

a silk purse or a sow's ear?

I recently saw a press release announcing the launch of a new paint. I have seen many positioning statements in my career but this one really had me banjaxed! "Turn your house into a tree - and your neighbourhood into a forest - by painting." It went on to say "Every 45 litres of our paint used will absorb 14.4 kilograms of carbon dioxide."

The release was quite open about the fact, and claimed some 'traditional' relevance, that their technology was based on the use of lime, the highly alkaline oxide of calcium.

Now, to my knowledge, calcium oxide does not occur naturally except in some volcanic eruptive material and occasionally in the aftermath of coal seam fires. Both you will notice, subsequent to high temperature events.

Lime is a very useful material, which has been known and manufactured and used since Roman times.

Lime, aka quicklime (calcium oxide) is produced by roasting limestone (calcium carbonate). Calcium carbonate is widely distributed in chalk, calcite, marble, coral, sea shells, bones and other bits and pieces. It is a relatively stable product being a balanced combination of the alkaline calcium oxide and acidic carbon dioxide.

To produce the lime, one must drive these two components apart; and this takes a lot of energy - 3,200 mega joules per tonne of limestone! As well as the energy burden, this tonne of limestone releases

440kgs of carbon dioxide into the atmosphere during the roasting process.

Lime is, indeed, a very reactive substance. It will re-combine spontaneously with carbon dioxide from the air or, in a more controlled manner, via its reaction product with water - slaked lime. Slaked lime (or calcium hydroxide) is a highly alkaline intermediary, which also reacts readily with atmospheric carbon dioxide to form calcium carbonate. These reactions have been used beneficially for eons in lime mortar.

Slaked lime is very aggressive to human flesh - a feature which Dr Crippen tried to utilise with limited success! It has a pH value of 12.2, which is very high on the alkalinity scale and is demanding of appropriate warning labels.

Lime or slaked lime, as the launch material rightfully claimed, will absorb carbon dioxide - but how much? Surprise, surprise, precisely the same amount that was released to the atmosphere during its manufacture! Its contribution could therefore be considered as neutral at best were it not for the significant amount of energy employed in the roasting.

I fully support the elegant use of language to promote our industry's products but I do not agree with hyperbole designed to mislead. A sow's ear perhaps? Certainly not a forest! If you want a forest, you might be better to try the garden centre.



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