



SIGMA-ALDRICH

3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Calcium carbonate ACS Reagent

Product Number **C 3174**
Store at Room Temperature
25,650-1 is an exact replacement for C 3174

Product Description

Molecular Formula: CaCO_3
Molecular Weight: 100.1
CAS Number: 471-34-1
Synonym: calcite

This product is designated as Low in Alkalies and as ACS Reagent grade. It meets the specifications of the American Chemical Society (ACS) for reagent chemicals.

Calcium carbonate is a material that is widely found in nature, and is commonly referred to as calcite. It comprises about 4% (by weight) of the Earth's crust and is present in many different environments and forms. These include rivers and oceans in dissolved form, sedimentary environments as limestone, carbonatite-lava in a molten form, and in such geological formations as stalactites and stalagmites. Plants and animals utilize calcium carbonate to form their skeletons and shells.^{1,2}

Calcium carbonate is used in such processes as the manufacture of paper, paints, glass, and ceramics, the compounding of polymers, environmental applications such as waste water treatment, and as an extender in paints and coatings.³

An investigation of the formation of calcium carbonate deposits in the pineal gland of the human brain by microscopy and spectroscopy has been reported.⁴ The precipitation of calcium from bicarbonate-buffered Krebs-Henseleit-type mammalian physiologic saline, in the form of calcium carbonate, has been examined.⁵

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble at a concentration of 66 mg/ml in $\text{H}_2\text{O}:\text{HCl}$ (13:2), yielding a clear, colorless solution.

References

1. Wilt, F. H., Matrix and mineral in the sea urchin larval skeleton. *J. Struct. Biol.*, **126(3)**, 216-226 (1999).
2. Marshall, A. T., Occurrence, distribution, and localisation of metals in cnidarians. *Microsc. Res. Tech.*, **56(5)**, 341-357 (2002).
3. The Merck Index, 12th ed., Entry# 1697.
4. Baconnier, S., et al., Calcite microcrystals in the pineal gland of the human brain: first physical and chemical studies. *Bioelectromagnetics*, **23(7)**, 488-495 (2002).
5. MacConaill, M., Calcium precipitation from mammalian physiological salines (Ringer solutions) and the preparation of high [Ca] media. *J. Pharmacol. Methods*, **14(2)**, 147-155 (1985).

GCY/RXR 3/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.