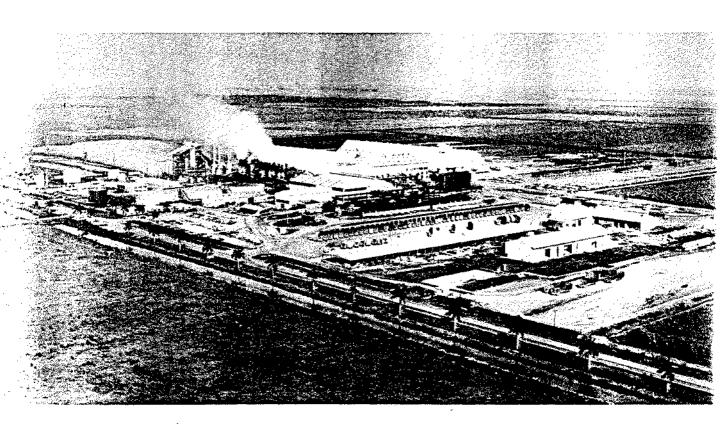


Meade-Chen

Gane Sugar Handbook

a manual for cane sugar manufacturers and their chemists



TENTH EDITION

Copyright © 1977 by John Wiley & Sons, Inc.

All rights reserved. Published simultaneously in Canada.

Reproduction or translation of any part of this work beyond that permitted by Sections 107 or 108 of the 1976 United States Copyright Act without the permission of the copyright owner is unlawful. Requests for permission or further information should be addressed to the Permissions Department, John Wiley & Sons, Inc.

Library of Congress Cataloging in Publication Data:

Meade, George Peterkin, 1883-1975.

Cane sugar handbook.

At head of title: Meade-Chen.

Ninth ed. published under title: Spencer-Meade Cane sugar handbook.

"A Wiley-Interscience publication."

Bibliography

Includes index.

1. Sugar-Manufacture and refining—Handbooks, manuals,

etc. I. Chen, James C. P., 1919-

joint author.

II. Title.

TP379.M4 1977

664'.122'0202

76-51046

ISBN 0-471-58995-0

10 9 8 7 6 5 4 3

Contents

Reference Tables (see list on pp. xiii-xiv)
References and Abbreviations xv-xviii

Sugar and Sugarcane

1	Sugarcane, James E. Irvine 3	
2	Composition of Cane and Juice, James E. Irvine 15	
3	Economic Aspects of the Sugar Industry, James E. Irvine	30

Raw Sugar Manufacture and Refining

4	Outline of Process for Manufacturing Raw Cane Sugar 43
5	Extraction of the Juice 48
6	Bagasse and its Uses 95
7	Purification of the Juice: 1 109
	clarification reactions and control
8	Purification of the Juice: II 140
	clarification apparatus and special processes
9	Treatment of Mud Waters and Clarified Juice 164
10	Chemical Reagents in Sugar Processes 180
11	Evaporation and Heating, Thomas W. Baker 185
12	The Crystallization of Sugar 235
13	Crystallization in Motion 290
14	Purging, Packing, and Warehousing the Sugar 334
15	Blackstrap Molasses and Edible Syrups 359
16	Keeping and Refining Qualities of Raw Sugar 378
17	Microbiology of Sugar Manufacture and Refining 405
18	Cane Sugar Refining: I 423
	introductory; affination; clarification, Henry G. Gerstner
19	Cane Sugar Refining: II 455
	decolorization, Frank G. Carpenter and Margaret A. Clarke

xii	Contents
A : /	COMOING

Cane Sugar Refining: III 494 20 crystallization and finishing, Henry G. Gerstner

Analytical Procedures

21	Polarimetry in Sugar Analysis 515
22	Double-Polarization Methods 546
23	Chemical Methods in Sugar Analysis 551
24	Density and Total Solids Determination 569
25	Determination of Ash 595
26	pH 603
27	Color and Turbidity in Sugar Products, Philip F. Meads 613
28	Sampling and Averaging 629
29	Analysis of the Sugarcane 649
30	Analysis of the Juice 658
31	Analysis of the Syrup, Massecuites, and Molasses 666
32	Analysis of Sugars 677
33	Examination of Refined Sugar 688
34	Analysis of Bagasse and Press Cake 704
35	Sugar Industry Wastewater Effluents and Air Emission 713
36	Special Laboratory Reagents 727
37	Special Techniques for Analysis of Sugars and Nonsugars, Margaret A. Clarke and Frank G. Carpenter 734
	diu ridin G. Odipoliki 194

Chemical Control

38	Definitions and Terms in Sugar Factory Control	761
39	Chemical Control 769	
40	Sugar House Calculations 806	

Methods of Cane Purchase 815 41

> Reference Tables 823 Index 919