

# Gas Delivery...the Truth!

## Do you get what you pay for??

Dewars are constantly venting off Nitrogen resulting in their release valves degrading over time. Therefore Dewars which ordinarily hold 4,500 SCF of N<sub>2</sub>, may hold less when they arrive at a customer and can vent off at different rates. A brand new dewar can take around five days to vent completely.

## What you really get!!

As there are no flow meters for liquid Nitrogen or tank gauges for bulk supply, the weight of the tanker when filled at the plant determines the number of gallons you receive and are charged for.

An estimate based on tank inches is made informing how much goes to one customer and the next. The result being you get 90-95% of what you are charged for into their bulk tank. Then the tank evaporation begins.

Due to strict guidelines regarding pressure allowed in tanker trucks, it starts releasing Nitrogen into the air as soon as it's filled. 3-5% of the truck's volume is released on its way to delivery.

## The Truth about bulk tanks!!

As Nitrogen boils at -196°C, the N<sub>2</sub> in a bulk liquid tank is always boiling. The standard bulk tank has a relief valve, which releases evaporated liquid Nitrogen when the pressure builds to a certain point. Eventually, all of the liquid Nitrogen will boil, vaporize and release into the atmosphere. The pressure builds up from the surface of the liquid.

Since the Nitrogen is boiling at such a low temperature, it has very little effect on the process if the tank is located in an ambient temperature. The reality is that a bulk cryogenic tank boils off at a rate of 2% of the volume of the tank (not the volume of liquid in the tank) per day.

This means that if a tank is a 1,500 gallon tank, 30 gallons per day or 3,000 SCF will vent into the atmosphere every 24 hours. This figure will be the same if the tank is full or nearly empty.

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## **A great deal for whom??**

Bulk tanks can cost the gas company £25,000 or higher. The company receiving the tank has to put in a pad 7-9 feet thick of concrete depending on the state to support the heavy weight of the tank and the liquid Nitrogen.

Very few customers own their own bulk tanks. With a new application or factory about to be built, the cost of the generator can be made more competitive by the fact that the customer will have to spend £15,000 to £25,000 to put in the pad for the bulk system.

To that end, the gas company charges the customer a rental charge for the tank as well as a delivery charge for the liquid. In some states there are environmental charges as well for travelling over the road with liquid Nitrogen.

## **Gas company contracts!!**

If like most gas company contracts, it goes for 5 years before it automatically renews; unless you notify them at least a year in advance of the end of the contract. It probably says that if you change your gas needs in a way that requires a hardware change on their part, the contract automatically starts for another 5 years. It says that, if the gas company decides to raise your cost per gallon of liquid or your CCF (hundred cubic feet) of gas, you have the right to go out for bid..

However, if you get a better price, the gas company has the option to meet that price. In doing so the contract then automatically begins again for another 5 years. You are driven to sign such a contract because every gas company forces it in one form or another. If you do not sign, you pay an outrageous cost per CCF. It appears that it gives you control of your cost but it only indentures you to the gas company.

## **The Win-Win Situation!!**

No matter what happens, this process will save you money.

Once they know you have discussed gas generation the Bulk Gas Company, which may end up just venting the Nitrogen at their plant if they lose your business anyway, may drop their prices to an irresistible level.

However, this would only ever be temporary, so why not provide yourself with free nitrogen in the future than find yourself trapped in another contract!!