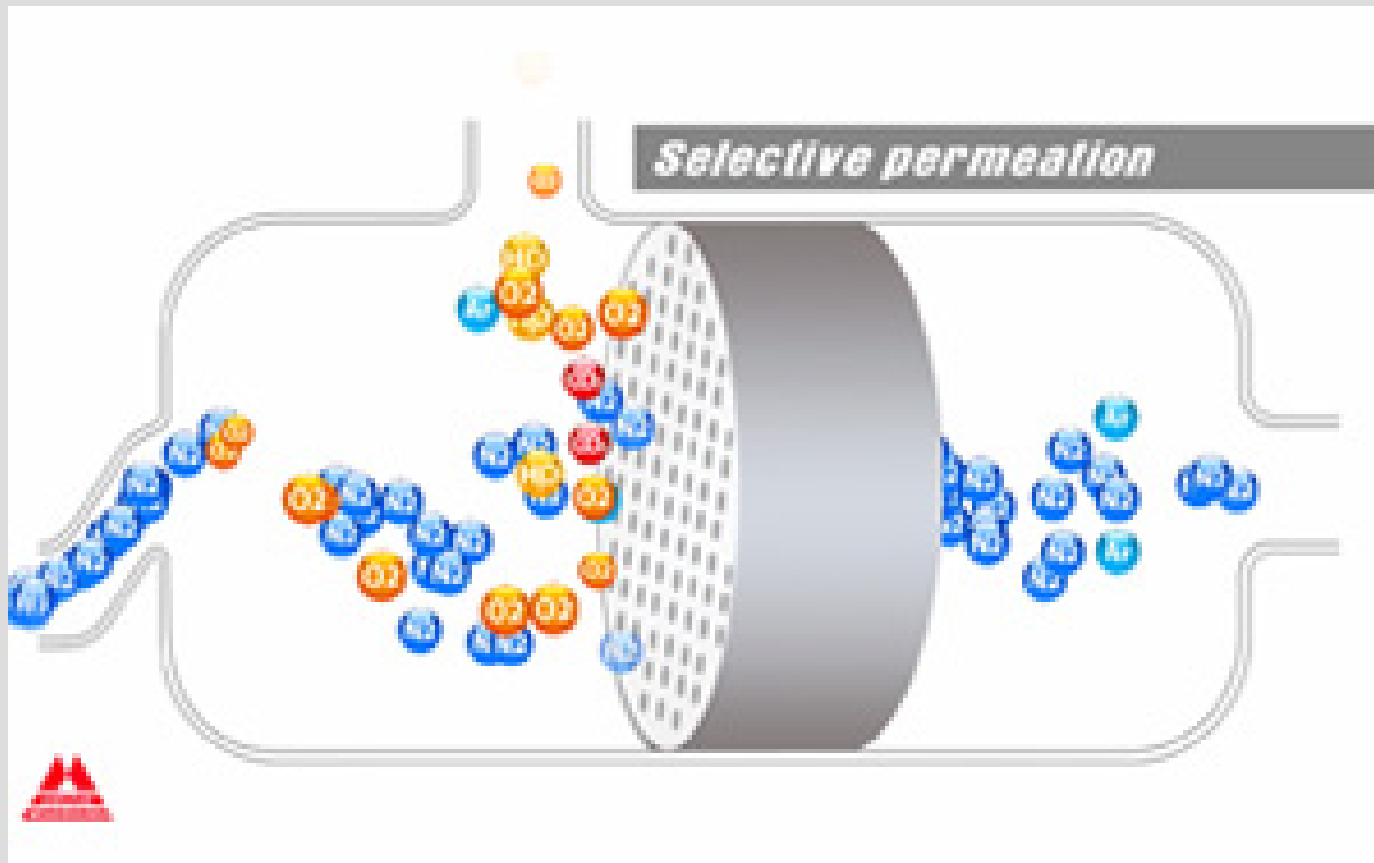
# Polarity's Impact to the Coating Process.

- Similar polarities repel - plus - = repel  
- plus + = attract
- Compressed air negative
- Object surface negative
- Result is overspray trying to find neutral or positive polarity which is usually the floor or wall of the spray booth. Air flow of the spray booth forces overspray in the direction of the exhaust and sometimes back to object being sprayed.
- Ionization in the NitrothermSpray generator and Top Spray results in increased transfer efficiency, more material is attracted to the object being sprayed

# Why Nitrogen

- Nitrogen is abundant, inert, anhydrous and is already available in the facility thru the air compressor.
- When Nitrogen is de ionized no ozone's are produced because oxygen is not present.
- NTS Technology was developed to separate Nitrogen from compressed air.
- Nitrogen is non-flammable.
- Nitrogen molecules are larger than Oxygen.
- Nitrogen can be heated.
- Nitrogen can be ionized which increases transfer efficiency

# NitrothermSpray Permeation Membrane



99.5% Pure Nitrogen

# Recap of NitrothermSpray

- By elimination of static electricity and total control of the polarity allows greater transfer efficiency of paint, less overspray, and the paint is more uniformly delivered resulting in a higher quality finish
- Because nitrogen is anhydrous all surface moisture is eliminated resulting in fewer finish problems.
- Because Nitrogen is inert, it can be heated, viscosity can be changed thru heat instead of thru solvents resulting in less VOC's into the atmosphere.
- **NitrothermSpray** is the “**Greenest**” Most Efficient Method for the Application of Coatings.

# Traditional Air Spray



# Polarity Control



# Heated Nitrogen



# Why not Polarize Compressed Air?

- Results in Ozone released in atmosphere
- $O_3$  = Ozone is a regulated industrial pollutant.
- Ozone (trioxygen)  $O_3$  is a triatomic molecule consisting of 3 oxygen atoms.
- Ground level ozone is an air pollutant with harmful effects on the respiratory systems of animals and humans. It can also damage crops, trees and other vegetation.
- Ozone regulatory level - .075 ppm

# How is NitrothermSpray Greener?

- Results in up to a 30% reduction in “Volatile Organic Compounds” via greater transfer efficiency.
- Allows for reduction of regulated solvents whose standards are becoming more stringent.
- Results in increased production with significant improvements to the environmental Impact.
- Results in fewer booth exhaust filters to dispose of into the environment.

# What Changes With NitrothermSpray?

- Greater transfer efficiency= fewer coats for the same dry mils.
- Reduction of solvents with wet on wet applications = fewer trips around the object.
- Less solvents = reduced flash time, less shrinkage and die back.
- Paint is flatter resulting in greater definition of image and higher quality.
- Less contamination = Less sanding and buffing.
- Less material usage with better coverage.
- Less exhaust filter loading.
- Reduced time in booth lowers energy costs
- Less VOC's produced = **Green**

# Benchmarking For Your Business

- Process improvement critical for today's economic climate
- Survey of current equipment and process
- Analysis of material usage and purchases
- Production flow analysis
- Demonstration of the NitrothermSpray technology to show results
- Requires 110 Outlet with a 20 amp circuit and 125psi air pressure with-in 50ft of the booth.

# Configuration of the NitrothermSpray System



# Cost of NitrothermSpray

- How many Painters @ one time = Generator size
- How many Spray areas = # of Top Sprays
- Quote is custom for each facility based on configuration needs.

# Return on Investment

- Time saved
- Material saved
- Increased Quality
- Reduction of Buffing
- Reduced filter usage
- Less VOC'S
- Lowers spray booth operating costs
- ROI achieved over a short period of time