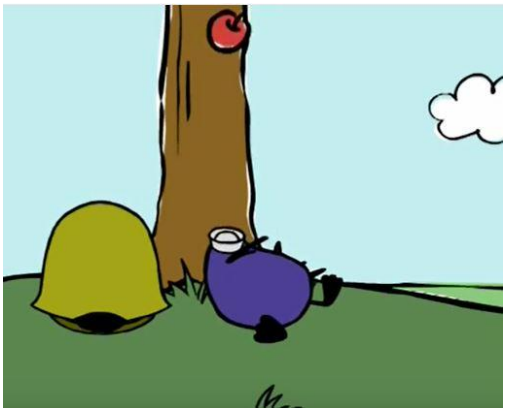
Comparing Apples to Pine-Apples
or the Great Sorb Debate



The story starts out with Quack the duck sleeping under an Apple tree when he gets conked on the head by an Apple. "Ouch! I am going to sleep somewhere there are no Apples"

So Quack wonders over to a nice shaded Pine Tree

And Quack Discovers Pine-Apples!

This is a children's cartoon and is meant to be funny. But when a diving group puts together a study on comparison of Sofnolime 797 vs Spherasorb, the basis of the study should not be the children's cartoon logic of comparing Apples to Pine-Apples.

The study is not wrong, it is just misleading and I think is purposely misleading in favor of one brand of product verse another. The product is Molecular Products who manufacture Sofnolime 797 (and many other variations), to Intersurgical which produces Spherasorb, Intersorb, as well as many other variations as well.

Facts first: It is true that you cannot get the same results from Spherasorb as you can get from Sofnolime 797. Just as you cannot get the same results if you were to substitute Molecular Products Sofnolime CD with Molecular Products Sofnolime 797. They are both Diving Grade Soda Lime products, but they are different shapes and sizes. Just as Sofnolime 797 is different from Spherasorb.

Spherasorb is a "Sphere" of approximate dimension of 2.5 - 5 mm . It is designed as a diving grade Soda Lime product. I will not debate the chemical similarity to that of the competing company, both from UK, see the manufactures websites and study the technical data sheets yourself.

http://www.divelong.com/files/technical-data-spherasorb.pdf

Sofnolime 797 is an 8-12 mesh size of a 1.0mm to 2.5mm extrudate with a triangular cross-section

http://www.molecularproducts.com/us/products/diving

Intersorb is an 8-12 mesh size of 2 mm cylindrical granules. It is well within and exceeds some of the NATO specifications for diving grade sorb as compared with competitor Sofnolime.

http://www.divelong.com/files/test-data1.pdf

It is common knowledge in the rebreather community that there are at least three common grades of Diving Sorb: 4-8, 6-12, 8-12 with 4-8 and 8-12 being the most universally used. I have used a half dozen companies that manufacture Co2 absorbent chemical for diving, in more than a dozen different types of rebreathers from SCR to CCR. A rebreather manufacture may or may not specify a particular brand, but more likely will state that a certain Mesh Size or Grade of sorb be used.

All Co2 absorbent manufactures will list the amount of Co2 that the product can absorb based on kg of weight, or liters of Co2 to unit of sorb. It is the shape/size of a particle that contributes to the quantity of chemical sorb that will fit into a rebreather scrubber.

Now imagine you are charging passengers for a bus ride and you see three Americans walk out of a Walmart and you see a group of yellow clad Hindu Swamis. Your van will be full to capacity with the three Walmart shoppers, and you will receive 3 fares, but no tip. If you pick up the Hindu Swamis you will fill the van with 18 skinny guys, 18 fares, you will receive enlightenment and you will not worry about a tip. You basically get more bang for your buck packing the skinny ones in. And the same thing applies with rebreather sorb as the smaller the granule the more you can pack into a space.

Sorb description is counterintuitive as the smaller the grain, the larger the number (8-12) and the larger the granule the smaller the number (4-8). The smaller grains that fit together have a combined greater surface area to absorb more Co2. The bigger grain ends up having more space between them which allows ease of breathing, but less capacity to absorb.

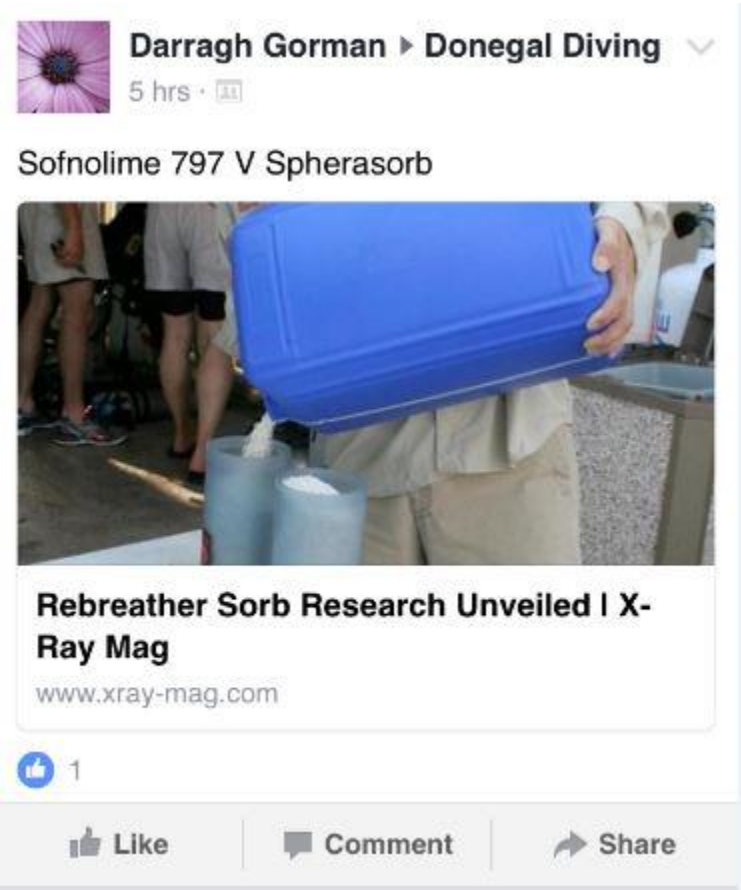
As Martin Parker states in the article "We have all used other limes, particularly when we travel but you MUST reduce your usage times compared to 797. In some cases it should be reduced to less than 1/3rd of the 797 time!" Martin Parker

This is also common knowlege and we have understood for many years that 4-8 grade does not have the same duration for scrubbing Co2 as 8-12 which he specifies in the Inspiration users manual.

So why the complaint about an article that is "mostly accurate?" Well for one, the Signature Blue Keg that is shown in the picture is also the most common competitor for MoPro 797, and that is Intersorb 8-12. These two Co2 absorbents have the identical mesh size of 8-12 and, near identical chemical make up and are used by many ccr divers interchangeably with NO difference in duration.

It is true that people piss and moan about sorb dust, and some divers are prone to wear Hazmat suits when filling a scrubber? Well I can't be the worlds maxipad for all the panty waste in the dive community. And the complaints of one verse the other are pure BS! Divers are most responsible for dust in how they handle the kegs of sorb, as ALL diving sorb has some dust residue at the end of the keg. Sorb manufactures specify the amount of moisture content as well as hardness of grain. See the links.

Secondly the article simply ASSumes that the reader knows that Spherasorb in a Blue Keg is NOT Intersorb 8-12, and they also ASSume that the dive community knows that Spherasorb is not an 8-12 but that it is a 4-8 mesh size. If this was common knowledge then I would not be fielding the questions and concerns that are coming from the divers at large



*Picture shows the Blue Keg which is trademark image of Intersorb widely used by ccr divers

Take-Home Message

So if you are using Intersorb 8-12 in a blue keg in your ccr, well continue to have great dives and let the people who care about brand names continue to whine. And by all means if you are diving the white keg or Sofnolime 797 continue to have nice dives. They both work!

You must be aware of the C02 absorbent that you are using in your rebreather. Know the manufactures specification for Grade or Mesh Size. If you are faced with another option when traveling, be aware that 4-8 diving grade absorbent is about 2/3 the time of 8-12 grade. And do not be swayed by politics of brand names. The companies that produce medical and diving grade Co2 absorbents are not back street crack dealers mixing up a batch in a bathtub.

Safe Diving,

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