An investment that will secure your profit
Who needs a vaporizer? – and why is it important?

"Vaporizers are only for cold climates"

An often-heard statement and common knowledge since, well, forever. But what if we told you that it's closer to common nonsense?

According to belief, a mild climate with relatively stable temperatures makes vaporizers unnecessary as it provides enough energy to keep the natural vaporization going inside an LPG tank. And yes, you can get by without a vaporizer. So why do we still claim the myth to be false? Simply because a vaporizer is the ultimate cost-saving device. Now who doesn’t need that?
boiling. A high ambient temperature increases the rate of vaporization and thereby the outlet pressure. The higher the pressure, the more LPG you can draw from the tank.

If, on the other hand, the ambient temperature is too low, the system pressure drops because of a lack of natural vaporization, in which case you may not be able to draw as much LPG as you need to run your equipment.

**Tank size and liquid level play a crucial role**

The energy (i.e. heat) needed for natural vaporization is transferred from the surroundings through the tank walls to the liquid inside. The surface where the liquid LPG is in contact with the tank walls is also known as the heat transfer area. This area becomes smaller the less LPG is in the tank.

As the liquid level decreases, the tank temperature - and with it the outlet pressure - drops until reaching a point where the tank is too cold for any natural vaporization to take place. The lower limit can be up to 30 percent, which means that about one third of an LPG tank’s capacity is actually useless, but you still pay for it.

**Vaporization by means of a vaporizer**

Whereas natural vaporization occurs within the tank, a vaporizer moves that process outside the tank. That means that instead of extracting vapor, you extract liquid LPG.

As explained above, vaporization is necessary in order for you to draw LPG from your tank. The question now is whether you can rely on natural vaporization or you need a vaporizer.
If you rely on natural vaporization, there is only one way to increase capacity: To install a bigger tank or add more tanks. A vaporizer lets you draw as much LPG as you need from the tank.

As mentioned before, natural vaporization causes pressure drops and reduced capacity. The stable pressure provided by a vaporizer allows you to adjust your burners more accurately while avoiding the risk of your equipment unexpectedly shutting down or producing less energy than required.

No “useless” tank capacity means fewer drops and larger volume per drop to the benefit of both gas retailers and consumers. As any transfer of gas from one vessel to another constitutes a potential risk, it’s good for safety too. Add to that the environmental bonus of fewer emissions during transfer and we certainly have a winner.

Ok, back to chemistry class for a second. When mixed with propane, butane reduces the natural vaporization rate and with it the tank outlet pressure. That’s because butane is less volatile than propane and boils at -0.5°C whereas propane boils at -42°C. A vaporizer makes it easier to use a mixture of butane/propane, or pure butane, and both are cheaper than pure propane.
5 No accumulation of oil and heavy ends in the tank

When drawing liquid LPG from the tank into the vaporizer, any impurities in the gas are caught by a filter in the pipeline instead of being left behind as residue, which accumulates and takes up space, and reduces vaporizing capacity. This renders potentially dangerous tank draining procedures unnecessary.

6 Higher capacity (kg LPG/h) when using underground tanks

Safety concerns and local regulations make the use of underground tanks widespread in certain areas, and from a safety perspective they are a very good choice. But since an underground tank can’t absorb as much heat from its surroundings as its above-ground counterparts, its capacity is much lower when relying on natural vaporization.

7 Increased tank lifetime

Natural vaporization makes the tank surface cold and covered in dew; the perfect conditions for algae and rust. A vaporizer can help reduce maintenance costs and extend the lifetime of the tank.

8 Savings on pipe installations

Placing the vaporizer close to where combustion takes place lets you have liquid pipelines almost all the way. And as they can be designed with a smaller diameter, they cost less. Even vapor pipelines can be downsized due to more stable pressure.
How to know if your tank needs a vaporizer?

When estimating whether your business would in fact benefit from having a vaporizer installed, the decision is based on a worst case scenario estimate. In other words, we estimate the natural vapour ability of your equipment at the least favourable conditions to ensure that your production will be running no matter what happens, i.e. the lowest temperature your tank will reach and the maximum quantity you will need to draw from your tank and therefore the minimum level of LPG in the tank.

Please contact KC ProSupply if you think that a vaporizer may be just what your business needs in order to reach its full potential. The following ‘Data detection scheme’ is used in the estimate of your business’ needs by filling out the grey spaces.

Learn more

For further information on vaporizers, please call your nearest KC ProSupply office:

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We will be pleased to guide you in your decision.
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