

Acetylene

Its
Properties
Manufacture
and Uses

S. A.
MILLER

VOLUME 1



ACETYLENE

ITS PROPERTIES, MANUFACTURE
AND USES
VOLUME I

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PREFACE

UNITS

IN DRAWING together fundamental scientific information, chemical engineering, and commercial data from a vast variety of sources, it was inevitable that difficulties with units should arise. Without being rigidly consistent, the overwhelming majority of the information in Chapter 1-7 has been quoted in or converted into metric units (cgs system), though the finer details of 'International System of Units (Bigg, *J. Roy. Inst. Chem.*, 1963, **87**, 407) have not been followed. Sometimes both metric and British units, one of them in parentheses, have been given, for example in respect of particle size, where the conversion from mm or microns to B.S. mesh is not straightforward. Where British or American *regulations* have been quoted, the units have not been converted. For Chapter 8, conversions would have given rise to many semi-absurdities, such as 6.35 mm pipe when a standard $\frac{1}{4}$ inch pipe was used, and either British and metric units have been used in this chapter, according to the source of information.

This, however, does not apply to temperature, where a change from Fahrenheit to Celsius seems to be in progress in Britain anyway. Fahrenheit temperatures are only given when they occur in documents of legal standing, and are designated °F. As all temperatures are given on the Celsius scale, except where absolute temperatures are used and are clearly shown as °K., it seemed superfluous to insert a C after the degree sign for each occasion when a temperature is given, and it must be understood that all temperatures in the text of this book (including Chapter 8) are on the Celsius scale unless otherwise stated. The designation °C. has been used in tables, for convenience of presentation. Rankine temperatures, °R., have been avoided (except in Fig. 2.4).

For pressure, the atmosphere has been preferred both to kg/sq.cm. and to bars. The units mm of mercury have been used without including the words 'of mercury' or writing mm Hg, simply as mm, and occasionally μ for 10^{-3} mm. One matter possibly not familiar to all readers is the use of atma for atmospheres absolute and atm-g for atmospheres gauge. The micron (both as a pressure and as a linear measure) has been designated μ , and not (as is the most modern practice) μm (= micrometre); when not standing alone, μ indicates a 10^{-6} unit, as μg microgram. Space velocity has been abbreviated simply to hr^{-1} , when meaning cu.m. of gas at normal temperature and pressure per cu.m. of reactor volume per hour. Abbreviations of units are still not uniform even in the scientific literature, and such usages as cc (or ml) and cu.m. instead of the nowadays recommended cm^3 and m^3 should not cause the reader any difficulty.

REFERENCES

THE PRINCIPLE has been followed of giving the majority of the references consulted (as such, in translation, or as abstracts) in the preparation of this book (it has not been advisable to give *all* the references). This policy informs the reader both of the date and nature of the source for almost every item of information, and therefore should add to the value of the book; at the same time, of course, it enables the reader to follow through and obtain more information on such items as he is particularly interested in. Journal references give the page number on which the article consulted starts, rather than the page on which the particular item of information is referred to. Where pagination is not continuous through the year, the issue number has usually been given (in italics in brackets) rather than the month or week. Authors' initials have been omitted from the footnotes, but have been included in the name index. Where journals are particularly difficult of access, the reference with the author's name and initials will (in most cases) enable the reader who so wishes to locate an abstract, most frequently in *Chemical Abstracts*, or otherwise in *Physics Abstracts*, *Bibliographical Bulletin of Welding*, or some other abstracts journal as appropriate.

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