

Michael Risi

From: Jim Barry <barry@mbari.org>
Sent: Thursday, July 12, 2012 9:17 AM
To: 'Michael Risi'
Cc: 'Kim Reisenbichler'
Subject: RE: pH for MRS

Hi Guys,
Here is the equation we used, based on lab tests and calculations.

$\text{Volume(ml)} = -27.16x^3 - 11.71x^2 - 18.09x$ This is the amount of CO2 saturated seawater used for injection, based on a 2.285 l chamber. For a 6.5 liter chamber, the conversion should be simple, just multiple by 6.5/2.285, or,

$\text{Volume (ml)} = -77.25 X^3 - 33.30x^2 - 51.47x$

Note that the temperature of the water during bubbling with CO2 affects the saturation concentration. I think Kurt bubbled at 17.4 degree C. Shouldn't make a huge difference, but is relevant. I recommend testing in the lab if you can.

j

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-----Original Message-----

From: Michael Risi [<mailto:mrisi@mbari.org>]
Sent: Thursday, July 12, 2012 9:02 AM
To: Jim Barry
Cc: 'Kim Reisenbichler'
Subject: pH for MRS

Hey Jim,

Kim will be doing CO2 seawater injections for MRS on his upcoming cruise.

His chambers are 6.5 liters and he'd like to get a 0.5 unit of pH change. This is the first time he's doing this and just wants to be in the ball park. Do you have an idea of how many ml of CO₂ saturated sea water we'd need to inject?

Thanks, Mike