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Refrigerant prices soar as worldwide stock depletes

Michael Labacher

AS THE refrigerant market grapples with limited supply of many refrigerants and significantly higher prices, many fluorochemical producers are struggling to build their inventories in preparation for the northern hemisphere's peak season.

We in Southern Africa find ourselves between a rock and a hard place, as prices are expected to rise yet again as demand exceeds supply.

Below are some of the key issues and specific challenges facing the industry. The below summary is a compilation of recent news articles published by many of the world's largest and reputable fluorochemical producers.

COLD FACT: Refrigerant prices are expected to rise further this year as availability continues to be an issue.

1. **Availability and costs of primary raw material**
   - The costs of Fluorspar and Sulphur (the two components used to make Hydrogen Fluoride, the source of Fluorine for all Fluorochemicals) have increased dramatically. Fluorspar mine capacities have decreased in recent years and China, a significant source, has put trade restrictions on exports.
   - Chlorocarbon global capacities have decreased by around 50% in recent years and costs have risen sharply as availability has become tight. Chlorocarbons are reacted with Hydrogen Fluoride to make Hydrofluorocarbons (HFCs).

     As the raw materials to make fluorocarbons have been in short supply and increasing in cost, the prices of Fluorochemicals have as a consequence risen sharply.
2. **Growing demand for HFCs**
   - Domestic demand for HFCs in large growing economies (especially China) continues to rise.
   - Legislation banning or restricting the use of HCFCs has further increased the demand for HFCs.
   - The result in Fluorochemicals plant utilisation rates have been pushed to record highs globally, including China.
   - As the global economy recovers, capacity utilisation ratios are very high and will continue to be so in 2011.
3. **Specific situation for R22**
   - Escalation of Fluorspar and Hydrofluoric acid costs due to restrictions being imposed by Chinese Government on mining and the export of Fluorspar.
   - Power shortage in China impacting production negatively.
   - Slow global recovery, persisting depressed demand for caustic forcing global chlorine-alkali plants to cut down their capacities, resulting in reduced chlorine availability leading to shortage of chloroform (raw material for R22.)

   Other drivers of current cost increase in R22
   - Very buoyant PTFE demand consuming large quantity of global R22 production.
   - Freight rate increases on most sectors with uptrend in crude price.
4. **Specific situation for R134a**
   - From the start of 2010, global inventories and supply of R134a were very tight with market prices more than doubling and close to tripling due to increase in raw materials costs and high capacity utilisations.
   - The industry has struggled to rebuild inventories in the "low-season".
   - The very high capacity utilisation is expected to continue throughout 2011
5. **Specific situation of R125 (key component of many blends e.g. R507, R404A, R407C, R410A)**
   - From the start of 2010, global inventories of R125 were low and supply remained very tight throughout the year. Market prices have already more than doubled and look likely to more than triple due to lack of availability.
   - Global market demand has grown dramatically especially in Asia, further pushes by Chinese government stimulus packages and energy programs resulting in greater domestic use of blend refrigerants containing R125 e.g. R410a.
   - Demand for HFCs has grown dramatically in Europe as the cooling industry adapts to life after HCFCs.
   - Recent operational issues faced by a number of R125 suppliers have created further market tightness.
   - The critically high capacity utilisation and high costs are expected to continue throughout 2011.

A-Gas in all its history has never seen pricing like this, nor have we faced shortages at this level. Securing supply of premium refrigerants for our valued customers remains the top priority for A-Gas.

Furthermore we would also like to warn the industry to be vigilant when purchasing refrigerant so as to ensure only quality refrigerants are used; this can be done by requesting suppliers to issue Specification Sheets or a Certificate of Analysis with every batch of refrigerant supplied.

We have seen a significant increase in substandard and inferior product (e.g. blends not meeting specification and underfilling to name a few!) being traded; in some cases product is being supplied in packaging which suggests all is in order (labelling and packaging look fine) only to find the product contents are something entirely different, in some cases hazardous material!

We hope that this article helps your understanding of the volatile situation we find ourselves in as an industry.

System problems, doubt your refrigerant? Test your gas!

A-GAS South Africa has expanded its laboratory services which now include a Refrigerant Analysis Service (RAS).

This has come about following ongoing requests from the market place to test refrigerants given the increase in non conforming material entering our market. "We have noted a significant increase in suspect material primarily being supplied in disposables, many of which besides having suspicious contents do not comply with local legislation and are illegal forms of packaging!" says Michael Labacher, Sales Manager of A-Gas South Africa.

"Our laboratory's primary function is to ensure the ongoing supply of superior refrigerants to the Southern African markets," comments Paul van Oudtshoorn, Technical Manager of A-Gas South Africa. "All test methods used by A-Gas are compliant methods in line with stringent quality control procedures as specified in our ISO 9001 and 14001 management systems. These procedures are also compliant with AHRI 700 (Air conditioning, Heating and Refrigeration Institute Standard)."

PURITY: A-Gas tests refrigerants.

Some of the tests performed at our laboratory include, refrigerant identification, purity, moisture, acidity, residue and impurity levels.

The laboratory also complements the recent launch of our Refrigerant Recovery, Recycling and Reclamation Program (RRRP) which has been designed to help protect the environment by reducing the illegal discharge of refrigerant into the atmosphere. A-Gas is now able to supply **RECOVERY** and **PUMP DOWN** cylinders which can be used on site during maintenance and repair work. Contaminated refrigerant can be returned to A-Gas where it will be treated in the environmentally correct manner.

RRRP is a proactive environmental tool that will revolutionise the way refrigerants are handled in the Southern African market.

Our Analytical/Research and Development Chemist will provide the hands-on analysis, supported by our well established laboratories in both the UK and Australia.

"The lab is currently set up to perform the tests as per the AHRI 700 certification program and will also be used for the R&D of new products," concludes Mr van Oudtshoorn.