

## **Laboratory Services Profile**

February 2006

- Staff:** 8 chemists & technicians; 2 laboratory managers
- Equipment:** FTIR  
7 GCs [5 packed & 2 capillary]  
3 Ovens for non-volatiles testing  
2 HR73 Moisture Analyzers (for non-volatiles)  
2 HR83 Moisture Analyzers (for non-volatiles)  
Accumet pH meter  
Surface Tensiomat 21  
Genesys 10 UV Spectrometer  
Turbidimeter  
Mettler & Sartorius scales with 0.0001 g accuracy  
Brookfield viscometers, RVT & LVT  
Ford & Zahn viscometer cups  
APHA / Pt-Co & Gardner color equipment  
3 Karl Fischer / Aquatesters  
COD Reactor  
Rapid Flashpoint Tester  
2 Distillation Columns  
Refractometer  
DE45 Density Meter  
DL50 Automated Titrator  
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UV-Visible Spectrophotometer  
& a wide array of wet lab capabilities
- Records:** All raw materials, pre-mixed solvent blends, in-process tank blends, and finished goods are assigned unique & traceable lot numbers. Incoming, in-process, & in-line inspection records can be held up to 5 years.
- Resources:** A Refinish raw materials reference library has been established as well as strong technical support from the major isocyanate manufacturers.
- Methods:** All customer requirements and test methods are controlled & referenced for chemists in a customer procedure manual.
- Formula Control:** Customer formulas are controlled in a protected database. Bench manuals and blend status sheets do not display formulas in order to maintain intellectual property confidentiality.

## ***General Testing Guidelines for Refinish / OEM Products***

### **Inspection of Solvents includes but is not limited to:**

Appearance	Specific Gravity	Distillation range
Odor	GC purity	Verification of Mfr C/A
Color	% Water	

### **Inspection of Isocyanate Resins includes but is not limited to:**

Appearance	Specific Gravity	% NCO
Color	% Solids	Verification of Mfr C/A

### **In-process Inspection of Isocyanate Blends includes but is not limited to:**

Appearance	% Solids
Color	% NCO
Specific Gravity	Potlife & gel testing (applicable for blends containing tin complexes)

### **In-line Inspection of Finished Products includes but is not limited to:**

Overall Appearance	Bill of Material Verification
Label Verification	Lot Traceability
Weight Verification	% Humidity (applicable for moisture sensitive materials)

### **Additional Testing:**

All urethane grade solvents that are held in our dedicated, nitrogen purged tanks are analyzed each week for GC purity and water content.

### **Specification Controls:**

Specifications & inspection packets referred to as Production Packets are generated for every packaging order. These packets include but are not limited to bill of materials, labeling diagrams, special handling & safety instructions, palletization requirements, weight & appearance specifications, and required inspection forms.

### **Sample retention:**

Product retains typically held for 2 years if not customer defined.

### **Label Controls:**

Labels are controlled and issued by QA personnel based on EMCO's Production Packet requirements.

Additional services such as reverse engineering & pilots may be available.