

## Accelerated Chemical and Thermal Stability Studies of Refrigerant/Compressor Oil Systems

IsleChem now offers accelerated heat aging experiments that measures chemical degradation of both the lubricant and refrigerant. In combination with metallic coupons, measurement of corrosion products can also be obtained.

This accelerated testing supports the development and implementation of modern refrigerant and lubricating oils used in compressor systems.

Methodology practiced is in accordance with American Society of Heating, Refrigerating and Air-Conditioning Engineers:

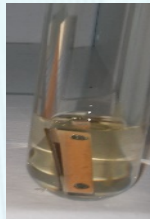
ANSI/ASHRAE Standard 97-2007, ASHRAE STANDARD

*Sealed Glass Tube Method to Test the Chemical Stability of Materials for Use within Refrigerant Systems*

### Industries served

Manufacturing of:

- ▶ Refrigerants
- ▶ Lubricating oil
- ▶ Lubricating oil additives
- ▶ Compressors

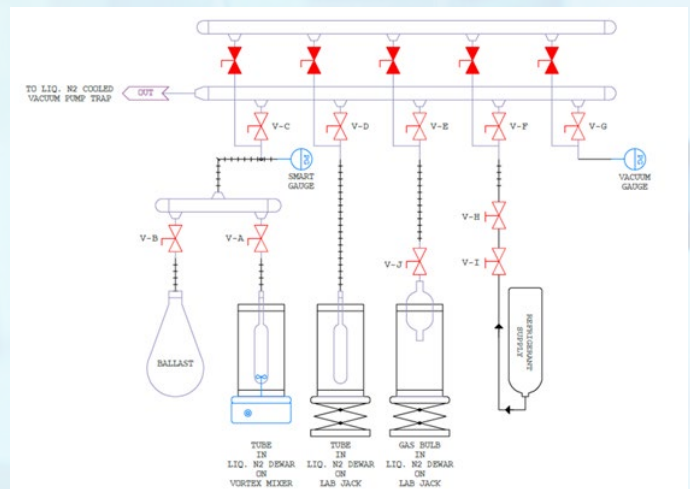


### Measurements performed include:

- ▶ Total Acidity Number (TAN) by ASTM D974
- ▶ Refrigerant composition by GC
- ▶ Quantification of oil degradation products by GC-MS
- ▶ Examination of corrosive anions by IC
- ▶ Quantification of additives
- ▶ Moisture content
- ▶ Trace wear metals by ICP
- ▶ Photographic documentation of color change

### Key variables controlled

- ▶ Aging temperature and duration
- ▶ Moisture and air content
- ▶ Refrigerant/oil ratio
- ▶ Exposure to metallic surface



*Vacuum manifold diagram for delivery of refrigerant/oil mixtures into a sealed tube*



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