

## Re: Quantitative Analysis of CaO in the mixture

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*Source:* <http://sci.tech-archive.net/Archive/sci.chem/2006-01/msg00306.html>

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- *From:* "Farooq W" <farooq.w@xxxxxxxx>
  - *Date:* 28 Jan 2006 21:01:32 -0800
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lms7832@xxxxxxxx wrote:

- > Dear
- >
- > I have powders which is mixtures of CaO, CaTiO<sub>3</sub>, CaCO<sub>3</sub>..
- >
- > Then I'm not sure the percentage of CaO in the powder.
- >
- >
- > Is there any easy way to find that?

Perhaps no.

- >
- > I think that only CaO react with water and then convert into Ca(OH)<sub>2</sub>.

Which is still insoluble in water and difficult to separate from the mixture.

- >
- > But other component is not react with water.
- >
- > By using this chemical reaction, I'd like to measure CaO content(%) in
- > the powder.
- >
- > Does this method make sense?
- >
- > Please give me some advices.
- >
- > Thank you.

Thermogravimetry should help you help you here, if it is available. Run TGs of pure CaTiO<sub>3</sub>, CaCO<sub>3</sub> and CaO and then your sample. The data obtained is sufficient to calculate the percentage of CaO.

Since you have a three component mixture, you need to have at least three sets of independent measurements (3 equations for three unknowns) for determining CaO. I do not know the properties of CaTiO<sub>3</sub> (solubility in water, acids etc.), but what you can do it first is to measure the Ti content of your mixture ( 1 mol Ti = 1 mol CaTiO<sub>3</sub>), then acidify a

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new portion of the sample and measure CO<sub>2</sub> evolved ( 1 mol CO<sub>2</sub> = 1 mol CaCO<sub>3</sub>). Convert this data into percentage, then % CaO = 100 – % CaTiO<sub>3</sub> – % CaCO<sub>3</sub>. Unfortunately this looks rather impractical.

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- **References:**

- ◆ *Quantitative Analysis of CaO in the mixture*

- ◆ *From: lms7832*

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