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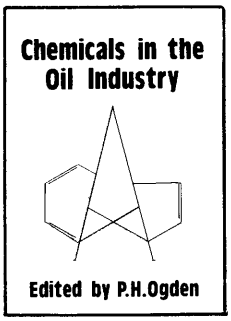
SPECIAL PUBLICATIONS

Chemicals in the Oil Industry



Edited by P. H. Ogden

Chemicals in the Oil Industry discusses some of the problems associated with oil production, particularly where the use of chemical additives is concerned. This book sets out to define those problems which can be solved through the use of chemical additives, the type of chemical currently favoured, the level of service required to supply such chemicals effectively to the oil industry, the volume of chemicals used, and the financial outlay required of the oil producer.

Brief Contents:
Application of Chemistry to the Drilling Operation;
Chemicals for Water-based Drilling Fluids and Their Temperature Limitations;
The Development and Application of Oil-base Muds;
Chemical Aspects of Oilwell Cementing;
The Role of Chemicals in Oil and Gas Production;
Chemical Demulsification of Produced Crude Oil Emulsions;
Oily Wastewater Treatment in the Production of Crude Oil;
The use of Ethylene–Vinyl Acetate Copolymers as Flow Improvers and Wax Deposition Inhibitors in Waxy Crude Oil;
Water Scaling Problems in the Oil Production Industry;
The Chemistry of Corrosion Inhibitors Used in Oil Production;
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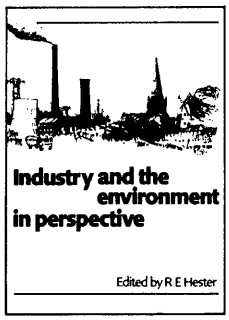
Industry and the Environment in Perspective



Edited by R. E. Hester

Over the past few decades environment and industrial issues have become increasingly the subject of public interest. Generally environmentalist issues (especially when linked with industrialist issues) are surrounded by controversy, and a clear viewpoint is hard to establish. *Industry and the Environment in Perspective* sets out to establish a clearer understanding of environmental and industrial matters by presenting chapters on a wide range of topics within this important subject.

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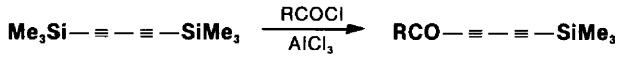
BTMSBD

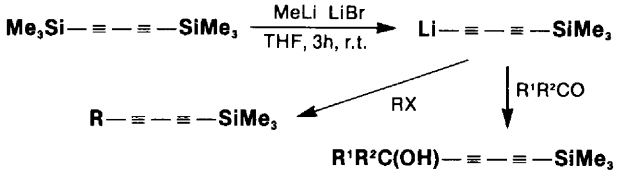
1,4-Bis(trimethylsilyl)-1,3-butadiyne

1,4-Bis(trimethylsilyl)-1,3-butadiyne (BTMSBD) is a stable, crystalline source of butadiyne, an extremely useful, but dangerously explosive chemical.[1] **BTMSBD** can serve as a nucleophilic butadiyne equivalent and as a potential (*E*)- or (*Z*)-vinylacetylene anion equivalent.

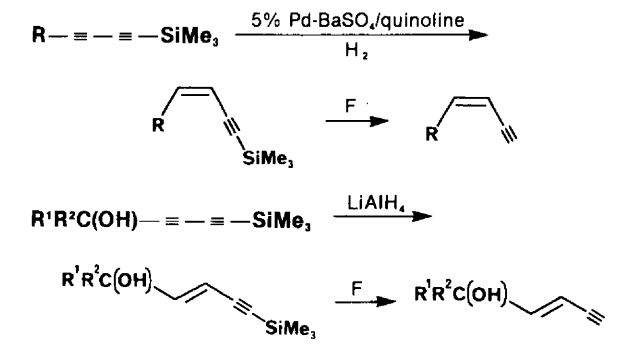
BTMSBD reacts with powerful electrophiles (*e.g.*, the Friedel-Crafts reagent) with selective replacement of one Me_3Si group to give trimethylsilylbutadiynyl ketones.[2]



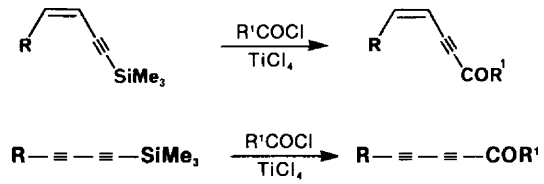
4-Lithiotrimethylsilylbutadiyne is a more powerful nucleophile than **BTMSBD**. It is easily generated by selective monodesilylation of **BTMSBD** with MeLi LiBr in THF, and reacts readily with carbonyl compounds[3,4] and primary alkyl halides.[5]



The 4-substituted 1-trimethylsilylbutadiynes can be selectively hydrogenated at the nonsilylated triple bond to give, after desilylation, terminal (*Z*)-enynes.[6-8] Alternatively, $LiAlH_4$ reduction of the diynols affords (*E*)-enyne allylic alcohols.[4,9,10]



Both the reduced silyl enyne and the silyl diyne undergo electrophilic replacement of the remaining silyl substituent with Friedel-Crafts reagents.[11] Such transformations have wide applications in natural-product synthesis.[4,11,12]



BTMSBD reacts with selenides to give selenophens,[13] with tellurides to give tellurophens,[14] and with hydrazine to give pyrazoles.[15] It has also been used in [2 + 4]-cycloaddition/cycloreversion sequences to prepare ethynyl-substituted pyridazines[16] and furans.[17]

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