This article is written by a retired Industrial Chemist and was posted on Caravanners Forum .

Sodium percarbonate is also known as Sodium Carbonate Peroxide (PCS) which is probably a better general description and its chemical name is Sodium Carbonate Peroxyhydrate.

Its chemical formula is (Na2CO3)2(H2O2)3and as you can see there is a fair bit of oxygen there. Pure sodium percarbonate contains about 13% oxygen.

It is the product used in all those adverts you see for various products supposedly “oxygenated” and have that miraculous “oxi” or “oxy” action which includes those washing powders we put into our washing machines and where applicable into the septic systems.

The misunderstanding about PCS is the fact it is promoted as a bleach even if it is an oxygenating bleach.

We have all been brought up to consider bleach as evil in some regards. Unfortunately, this “bad bleach” is chlorine based like the stuff we throw in swimming pools to kill the bad bugs and if introduced into septics, it kills the good bugs. Formaldehyde which is contained in some of the chemicals for toilet casettes is also in this category.

So the problem here is the general reaction by those not knowledgeable in the difference, see the products containing PCS as a bleach meaning it is bad which is the opposite to the facts.

Just to clarify to some who may have seen other names for oxygenating bleaches, there are 3 types of oxygen bleaches generally available - hydrogen peroxide, sodium percarbonate (which we shall continue to abbreviate as PCS) and sodium perborate.

If we understand how PCS works, we can see why they are not at all harmful to septics.

Those familiar with common chemical compounds will see that PCS essentially contains sodium carbonate and hydrogen peroxide stuck together. It is made by treating natural soda ash with hydrogen peroxide and the oxygen is absorbed while remaining a free flowing solid.

Upon dissolving in water, it breaks back down into natural soda ash after the oxygen is released. The oxygen is used up in your toilet cassette breaking down the stuff that is in there, and you are then left with the soda ash which can do no harm to any septic.

Now let’s turn the argument around from why is PCS not harmful to septics to what can there be to harm a septic system.

When PCS is broken down we have sodium carbonate which has a higher than neutral pH. Septic systems will fail at lower pH and require higher levels to stay efficient. The septics

that smell usually have an acidity problem which is killing off the bugs. A means of correcting this is to raise the pH by the addition of lime. Sodium carbonate has a similar effect, however the comparatively minute amount we are putting into a septic will really have no effect, but if it does it will be positive.

In fact it is recommended that bicarbonate of soda (sodium bicarbonate) is used as a cleaner for septics. Sodium carbonate (the left-over from PCS) has the same chemical effects as Bicarb so that can not harm the septic.

The usefulness of PCS in our use is the generation of oxygen. The basic septics are anaerobic and this could be one of the reasons for the misconceptions about using PCS products with septics if there is an assumption that the oxygen will ruin a septic.

This argument also doesn't stand up to scrutiny. Firstly, we are using a teaspoonful per day which let's face it is bugger all. At that rate, all the oxygen will be used up trying to cope with the stuff in the toilet, so by the time we dispose of it there will be no free oxygen and even if there was, there would be nowhere near enough to adversely affect a septic.

Secondly, the same would apply to all those "Oxy" washing powders and cleaners (all PCS) which are all OK for septics and if anything, would deliver more free oxygen than our cassette or black water tank.

Thirdly, although septics are an anaerobic system, they are unaffected by the introduction of a little oxygen. Aerobic systems require the introduction of oxygen. Anaerobic systems do not require oxygen and work best without it. This does not mean that a little oxygen will kill it.

So if anybody with a septic believes that the PCS products are bad, they will need to stop using most of the modern day "safe for septics" PCS bleaches, cleaners, dishwasher powders, washing powders etc.

By all means use the generic nappy treatment products if they say they are septic safe on the labels.

Where can there be a problem with these products? Only where there are other compounds in there which are not septic friendly so it is important to read the label to make sure the one you use is OK for septics.

Because the oxygen is released as soon as it is dissolved in water, I would suggest a teaspoon of the powder per day directly into the toilet. It will release the oxygen a little more slowly.

Keep in mind it will be absolutely useless if you only pee in the toilet - you will need to use something else.

By the way, do you know why they are called septics? Simply, because they are septic. They

are full of Eschericia coli (e-coli lives within our large intestines in a symbiotic relationship with us as it is a source of vitamin K). So, anaerobic systems are "septic" (meaning contaminated with microbes) and must be isolated from surface water and well aquifers and is a reason you can not locate your septic trench near a stream or underground water supply.

Also from that lot of stuff, re the Thetford "Green" product:

.....
That product does not say on the label it is safe for septics.
That product is not safe for septics.
That product contains Bronopol
Bronopol breaks down into formaldehyde
Formaldehyde kills septic tanks
Formaldehyde based products are not safe
You are using an unsafe product
You should be using a product safe for septics such as the Coles or Woolies generic nappy soaks or any other nappy soak which says on the label that it is safe for septics.

Frans H

NappiSan under the Homebrand products is now called Laundry Booster .