

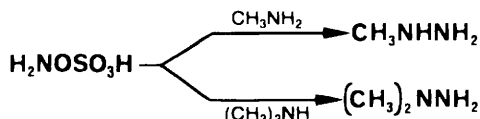


Focus on Hydrazines

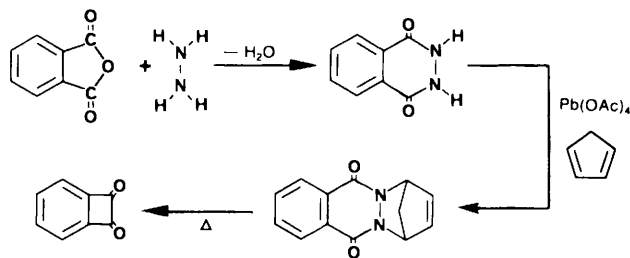
A recent issue of the *Aldrichimica Acta* features a comprehensive review of the properties and applications of **hydrazine**. In the review, Dr. H.W. Schiessl describes the unusually broad range of applications of this unique diamine and its many derivatives.

The behavior of **hydrazine** in some chemical systems may be rather unpredictable considering its diverse properties—it is a base, a nucleophile, it is difunctional, endothermic, and can act as a reducing or oxidizing agent.

While **hydrazine** has been manufactured by the oxidation of ammonia for nearly 100 years,¹ laboratory syntheses of useful substituted hydrazines are still being improved. A direct method of preparing CH_3NHNH_2 and $(\text{CH}_3)_2\text{NNH}_2$ from **hydroxylamine-O-sulfonic acid** was reported quite recently.²



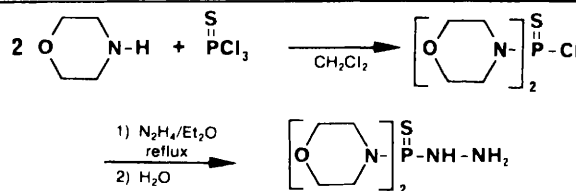
In organic chemistry, **hydrazine** is part of a useful synthetic route to benzocyclobutenedione.³



A new, simple and efficient method of preparing a wide variety of *o*-aminothiophenols utilized an ethanolic solution of **85% hydrazine hydrate** to effect the reductive cleavage of benzothiazoles at room temperature.⁴

New data have appeared concerning high-yield selective cleavage reactions of the N-N bond of phenylhydrazides, a process which could play a role in new, indirect amidation methods.⁵

In medicinal chemistry, thiophosphoric hydrazide and hydrazone derivatives have been prepared as part of a study of antitumor activity of chelated phosphorus-nitrogen compounds.⁶ One of the key hydrazide precursors was made *via* a novel synthesis from **morpholine**, **thiophosphoryl chloride** and **hydrazine**.



In the biochemical area, bis(N-protected amino acid) hydrazides such as R-X-NHNH-X-R [R = Cbz or Boc, X = an amino acid moiety] have been prepared by papain-catalyzed condensation of the amino acid with N_2H_4 in aqueous buffer at 38°C .⁷

Aldrich offers over 50 hydrazines in its Catalog/Handbook and several dozen more hydrazines in its Library of Rare Chemicals. If interested in a list of all of these, please write for a free computer printout of all our hydrazines.

If you find hydrazine chemistry as fascinating as we do, write or call (800-558-9160) for a complimentary copy of *Aldrichimica Acta*, Volume 13, No. 2, which features Dr. Schiessl's article on hydrazines.

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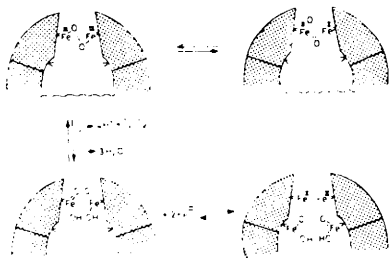
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RSC Publications

Specialist Periodical Report



Inorganic Biochemistry Vol. 1

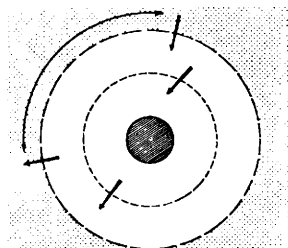
Senior Reporter: Dr H. A. O. Hill, *University of Oxford*

Inorganic Biochemistry can be defined as the biochemistry of those elements whose chemistry normally constitutes the province of inorganic chemists. Coverage is extremely wide, ranging from chemical physics to clinical medicine, and its influence is all-pervasive. There probably does not exist a single enzyme-catalysed reaction to which enzyme, substrate, product, or a combination of these is not influenced in a very direct and specific manner by the precise nature of the inorganic ions which surround and modify it.

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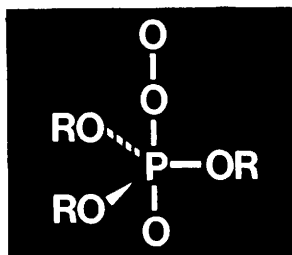
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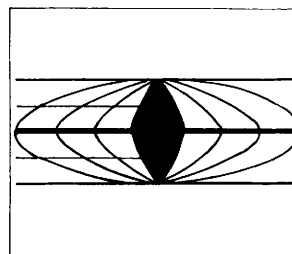
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