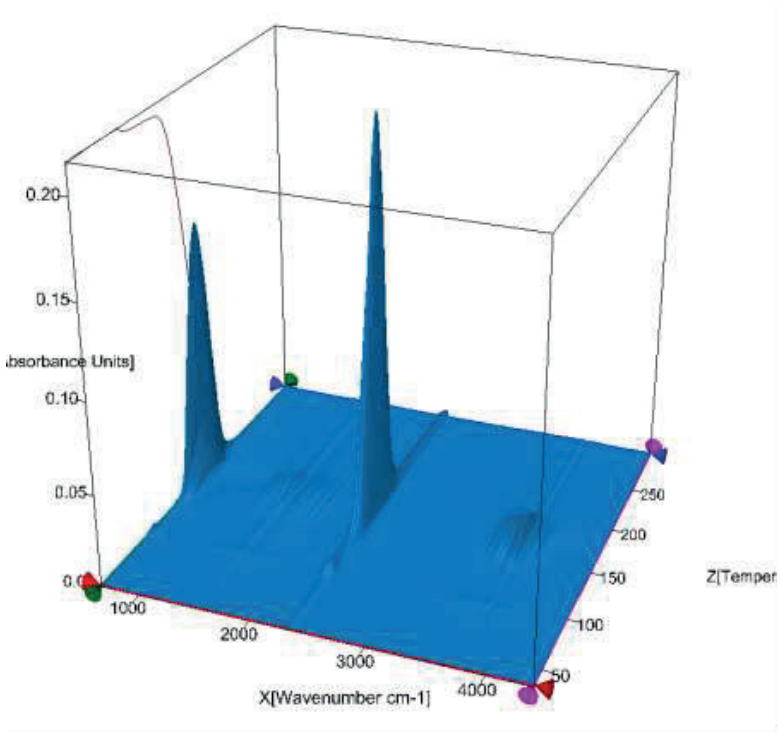
APPLICATION**SHEET**

Inorganics · Food
TG 209 ***F1*** *Iris*® – FT-IR

$NaHCO_3$

Introduction

$NaHCO_3$ has long been known and is widely used. The salt has many names including sodium bicarbonate, sodium hydrogen carbonate, sodium bicarb, baking soda, bread soda, cooking soda, bicarb soda, saleratus or bicarbonate of soda. There are countless applications of $NaHCO_3$ in cooking (baking), neutralization of acids, deodorizers, pest control, medical uses, cosmetics or cleaning agents.



Test Conditions

Temperature range:	RT ... 30°C
Heating/cooling rates:	10 K/min
Atmosphere:	Nitrogen (40 ml/min)
Sample mass:	4.76 mg
Crucible:	Alumina
Sensor:	Platinel

Test Results

A 3-dimensional plot of the FTIR spectra with the TGA curve of $NaHCO_3$ is depicted in figure 1. Figure 2 shows the TGA curve and traces of H_2O and CO_2. $NaHCO_3$ shows a small TGA step at approximately 97°C with a mass loss of 0.7%. The main decomposition started at approximately 135°C with maximum water and CO_2 release at approximately 171°C. Even such small amounts of 34 microgram of water and CO_2 in total can be detected with the FTIR coupling. The total mass loss of 36.95% fits very well with the theoretical value of 36.92%, this proves the high purity of the sample.

NGB · Application Sheet 141 · E · 1021 · Technical specifications are subject to change.

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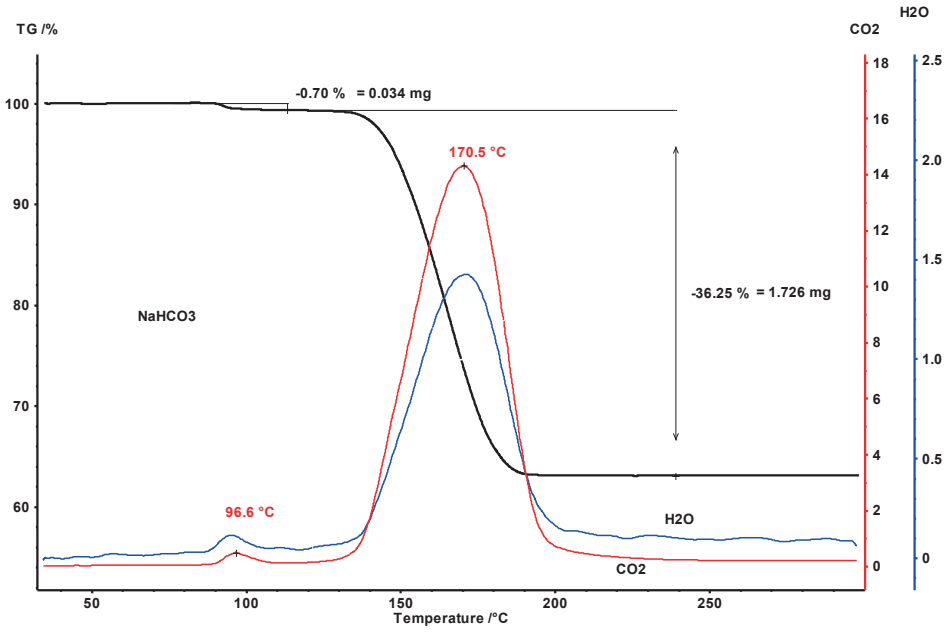

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