



NBS SPECIAL PUBLICATION **449**

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Chemical Kinetics of the Gas Phase Combustion of Fuels

(A Bibliography on the
Rates and Mechanisms of Oxidation
of Aliphatic C₁ to C₁₀ Hydrocarbons
and of Their Oxygenated Derivatives)

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards¹ was established by an act of Congress March 3, 1901. The Bureau's overall goal is to strengthen and advance the Nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research and provides: (1) a basis for the Nation's physical measurement system, (2) scientific and technological services for industry and government, (3) a technical basis for equity in trade, and (4) technical services to promote public safety. The Bureau consists of the Institute for Basic Standards, the Institute for Materials Research, the Institute for Applied Technology, the Institute for Computer Sciences and Technology, and the Office for Information Programs.

THE INSTITUTE FOR BASIC STANDARDS provides the central basis within the United States of a complete and consistent system of physical measurement; coordinates that system with measurement systems of other nations; and furnishes essential services leading to accurate and uniform physical measurements throughout the Nation's scientific community, industry, and commerce. The Institute consists of the Office of Measurement Services, the Office of Radiation Measurement and the following Center and divisions:

Applied Mathematics — Electricity — Mechanics — Heat — Optical Physics — Center for Radiation Research: Nuclear Sciences; Applied Radiation — Laboratory Astrophysics² — Cryogenics² — Electromagnetics² — Time and Frequency².

THE INSTITUTE FOR MATERIALS RESEARCH conducts materials research leading to improved methods of measurement, standards, and data on the properties of well-characterized materials needed by industry, commerce, educational institutions, and Government; provides advisory and research services to other Government agencies; and develops, produces, and distributes standard reference materials. The Institute consists of the Office of Standard Reference Materials, the Office of Air and Water Measurement, and the following divisions:

Analytical Chemistry — Polymers — Metallurgy — Inorganic Materials — Reactor Radiation — Physical Chemistry.

THE INSTITUTE FOR APPLIED TECHNOLOGY provides technical services to promote the use of available technology and to facilitate technological innovation in industry and Government; cooperates with public and private organizations leading to the development of technological standards (including mandatory safety standards), codes and methods of test; and provides technical advice and services to Government agencies upon request. The Institute consists of the following divisions and Centers:

Standards Application and Analysis — Electronic Technology — Center for Consumer Product Technology: Product Systems Analysis; Product Engineering — Center for Building Technology: Structures, Materials, and Life Safety; Building Environment; Technical Evaluation and Application — Center for Fire Research: Fire Science; Fire Safety Engineering.

THE INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY conducts research and provides technical services designed to aid Government agencies in improving cost effectiveness in the conduct of their programs through the selection, acquisition, and effective utilization of automatic data processing equipment; and serves as the principal focus within the executive branch for the development of Federal standards for automatic data processing equipment, techniques, and computer languages. The Institute consists of the following divisions:

Computer Services — Systems and Software — Computer Systems Engineering — Information Technology.

THE OFFICE FOR INFORMATION PROGRAMS promotes optimum dissemination and accessibility of scientific information generated within NBS and other agencies of the Federal Government; promotes the development of the National Standard Reference Data System and a system of information analysis centers dealing with the broader aspects of the National Measurement System; provides appropriate services to ensure that the NBS staff has optimum accessibility to the scientific information of the world. The Office consists of the following organizational units:

Office of Standard Reference Data — Office of Information Activities — Office of Technical Publications — Library — Office of International Relations — Office of International Standards.

¹ Headquarters and Laboratories at Gaithersburg, Maryland, unless otherwise noted; mailing address Washington, D.C. 20234.

² Located at Boulder, Colorado 80302.

Chemical Kinetics of the Gas Phase Combustion of Fuels

(A Bibliography on the Rates and Mechanisms of Oxidation
of Aliphatic C₁ to C₁₀ Hydrocarbons and of Their
Oxygenated Derivatives)

Francis Westley

Chemical Kinetics Information Center
Institute for Materials Research
National Bureau of Standards
Washington, D.C. 20234

This work was supported by the

Office of Standard Reference Data
National Bureau of Standards
Washington, D.C. 20234

Naval Sea Systems Command
Department of the Navy
Washington, D.C. 20360

and

Division of Conservation, Research and Technology
Energy Research and Development Administration
Washington, D.C. 20545



U.S. DEPARTMENT OF COMMERCE, Elliot L. Richardson, *Secretary*

Edward O. Vetter, *Under Secretary*

Dr. Betsy Ancker-Johnson, *Assistant Secretary for Science and Technology*

NATIONAL BUREAU OF STANDARDS, Ernest Ambler, *Acting Director*

Issued October 1976

Library of Congress Cataloging in Publication Data
Westley, Francis.

Chemical kinetics of the gas phase combustion of fuels.
(National Bureau of Standards Special publication ; 449)
Bibliography: p.
Supt. of Docs. no: C 13.10: 449
1. Combustion—Bibliography. 2. Hydrocarbons—
Bibliography. 3. Chemical reaction, Rate of—
Bibliography. I. Title. II Series: United States. National Bureau of
Standards. Special publication ; 449. QC100.U57 no. 449
[Z5524.R5] [QD516] 602'.1s [016.547'4] 76-608282

National Bureau of Standards Special Publication 449

Nat. Bur. Stand. (U.S.), Spec. Publ. 449,138 pages (Oct. 1976)

CODEN: XNBSAV

**U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1976**

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
(Order by SD Catalog No. C13.10:449). Stock No. 003-003- Price \$2
(Add 25 percent additional for other than U.S. mailing).

Foreword

The National Standard Reference Data System was established in 1963 for the purpose of promoting the critical evaluation and dissemination of numerical data of the physical sciences. The program is coordinated by the Office of Standard Reference Data of the National Bureau of Standards but involves the efforts of many groups in universities, government laboratories, and private industry. The primary aim of the program is to provide compilations of critically evaluated physical and chemical property data. These tables are published in the *Journal of Physical and Chemical Reference Data*, in the NSRDS-NBS series of the National Bureau of Standards, and through other appropriate channels.

The task of critical evaluation is carried out in various data centers, each with a well-defined technical scope. A necessary preliminary step to the critical evaluation process is the retrieval from the world scientific literature of all papers falling within the scope of the center. Each center, therefore, builds up a comprehensive well-indexed bibliographical file which forms the base for the evaluation task. Bibliographies derived from these files are published when they appear to be of value to research workers and others interested in the particular technical area.

Further information on NSRDS and the publications which form the primary output of the program may be obtained by writing to the Office of Standard Reference Data, National Bureau of Standards, Washington, DC 20234.

David R. Lide, Jr., Chief
Office of Standard Reference Data

TABLE OF CONTENTS

Synoptic table of contents.....	v
Introduction.....	1
Guidelines for the user.....	3
Journal and report CODEN identifications	7
C ₁ compounds.....	12
C ₂ compounds.....	29
C ₃ compounds.....	41
C ₄ compounds.....	49
C ₅ compounds.....	59
C ₆ compounds.....	64
C ₇ compounds.....	68
C ₈ compounds.....	70
C ₉ compounds.....	72
C ₁₀ compounds.....	73
Reviews.....	74
References.....	76

SYNOPTIC TABLE OF CONTENTS
C₁ COMPOUNDS

REACTING HYDROCARBON SPECIES	ATTACKING MOLECULE OR RADICAL											
	σ	σ ₂	σ ₃	σH	Hσσ·	R·	RH	Rσ·	Rσσ·	(?) DCMP	(*) RCMB	(\\$) MISC
CH ₃	12	12		12	12			12				12
:CH ₂	12	12		13	13			13				13
CH ₃ ·	13	13	14	14	14			15	15			14-15
CH ₄	15	16	17	18	18			18				18
·CH ₃	19	19	19	19	19	20	20	20	21	18	20	19-20
HCσσ·		20			21				21	20	20	20
HC(σ)σσ·		21			21				21	20	21	21
HC ₂ σ·		21		22	23	24	24	24	21	21	24	22-24
HC ₂ σH			24									
CH ₂ (σ·)σ ₂			24									
·CH ₂ σσ·			24									
CH ₂ (σσ·)σ ₂										24		
CH ₃ σ·	24	24	25	25	25	26	26	26	26	24	25	25
·CH ₂ σH		25										
·CH ₂ σσH										26		
CH ₃ σσ·		26	27	27	27	27	27	27	27	26	27	
CH ₂ (σ·)σH			26									
·CH ₂ σσH			26									
CH ₂ (σ·)σσH			28							28		
CH ₃ σH				28							28	
CH ₃ σσH												

(?) Decomposition

(*) Disproportionation and/or Recombination

(\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₂ COMPOUNDS

REACTING HYDROCARBON SPECIES \ ATTACKING MOLECULE OR RADICAL											(*) RCMB	(\$)	MISC
	θ	θ ₂	θ ₃	θH	Hθθ·	R·	RH	Rθ·	Rθθ·	(?) DCMP			
CH≡C· CH≡CH CH ₂ CH· CH ₂ =CH ₂	29 29 30 30	29 29 31 31	29 31 31 31	29 31 31 31									30
CH ₃ CH ₂ · CH ₃ CH ₃ · ·CH=C=θ CH ₂ =C=θ	32 32 34 34	32 33 34 34	32 33 34 34	32 33 34 34				32 34 34	34				32 34 34
CHθCHθ CH ₂ =CH(θ-) or ·CH ₂ CHθ CH ₃ C(θ)· CH ₃ Cθθ·		34 35 35			34			35 35			35 35	35	35
·θCH ₂ CHθ CH ₃ C(θ)θθ· CH ₃ CHθ CH ₃ CH(θ-)· ₂	36	36 37	36	36 36	35 36	37		37			35 35 36	36	36 37
CH ₃ CH(·)θθ· CH ₃ C(θ)θθH CH ₃ CH(θθ-)· ₂ CH ₃ CH ₂ θ·		37 37					38	38			37 37 37		
CH ₃ θCH ₂ · CH ₃ CH(·)θH CH ₃ θθCH ₂ · CH ₃ θCH ₂ θ·		37 37 38 38		37							38 38	37	
CH ₃ CH(·)θθH CH ₃ CH(θ-)θH CH ₃ CH ₂ θθ· ·CH ₂ CH ₂ θθH		38 38 38			39		39		39		38 38 38	38	

(?) Decomposition

(*) Disproportionation and/or Recombination

(\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₂ COMPOUNDS Cont'd.

(?) Decomposition
(*) Disproportionation and/or Recombination
(\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₃ COMPOUNDS

REACTING HYDROCARBON SPECIES	ATTACKING MOLECULE OR RADICAL											
	σ	σ ₂	σ ₃	σH	Hσσ·	R·	RH	Rσ·	Rσσ·	(?) DCMP	(*) RCMB	(\\$) MISC
CH ₃ C≡CH	41			41								
CH ₂ =C≡CH ₂	41		41	41								
CH ₂ =CHCH ₂ ·		41										
CH ₃ CH=CH ₂	41	41	42	42	42							
CH ₃ CH ₂ CH ₂ · or (CH ₃) ₂ CH·			42		43				43			
CH ₃ CH ₂ CH ₃	43	43	44	44	44							
CH ₂ =CHCH ₃	44		44									
CH ₃ CH ₂ C(σ)·			45							44		
CH ₂ =CHCH ₂ σ·		44										
CH ₃ CH=CH ₂ σ·										45		
CH ₃ C(σ)CH ₂ σ·										45		
CH ₃ CH ₂ Cσσ·										45		
CH ₃ CH(σ·)CHσ										45		
(CH ₃) ₂ Cσ		45								45		
CH ₃ CH(σ·)CH ₂ σ·										45		
(CH ₃) ₂ C(σ·)σ·												
(CH ₃) ₂ C(σ·)CH ₂ σ·	45	45		45	45	45				46		
·CH ₂ CH ₂ CH ₂ σ·			45									
(CH ₃) ₂ C(σ·)σ·		46										
CH ₃ CH(σ·)CH ₂ σσ·										46		
CH ₃ CH(σσ·)CH ₂ σ·										46		
(CH ₃) ₂ C(σσ·)σ ₂										46		
CH ₃ CH ₂ CH ₂ σ·										46		
or (CH ₃) ₂ CHσ												
CH ₃ CH(·)CH ₂ σH		46										
CH ₃ CH(σH)CH ₂ ·		46										
CH ₃ σCH(·)CH ₃		46										
CH ₃ CH(·)CH ₂ σH		46										

(?) Decomposition

(*) Disproportionation and/or Recombination

(\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₃ COMPOUNDS Cont'd.

(?) Decomposition

(*) Disproportionation and/or Recombination

(S) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₄ COMPOUNDS

ATTACKING MOLECULE OR RADICAL REACTING HYDROCARBON SPECIES											(*) RCMB	(\$) MISC
	σ	σ ₂	σ ₃	σH	Hσσ·	R·	RH	Rσ·	Rσσ·	(?) DCMP		
CH ₂ CC≡CH	49											
CH ₂ =CHCH=CH ₂	49											
CH ₂ =C=CHCH ₃	49											
CH ₂ =CHCH=CH ₂		49	49									
CH ₃ CH=CHCH ₂ ·		49										
CH ₂ =C(CH ₃)CH ₂ ·		49										
CH ₃ CH ₂ CH=CH ₂	49	50	50	51	51							
cis- or trans-CH ₃ CH=CHCH ₃	49	50	51	51	51							
(CH ₃) ₂ C=CH ₂	50	50	51	51	51							
CH ₃ CH ₂ CH ₂ CH ₂ ·		51		52								
or CH ₃ CH ₂ CH(·)CH ₃												
(CH ₃) ₂ CHCH ₂ ·		51		52								
or (CH ₃) ₃ C·												
CH ₃ CH ₂ CH ₂ CH ₃	52	52	53	53	53							
(CH ₃) ₃ CH	52	53	53	53	53							
cis- or trans-CH ₃ CH=CHCH ₃		54	54									
CH ₃ CH ₂ CH ₂ C(σ)·		54										
CH ₃ C(σ)CH(σ·)CH ₃		54										
CH ₃ CH=CHCH ₂ σ·										54		
CH ₂ =C(CH ₃)CH ₂ σ·										54		
CH ₃ CH ₂ CH ₂ Cσ·										54		
CH ₃ C(σ)CH(σ·)CH ₃												
CH ₃ CH(·)CH(σ·)CH ₃											54	
(CH ₃) ₂ C(·)CH ₂ σ·										54		
CH ₃ CH ₂ CH ₂ CH ₂ σ												
CH ₃ C(σ)σCH ₂ CH ₃												
CH ₃ CH(σ·)CH(σσ·)CH ₃												
(CH ₃) ₂ C(σ·)CH ₂ (σσ·)												
(CH ₃) ₂ C(σσ·)CH ₂ σ·												
CH ₃ CH ₂ σCH ₂ CH ₂ σ·												
CH ₃ CH ₂ CH ₂ CH ₂ σ·												
or CH ₃ CH ₂ CH(σ·)CH ₃												

(?) Decomposition

(*) Disproportionation and/or Recombination

(\\$) Miscellaneous reactions

**SYNOPTIC TABLE OF CONTENTS
C₄ COMPOUNDS Cont'd.**

(?) Decomposition
(*) Disproportionation and/or Recombination
(\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₅ COMPOUNDS

REACTING HYDROCARBON SPECIES \ ATTACKING MOLECULE OR RADICAL	δ	δ ₂	δ ₃	δH	H ₆₆ ·	R·	RH	Rδ·	R ₆₆ ·	(?) DCMP	(*) RCMB	(\\$) MISC
CH ₂ =C=C(CH ₃) ₂ CH ₃ CH ₂ CH ₂ CH=CH ₂ cis- or trans-CH ₃ CH ₂ CH=CHCH ₃ (CH ₃) ₂ C=CHCH ₃	59											
		59	59	59	60							
			59	59	60							
			59	59	60							
CH ₃ CH ₂ C(CH ₃)=CH ₂ (CH ₃) ₂ CHCH=CH ₂ CH ₃ CH ₂ CH ₂ CH(·)CH ₃ (CH ₃) ₂ CHCH ₂ CH ₂ · or (CH ₃) ₂ CHCH(·)CH ₃ or (CH ₃) ₂ C(·)CH ₂ CH ₃				59	60							
				60								
			60									
(CH ₃) ₃ CCH ₂ · CH ₃ CH ₂ CH ₂ CH ₂ CH ₃ (CH ₃) ₂ CHCH ₂ CH ₃ (CH ₃) ₄ C		60		60								
		60	60		61	61						
			60	61		61						
CH ₃ CH ₂ C(δ)CH ₂ CH ₃ (CH ₃) ₃ CCH ₃ CH ₃ CH=CH(66H)CH ₃ (CH ₃) ₂ C(δ·)CH ₂ CH ₃		61								61	62	62
		61										
(CH ₃) ₃ CCH ₂ δ· (CH ₃) ₂ C(·)CH ₂ δCH ₃ CH ₃ δCH(CH ₃)CH(·)CH ₃ (CH ₃) ₂ C(δ·)CH ₂ CH ₃			62							62		
			62									
CH ₃ CH ₂ CH ₂ CH(66-·)CH ₃ or CH ₃ CH ₂ CH(66·)CH ₂ CH ₃ (CH ₃) ₂ C(δ·)CH ₂ δCH ₃ CH ₃ δCH(CH ₃)CH(δ·)CH ₃ ·CH ₂ C(CH ₃) ₂ CH ₂ δδH				62						62	62	62
				62								
(CH ₃) ₃ CCH ₂ δδ· CH ₃ CH(·)CH ₂ CH(δδH)CH ₃ CH ₃ δδCH(CH ₃)CH(·)CH ₃ (CH ₃) ₂ C(·)CH ₂ δδCH ₃			62							62		
			62									
				63								

(?) Decomposition
(*) Disproportionation and/or Recombination
(\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₅ COMPOUNDS Cont'd.

- (?) Decomposition
- (*) Disproportionation and/or Recombination
- (\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₆ COMPOUNDS

REACTING HYDROCARBON SPECIES	ATTACKING MOLECULE OR RADICAL		θ	θ ₂	θ ₃	OH	HO [•]	R [•]	RH	Rθ [•]	Rθ [•]	(?) DCMP	(*) RCMB	(\$)	MISC
	θ	θ ₂													
CH ₃ CH=C=C(CH ₃) ₂	64														
CH ₂ [•] CHCH ₂ CH ₂ CH=CH ₂		64													
CH ₃ CH ₂ CH ₂ CH ₂ CH=CH ₂	64	64	64												
(CH ₃) ₂ C=C(CH ₃) ₂	64		65	65											
cis- or trans-CH ₃ CH ₂ CH ₂ CH=CHCH ₃	64	64													
CH ₃ CH ₂ CH ₂ C(CH ₃)=CH ₂			64												
(CH ₃) ₂ CHCH ₂ CH=CH ₂			64												
cis- or trans-(CH ₃) ₂ CHCH=CHCH ₃			64												
cis- or trans-CH ₃ CH ₂ C(CH ₃)=CHCH ₃			65												
CH ₃ CH ₂ CH(CH ₃)CH=CH ₂			65												
CH ₃ CH ₂ CH ₂ C(•)(CH ₃) ₂			65												
(CH ₃) ₂ CHC(•)(CH ₃) ₂			65												
or (CH ₃) ₂ CHCH(CH ₃)CH ₂ •															
CH ₃ (CH ₂) ₄ CH ₃	65	65	66												
(CH ₃) ₂ CHCH ₂ CH ₂ CH ₃			65												
(CH ₃) ₂ CHCH(CH ₃) ₂	65	66	66												
(CH ₃ CH ₂) ₂ CHCH ₃	66	66	66												
(CH ₃) ₃ CCH ₂ CH ₃															
CH ₃ CH ₂ CH ₂ C(CH ₃) ₂ θ [•]			66												
(CH ₃) ₂ CHC(CH ₃) ₂ θ [•]															
(CH ₃) ₃ CC(•)(CH ₃)θH															
CH ₃ CH ₂ CH ₂ CH ₂ CH(θθ [•])CH ₃															
or CH ₃ CH ₂ CH ₂ CH(θθ [•])CH ₂ CH ₃															
CH ₃ CH ₂ CH ₂ C(CH ₃) ₂ θθ [•]															
(CH ₃) ₂ CHC(CH ₃) ₂ θθ [•]															
CH ₃ CH(θθH)CH ₂ CH(•)CH ₂ CH ₃															
(CH ₃) ₂ C(θθH)C(•)(CH ₃) ₂															
or (CH ₃) ₂ C(θθH)CH(CH ₃)CH ₂ •															
(CH ₃) ₂ CHθCH(CH ₃) ₂	67														
(CH ₃) ₂ C(θθH)CH ₂ CH ₂ CH ₃															
(CH ₃) ₂ C(θθH)CH(CH ₃) ₂															
CH ₃ CH ₂ CH ₂ θθCH ₂ CH ₂ CH ₃															
(CH ₃) ₂ CHθθCH(CH ₃) ₂			67												

(?) Decomposition

(*) Disproportionation and/or Recombination

(\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₇ COMPOUNDS

- (?) Decomposition
- (*) Disproportionation and/or Recombination
- (\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
C₈ COMPOUNDS

REACTING HYDROCARBON SPECIES ATTACKING MOLECULE OR RADICAL												
	6	6 ₂	6 ₃	6H	66·	R·	RH	R6·	R66·	(?) DCMF	(*) RCMB	(\\$) MISC
(CH ₃) ₂ C=CHCH=C(CH ₃) ₂ CH ₃ (CH ₂) ₅ CH=CH ₂ (CH ₃) ₂ CHCH=CHCH(CH ₃) ₂ CH ₃ (CH ₂) ₆ CH ₂ · or CH ₃ (CH ₂) ₅ CH(·)CH ₃ or CH ₃ (CH ₂) ₄ CH(·)CH ₂ CH ₃ or CH ₃ (CH ₂) ₃ CH(·)(CH ₂) ₂ CH ₃		70	70		70							
(CH ₃) ₃ CCH ₂ CH(CH ₃)CH ₂ · or (CH ₃) ₃ CCH ₂ C(·)(CH ₃) ₂ or (CH ₃) ₂ CCH(·)CH(CH ₃) ₂ or :CH ₂ C(CH ₃) ₂ CH ₂ CH(CH ₃) ₂ (CH ₃) ₃ CC(CH ₃) ₂ CH ₂ CH ₃ (CH ₂) ₆ CH ₃ CH ₃ (CH ₂) ₃ CH(CH ₃)CH ₂ CH ₃				70								
(CH ₃) ₂ CHCH ₂ CH ₂ CH(CH ₃) ₂ (CH ₃) ₃ CCH ₂ CH(CH ₃) ₂ (CH ₃) ₂ CHCH(CH ₃)CH(CH ₃) ₂ (CH ₃) ₃ CC(CH ₃) ₃	70	70	70	71								
(CH ₃) ₃ CCH ₂ C(CH ₃) ₂ 66H (CH ₃) ₃ C66C(CH ₃) ₃		71								71	71	

(?) Decomposition

(*) Disproportionation and/or Recombination

(\\$) Miscellaneous reactions

SYNOPTIC TABLE OF CONTENTS
 C_9 COMPOUNDS

ATTACKING MOLECULE OR RADICAL REACTING HYDROCARBON SPECIES	θ	θ_2	θ_3	θH	$H\theta\theta\cdot$	$R\cdot$	RH	$R\theta\cdot$	$R\theta\theta\cdot$	(?) DCMP	(*) RCMB	(\\$) MISC
$CH_3(CH_2)_6CH=CH_2$		72										
$CH_3(CH_2)_7CH_3$		72										
$(CH_3)_2CH(CH_2)_5CH_3$		72										
$CH_3CH_2CH(CH_3)CH_2(CH_2)_3CH_3$		72										
$CH_3(CH_2)_2CH(CH_3)CH_2(CH_2)_2CH_3$		72										
$(CH_3)_3CCH_2CH_2CH(CH_3)_2$		72										
$(CH_3CH_2)_2CH(CH_2)_3CH_3$		72										
$(CH_3CH_2CH_2)_2CHCH_2CH_3$		72										

C_{10} COMPOUNDS

$CH_3(CH_2)_7CH=CH_2$		73	73								73	
$CH_3(CH_2)_8CH_3$		73										
$(CH_3)_2CH(CH_2)_4CH(CH_3)_2$		73										
$CH_3(CH_2)_4\theta\theta(CH_2)_4CH_3$											73	
$(CH_3)_2C(CH_2CH_3)\theta\theta(CH_3CH_2)C(CH_3)_2$											73	

(?) Decomposition

(*) Disproportionation and/or Recombination

(\\$) Miscellaneous reactions

CHEMICAL KINETICS OF THE GAS PHASE COMBUSTION OF FUELS

[A bibliography on the rates and mechanisms of oxidation of aliphatic C₁ to C₁₀ hydrocarbons and of their oxygenated derivatives]

FRANCIS WESTLEY

A reaction oriented list of references is provided for papers and reports containing rate data for gas phase reactions of combustion and oxidation of aliphatic saturated or unsaturated C₁ to C₁₀ hydrocarbons, alcohols, aldehydes, ketones, ethers, peroxides and their free radicals. The list also includes decomposition, disproportionation, atom transfer and recombination reactions of the oxygen containing species noted above. Pyrolytic reactions of hydrocarbons and their radicals are excluded. All the processes listed here have been reported to occur in the gas phase combustion of fuels. In addition, a list of critical reviews dealing with the reaction kinetics of the above processes and a list of papers dealing with generalized mechanisms of the same reactions are also included. More than 800 papers covering 540 reactions are listed. The period covered extends from 1902 through June 1975.

Keywords: Bibliography; chemical kinetics; combustion; free radicals; gas phase; hydrocarbons; oxidation; oxygen; oxygenated organic compounds; ozone.

INTRODUCTION

This bibliography lists papers and reports on the reaction kinetics of oxidation and combustion of aliphatic C₁ to C₁₀ hydrocarbons, their oxygenated derivatives, and their free radicals. In addition, the reactions of decomposition, disproportionation, or recombination of the oxygenated molecules or free radicals are included. The material is presented in two ways: 1). by reaction, listing each pertinent article, and 2). a general reference list, arranged alphabetically by first author.

The articles have been selected from the files of the Chemical Kinetics Information Center. The criterion for inclusion of an article is that there must be some new information on the reaction. That is, simple quotations of the published results of others and ad hoc guesses have been excluded. There are gray areas, such as the statement of a rate calculated from that of the reverse reaction and the equilibrium constant, or mechanistic information. If the information seemed to be important the reference was included.

The reactions listed here are those reported in the papers. There has been no attempt to reinterpret the data. This becomes important because many of the elementary reactions listed are postulated steps in mechanisms used to interpret complex experimental phenomena. Various authors use different mechanisms; the fashion changes with time.

The reaction kinetics study of hydrocarbon combustion has occupied chemists since the early years of the 20th century. The paper published by Bone and Wheeler in 1902 under the title: "The Slow Oxidation of Methane at Low Temperature," was probably the first attempt to study the kinetics of hydrocarbon combustion¹). A more concerted effort in that direction was undertaken by Hinshelwood and co-workers who, in 1929, studied the oxidation kinetics of ethylene²), and one year later, the simultaneous oxidation of methane, methanol, and formaldehyde³).

The important contributions made by Norrish over a period of more than 30 years, from the nineteen thirties into the sixties, gave great impetus to the study of hydrocarbon oxidation kinetics. In 1934, in a paper studying the reaction of methane and oxygen sensitized by nitrogen dioxide, he showed for the first time that this reaction is based on a chain mechanism⁴). In the following years Norrish extended the oxidation studies to ethane and ethylene and, on the basis of the same chain mechanism, developed a theory of the combustion of hydrocarbons⁵), expanded it to include

the phenomenon of degenerate branching^{6,7)}, investigated the effect of surfaces and catalysts on the hydrocarbon oxidation^{7,8)}, proposed a generalized mechanism and reaction kinetics for the oxidation of hydrocarbons^{9,12,14)}, used conventional¹⁰⁾, flash photolysis and kinetic spectroscopy¹³⁾ techniques to investigate the oxidation and combustion of formaldehyde¹⁵⁾, studied the effect of light on the combustion of hydrocarbons^{11,13)} and suggested a detailed free-radical mechanism for the gas phase oxidation of n-butenes¹⁴⁾.

During the nineteen fifties and sixties, as well as in more recent years, studies on the reaction kinetics of hydrocarbon combustion and oxidation have been carried on all over the world. Nowadays the interest in kinetics of hydrocarbon combustion is continuing and, as a result of the world energy crisis, has increased considerably.

For these reasons the editor hopes that this bibliography, by summing up what has been done in the field of C₁ to C₁₀ hydrocarbon combustion and oxidation kinetics, will make it possible to establish-by difference-what remains to be done in this field, so important for the use of energy from fossil fuels. In fact, a cursory examination of the synoptic tables of contents (pages v-xvii of this bibliography) indicates that, while methane and ethane combustion reactions have been thoroughly studied, the elementary steps taking place in the combustion of C₃ to C₆ hydrocarbons have been less thoroughly investigated. For the C₇ and higher hydrocarbons the information is meager and much remains to be done.

The number of elementary reactions that might occur in the oxidation of hydrocarbons is very large. Engleman has estimated that well over 1000 have to be considered in the combustion of methane in air¹⁶⁾. A rough but probably conservative guess for the C₁ to C₁₀ hydrocarbon set is more than 10,000 reactions. In contrast, measurements on approximately 540 processes are covered in this bibliography. To what extent and how this gap can be closed should be of concern to combustion kineticists.

There is a closely related field that is not covered in this bibliography: the non-oxidative pyrolysis of hydrocarbons. Allara¹⁷⁾ has estimated that the elementary processes occurring in the pyrolysis of a hydrocarbon are of the order of thousands. The reader interested in this subject should consult the excellent report of Allara and the book of tables published by Benson and O'Neal¹⁸⁾.

It is believed that this bibliography provides extensive coverage of the available experimental work on the kinetics of hydrocarbon oxidation. The 806 references indexed here span all stages of kinetics studies related to combustion. But no claim is made that this bibliography is all-inclusive. Our past experience in the preparation of bibliographies^{19,20,21,22)} covering the entire time span of kinetics research, seventy years or more, has taught us that it is virtually impossible to identify and obtain every paper or to summarize correctly every paper that has been retrieved. The author will welcome suggestions for additions and corrections of errors and thanks the contributors in advance.

This bibliography is not the result of the effort of a single person, but of the whole staff of Chemical Kinetics Information Center. My thanks to all of them.

In particular, I wish to thank Dr. David Garvin, Chief of the Chemical Process Data Evaluation Section and Director of the Center, and Dr. Robert F. Hampson for their more than helpful suggestions and constant guidance; Dr. William H. Evans for his thorough editing and proofreading of the manuscript; Mr James G. Koch, Supervisor, for tracking down and obtaining papers and reports very difficult to obtain; Mrs. Geraldine Zumwalt and Miss Darlene Connelly, for typing a difficult manuscript with particular care.

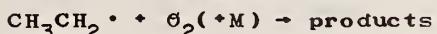
Guidelines for the user

Arrangement of the report. This bibliography is in three parts:
Part I. Synoptic Tables of Reactions
Part II. Reactions of Aliphatic Hydrocarbon Combustion and Oxidation with citations
Part III. The bibliography for part II, arranged alphabetically by authors. The complete reference citation for each article mentioned is given here. Occasionally explanatory notes are appended. These establish the "bibliography chain" for closely related papers by the same author.

Parts I and II are arranged by reaction, following the order indicated below. A list of critical reviews or surveys and a list of papers dealing with generalized mechanisms and reaction kinetics are included at the end of part II.

Use of the synoptic tables of reactions. Part I is simply a table of contents arranged for quick location of the number of the page on which a certain reaction can be found. The 540 reactions listed in part II are condensed and grouped in the 10 synoptic tables of part I according to the number of carbon atoms of the reacting organic species (hydrocarbon or oxygenated derivative). Column 1 of each synoptic table lists the reacting organic species in the same order as in part II of the bibliography. The headings of columns 2 to 10 indicate the reaction partner or atom, molecule or radical, in the order θ , θ_2 , θ_3 , θH , $\text{H}\theta\theta^{\bullet}$, R^{\bullet} , RH , $\text{R}\theta^{\bullet}$, $\text{R}\theta\theta^{\bullet}$, where R may be any aliphatic alkyl group. Columns 11 and 12, respectively, indicate decomposition, and disproportionation or recombination of the species listed in column 1. Column 13 indicates a process that cannot fit in any of the preceding columns. Only a small number of such processes are included in the bibliography.

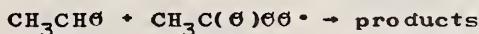
The following examples show how to use the synoptic tables:



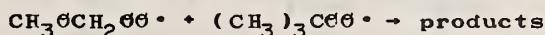
Since the synoptic tables do not indicate the presence or absence of a third body, the above letter M is omitted. The reaction is found in the C_2 Hydrocarbons table at the page number indicated by intersection of the horizontal line corresponding to $\text{CH}_3\text{CH}_2^{\bullet}$ with column 3 (Heading θ_2). The page number found in that way is 32:



This reaction is found in the C_2 Hydrocarbon table at the page number indicated by intersection of the horizontal line corresponding to $\text{CH}_3\text{CH}\theta$ with column 11 (decomposition). The corresponding page number is 36.



The page number for this reaction is found in the C_2 Table at the intersection of $\text{CH}_3\text{CH}\theta$ horizontal line with column 13 (miscellaneous reactions). The page number is 37. This reaction is one of the few reactions which can be found in two different places of the Synoptic tables. Interchanging the two reactants gives: $\text{CH}_3\text{C}(\theta)\theta\theta^{\bullet} + \text{CH}_3\text{CH}\theta \rightarrow \text{products}$. Thus, at the intersection of the $\text{CH}_3\text{C}(\theta)\theta\theta^{\bullet}$ horizontal line with column 13 (miscellaneous reactions) the same page number is found.



The two peroxy radicals, $\text{CH}_3\theta\text{CH}_2\theta\theta^{\bullet}$ and $(\text{CH}_3)_3\text{C}\theta\theta^{\bullet}$, are not listed among the headings indicating the attacking species, but the general peroxy radical $\text{R}\theta\theta^{\bullet}$ is the heading of column 10. Therefore, the page number of this reaction is found in table II at the intersection of the $\text{CH}_3\theta\text{CH}_2\theta\theta^{\bullet}$ horizontal line with column 10 ($\text{R}\theta\theta^{\bullet}$). The page number is 39.

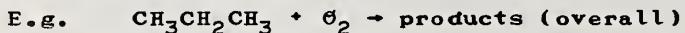
If the reactants for a reaction cannot be located in any line or column of any Table, it means that the reaction is not included in the bibliography.

Ordering of chemical reactions. Parts I and II of this bibliography list unimolecular, bimolecular, and termolecular reactions occurring in

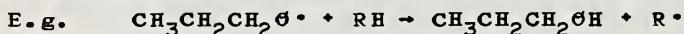
combustion and oxidation of aliphatic C_1 to C_{10} hydrocarbons and unimolecular reactions of their oxygenated derivatives.

The largest group of reactions listed in Parts I and II consists of bimolecular reactions. In most of these processes the reaction takes place between a reacting hydrocarbon molecule (or radical) and an attacking species, which might be either an oxygen species (Θ , Θ_2 , Θ_3) or an oxidizing radical (ΘH , $H\Theta\Theta^*$, $R\Theta^*$, $R\Theta\Theta^*$). The only unoxygenated attacking group, the radical R^* , appears in reactions with oxygenated species.

The reacting hydrocarbon molecule or radical is displayed first, being followed by the attacking species:



One exception to this rule is the case of a reacting species designated by a general symbol, as RH , (where RH is any aliphatic hydrocarbon), while the attacking species is a specific oxygenated hydrocarbon radical. Since the number of carbon atoms of the reacting hydrocarbon RH cannot be determined, while that of the attacking radical can, the order of the two species is reversed and the oxygenated radical is displayed first.



Likewise in the synoptic tables, the general aliphatic hydrocarbon RH appears as the heading of column 8, while the specific oxygenated radical is listed in column 1.

There is also the case of a bimolecular reaction where either species may be regarded as the attacking one.



In such a case the reaction is listed a second time with the two species in reversed order:



(In this case, it is more correct to say that the two reactants are interacting species, rather than naming these respectively reactant and attacking species.)

The general rule for ordering the reactions listed in this bibliography is the standard order of arrangement as described in NBS Technical Note 270-3 pp. 5, 6, and 223).

Thus, Part II of this bibliography is divided into 10 sub-groups, C_1 to C_{10} according to the number of C atoms of the first reactant displayed at the left of each reaction, which is always an aliphatic species. Each subgroup of Part II corresponds to one of the synoptic C_1 to C_{10} tables included in Part I. In each of these subgroups, the reactions with first reactants including only C and H atoms are displayed first according to the increasing number of H atoms. Thus, in the C_1 subgroup the order of the first reactants, at the left of each reaction, is: CH , $:CH_2$, CH_3^* , CH_4 .

Likewise, in the C_2 subgroup the order of the first reactants is: $CH=C^*$, $CH=CH$, $CH_2=CH^*$, CH_2CH_2 , $CH_3CH_2^*$, CH_3CH_3 .

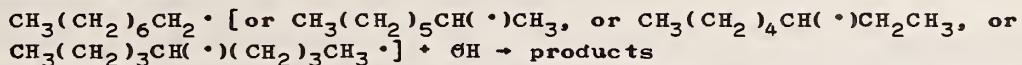
Following the reactions whose first reactants include only C and H atoms are listed the reactions whose first reactants include Θ atoms, in additions to C and H. The order is first by increasing number of H atoms, then, if two species have the same number of H atoms, by increasing number of Θ atoms.

Reactions in which the same species reacts with different molecules or radicals are arranged in a sequence depending on these molecules or radicals. According to the above mentioned standard order of arrangement²³, oxygen takes preference over hydrogen, and hydrogen takes preference over carbon. Therefore the sequence of the second species is Θ , Θ_2 , Θ_3 , H , H_2 , ΘH , $H\Theta\Theta^*$,

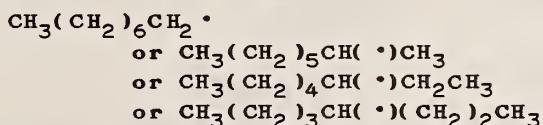
oxygenated species ($\cdot\text{CH}_3$, $\text{HCO}\cdot$, $\text{HCH}\cdot$, $\text{CH}_3\text{O}\cdot$). Generalized hydrocarbon species ($\text{R}\cdot$, RH , $\text{R}\text{O}\cdot$, $\text{R}\text{O}\text{O}\cdot$) are last. (R represents any alkyl radical).

Decomposition reactions of a single compound precede the reactions of the same compound with other species. The generalized second (or third) body M , always in parentheses, is disregarded when placing a reaction in its proper sequence.

Reactions of isomeric compounds with the same reactant are listed one after another. No attempt was made to establish a rule for ordering these reactions. When isomeric hydrocarbon radicals occur during the combustion of the parent hydrocarbon, the reactions of these radicals are condensed into a unique reaction. For instance, in the combustion of n-octane, one primary and three secondary n-octyl free radicals are formed; their reactions with OH are listed as follows:

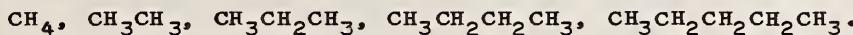


These n-octyl free radicals are listed in the column of C_8 Synoptic Table in Part I, as follows:

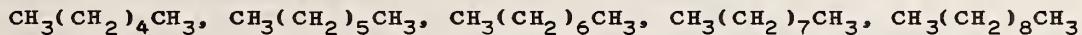


Display of Chemical Reactions and Formulae

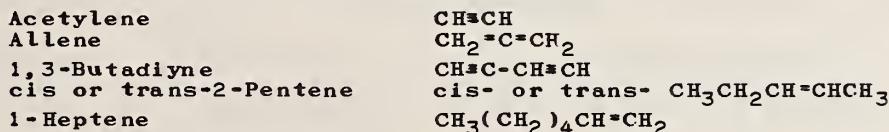
Straight chain hydrocarbons. All saturated normal hydrocarbons, up to, and including n-pentane, are written in the usual way, showing separately each methyl and methylene group in the chain:



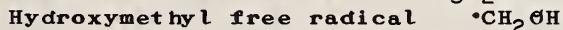
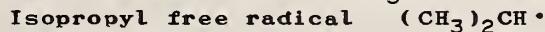
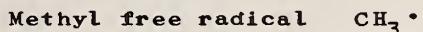
The higher hydrocarbons, from n-hexane to n-decane, are written in a more condensed form to facilitate the counting of the number of methylene groups in the chain:



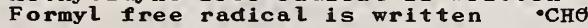
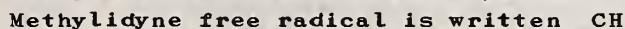
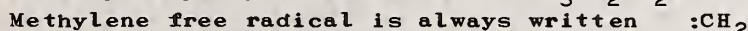
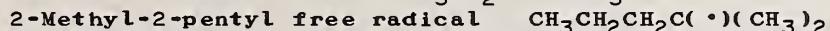
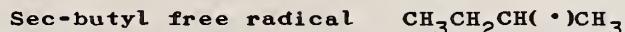
The unsaturated hydrocarbons are written so as to show the position of each double or triple bond in the molecule. E.g.:



Alkyl radicals. The unpaired electron of each alkyl radical is always indicated. E.g.:



If the unpaired electron of an alkyl radical belongs to a carbon atom in the middle of the chain, it is indicated inside a parenthesis following the carbon atom. E.g.:



Oxy-free-radicals. If the oxygen atom of an oxy radical is attached to the terminal C atom, the radical is written in the usual manner: $\text{CH}_3\text{O}\cdot$.

If the oxygen atom of the oxy radical is attached to a C atom in the middle

of the chain, then the oxygen atom, together with the unpaired electron are inside a parenthesis following the C atom: $(\text{CH}_3)_2\text{C}(\text{O}^\bullet)\text{CH}_2\text{CH}_3$.

If a dioxy diradical has the two oxygen atoms attached to the same carbon, it is written: $\text{CH}_2(\text{O}^\bullet)_2$.

Peroxo-free-radicals. The rules for writing peroxy free radicals are the same as for the oxy-free-radicals: $\text{CH}_3\text{OO}^\bullet$, $\text{CH}_3\text{OCH}_2\text{CH}(\text{OO}^\bullet)\text{CH}_3$, and $\text{CH}_2(\text{OO}^\bullet)_2$.

Inorganic free radicals.

Oxygen atom is written O

Hydroxyl free radical is written OH

Hydroperoxy free radical is written HO₂•

Reference Citation

The citations under each reaction list the author(s) and the sources, in the following form:

Author(s)	Source-Year-Volume-Page	Number of Author(s)
Niki, H.	JCPA6-1966-45-2330	1
Niki and Weinstock	JCPA6-1966-45-3468	2
Niki, et al.	JCPA6-1968-48-5729	3 or more

Variations from this format (which we will call "short reference") are usually in the direction of more explicit specification. These variations are never made in the first two fields, source and year. These are fixed and always present.

The sources are indicated by their ASTM CODEN abbreviations*. A guide to these codes follows. As listed in this guide, the codes include an additional sixth cipher, which is a "check character"**.

*) Blumenthal, J. G., Karaman, M., and Peters, A., Editors, "CODEN FOR PERIODICAL TITLES" (Including Non-Periodical Titles and Deleted Coden), Vol. I and II, ASTM Data Series DS 23B, (1970); First Supplement DS 23B - S1 (05-023021-42) (1972); Second Supplement DS 23B - S2 (05-023022-42) (1974); (American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19203). "Chemical Abstracts Service Source Index (CASSI), 1907-1974 Cumulative" (Chemical Abstract Service, Columbus, OH 43210); Annual Cumulative Supplement, 1975.

**) The final sixth character in the journal coden is a "check character". This is not shown in the listings in ASTM DS 23B, DS 23B-S1 and DS 23B-S2. The sixth character is given is CASSI.

JOURNAL AND REPORT CODEN IDENTIFICATIONS

ACASA2	Acta Chimica Academiae Scientiarum Hungaricae
ACMGAG	American Chemical Society Monograph Series
ACPCAT	American Chemical Society, Division of Petroleum Chemistry, Preprints
ACPYAR	Acta Physicochimia URSS
ACSRAL	American Chemical Society, Abstracts of Papers
ADCSAJ	Advances in Chemistry Series
ADPCA2	Advances in Photochemistry
AESTC9	Advances In Environmental Science and Technology
AGAGAS	AGARDograph. Advisory Group for Aerospace Research and Development, North Atlantic Treaty Organization, Brussels, Belg., AGARDograph
AIAJAH	A.I.A.A. Journal (American Institute of Aeronautics and Astronautics)
AICEAC	A.I.Ch.E. Journal (American Institute of Chemical Engineers)
AJCHAS	Australian Journal of Chemistry
ANCEAD	Angewandte Chemie
APCSC3	Archiwum Procesow Spalania
ARPCAW	Annual Reports on the Progress of Chemistry. Chemical Society of London
ASACAW	Astronautica Acta
AYKZAN	Armianskii Khimicheskii Zhurnal
AZKZAU	Azerbaijzhanskii Khimicheskii Zhurnal
BACCAT	Bulletin of the Academy of Sciences of the U.S.S.R., Division of Chemical Science. (Transl. of Izvestiya Akademii Nauk, Seriia Khimicheskaiia)
BBPCAX	Berichte der Bunsengesellschaft fuer physikalische Chemie
BCSJAS8	Bulletin of the Chemical Society of Japan
BICRAS	Bulletin of the Institute for Chemical Research, Kyoto University
BJSEA8	Bulletin of J.S.M.E. (Japan Society of Mechanical Engineers)
BOOKA7	Book
BSCBAG	Bulletin des Societes Chimiques Belges
BSCFAS	Bulletin de la Societe Chimiques de France
CBFMA6	Combustion and Flame
CBSTB9	Combustion Science and Technology
CCGMA8	Chemical Communications (London)
CESCAC	Chemical Engineering Science
CESWA4	Combustion, Explosion and Shock Waves (Transl. of Fizika Gorenija Vzryva)
CHDCAO	Compte Rendus Hebdomadaires de Seances de l'Academie des Sciences (Paris). Serie C. Sciences Chimiques

CHPLBC	Chemical Physics Letters
CHREAY	Chemical Reviews
CHTEAA	Chemische Technik
CINMAB	Chimica e l'Industria
CJCHAG	Canadian Journal of Chemistry
CMSHAP	Chemosphere
CØREAF	Academie des Sciences. Comptes Rendus Hebdomadaires des Seances (Paris)
DABBBA	Dissertation Abstracts International, B. The Sciences and Engineering
DANAAW	Doklady Akademii Nauk Armianskoi S.S.R.
DANKAS	Doklady Akademii Nauk S.S.S.R.
DBGGAM	Dopovidi Akademii Nauk Ukrainskoi Seriya B. Geolog. Geofizike, Khimiya ta Biolog.
DFSGAW	Discussions of the Faraday Society
DIASA9	Dissertation Abstracts
DKCHAY	Doklady Chemistry (Transl. from Doklady Akademii Nauk SSSR)
DKPCAG	Doklady Physical Chemistry (Transl. from Doklady Akademii Nauk SSSR)
EKEPAB	Erdoel und Kohle, Erdgas, Petrochemie
EPTSBT	Environmental Protection Technology series
ESTHAG	Environmental Science and Technology
EVLTAX	Environmental Letters
FDCSB7	Faraday Discussions of the Chemical Society (London)
FGVZA7	Fizika Gorenija i Vzryva
FUELAC	Fuel
GPENAS	Gospodarka Paliwami i Energia
HHHPA4	Hua Hsueh Hsueh Pao (Journal of Chemistry)
HIECAP	High Energy Chemistry (Transl. of Khimia Vysokikh Energii)
IARKAZ	Izvestiya Akademii Nauk Armianskoi S.S.R., Khimicheskie Nauki
ICBEAJ	Industrie Chimique Belge
IECHAD	Industrial and Engineering Chemistry
IEPDAW	Industrial and Engineering Chemistry, Process Design and Development
IGNKBO	Ispol'zovanie Gaza v Narodnom Khoziaistve (Saratov)
IJCKBØ	International Journal of Chemical Kinetics
IJGTAS	Indian Journal of Technology
IUZTA4	Izvestiya Akademii Nauk Uzbekskoi S.S.R., Seriya Tekhnicheskikh Nauk (Tashkent)
IVZEAY	Izvestiya Vysshikh Uchebnykh Zavedenii, Energetika
JACSAT	Journal of the American Chemical Society
JAPUAW	Journal of Applied Chemistry of the U.S.S.R. (Transl. of Zhurnal Prikladnoi Khimii)

JCCCCAT	Journal of the Chemical Society, Chemical Communications
JCFTAR	Journal of the Chemical Society, Faraday Transaction I
JCPBAN	Journal de Chimie Physique et de Physico-Chimie Biologique
JCPSA6	Journal of Chemical Physics (New York)
JCSG9	Journal of the Chemical Society
JCSIAP	Journal of the Chemical Society A. Inorganic, Physical, Theoretical
JCSPAC	Journal of the Chemical Society B. Physical Organic
JETAAK	Journal of the Faculty of Engineering, University of Tokyo, Series A. Annual Report
JLUMA8	Journal of Luminescence
JOCCEAH	Journal of Organic Chemistry
JOCYA9	Journal of Organic Chemistry of the USSR (Transl. of Zhurnal Organicheskoi Khimii)
JPCEAG	Journal fuer praktische Chemie
JPCHAX	Journal of Physical Chemistry
JPCRBW	Journal of Physical and Chemical Reference Data
KGKZA7	Kogyo Kagaku Zasshi
KICAA8	Kinetics and Catalysis (Transl. of Kinetika i Kataliz)
MDPCAW	Memoirs of the Defense Academy, Mathematics, Physics, Chemistry and Engineering
NATUAS	Nature
NBTNAE	U.S. National Bureau of Standards, Technical Note
NEFTAH	Neftekhimiya
NENKAU	Nenryo Kyokai-Shi
NSRDAP	U.S. National Bureau of Standards. National Standards Reference Data Series
OXCRA4	Oxidation and Combustion Reviews
PAKBAG	Primshlennost Armenii
PECHAM	Petroleum Chemistry USSR (Transl. of Neftekhimiya)
PHZSAL	Physikalische Zeitschrift der Sowjetunion
PLSAAE	Planetary and Space Science
PRKNAZ	Progress in Reaction Kinetics
PRLAAZ	Proceedings of the Royal Society, Series A. Mathematical and Physical Sciences
PSIRAA	Pakistan Journal of Scientific and Industrial Research
PTPTAG	Problemy Teploenergetiki i Prikladnoi Teplofiziki (Alma-ata)
QUREA7	Quarterly Reviews (London)
RCBUAU	Revista de Chimie (Bucharest)
RCTEA4	Rubber Chemistry and Technology
REKIDM	Reaction Kinetics (Specialist Periodical Reports) Chem. Soc. (London)
RIFPA9	Revue de l'Institut Francais du Petrole et Annales des Combustibles Liquides

RJPCAR	Russian Journal of Physical Chemistry (Transl. of Zhurnal Fizicheskoi Khimii)
RPCAAW	Reviews of Pure and Applied Chemistry
RTCPA3	Recueil des Travaux Chimiques des Pays-Bas
RZKHAR	Referativnyi Zhurnal, Khimiya
RZTEAT	Referativnyi Zhurnal, Teploenergetika
SVCIA7	Soviet Chemical Industry (Transl. of Khimicheskaiia Promyshlennost)
SYMCAQ	Symposium (International) on Combustion [Papers] (Pittsburgh)
TETRAB	Tetrahedron
TFSGA4	Transaction of the Faraday Society
TPGVA7	Trudy Instituta i Proizvodstvennyi Sbyt, Vsesoiuznyi Nauchno-Issledovatel'skii Institut Ispol'zovaniia Gasa v Narodnom Khoziaistve, Podzemnogo Khranenia Nefti, Nefteproduktov i Szhizhennykh Gazov "Vniipromgas" (Moscow)
TPSGAG	Teoriya i Praktika Szhiganiya Gaza (Leningrad)
USFGA7	Uspekhi Fotoniki (Leningrad)
UYTIAX	Uchenye Zapiski Yaroslavskogo Tekhnologicheskogo Instituta
WSCPAH	Western States Section, Combustion Institute
WZTLA3	Wissenschaftliche Zeitschrift der Technischen Hochschule fuer Chemie "Carl Schorlemmer" Leuna-Merseburg
XADRCH	United States National Technical Information Service, AD Report
ZENAAU	Zeitschrift fuer Naturforschung, Teil A. Astrophysik, Physik und physikalische Chemie (Tuebingen, German)
ZFKHA9	Zhurnal Fizicheskoi Khimii
ZPCFAX	Zeitschrift fuer physikalische Chemie (Frankfurt am Main)
ZPCLAH	Zeitschrift fuer physikalische Chemie (Leipzig)
11RFAO	Problemy Okisleniia Uglevodorodov, Doklady Vsesoiuznoe Soveshchanie po Voprosam Okisleniia Uglevodorodov, (Moscow, 1951)
18VHAX	Voprosy Khimicheskoi Kinetiki, Kataliza, i Reaktsionnoi Sposobnosti; Doklady k Vsesoiuznomu Soveshchaniyu po Khimicheskoi Kinetike i Reaktsionnoi Otdelenie Khimicheskikh Nauk Sposobnosti. 1955
21RAAM	Uspekhi Khimii Organicheskikh Perekisnykh Soedinenii i Autookisleniia, Doklady na Vsesoiuzniu Konferentsii po Sintezu, Issledovaniyu i Primeneniu Organicheskikh Perekisei, 3rd, Lvov, 1965 (1969)
23ASA5	Voprosy Teorii Gorenija, Trudy Obshchekhovskogo Seminara po Teorii Gorenija, 1970
250IAZ	Chemical Reactions in Urban Atmospheres, Proceedings of the Symposium, General Motors Research Laboratories, Warren Michigan, October 6-7, 1969
26JGAP	Gorenje i Vzryv, Materialy Vsesoiuznogo Simpoziuma po Goreniju i Vzryvu, 3rd, Leningrad, U.S.S.R., July 5-10, 1971 (Pub. 1972)
27PGA4	Materialy Soveshchaniia po Mekhanizmu Ingibirovaniia Tsepnykh Gazovykh Reaktsii, 1st, Kazakhskii Gosudarstvennyi Universitet, Alma-ata, July 22-27, 1970 (Pub. 1971)
28KMA4	Problemy Kinetiki Elementarnykh Khimicheskikh Reaktsii, Doklady Konferentsii po elementarnym Khimicheskim Reaktsiyam, Moscow, 1972 (Pub. 1973)

REFERENCES CITED IN THE INTRODUCTORY MATERIAL

1. Bone, W. A., and Wheeler, R. V., "The Slow Oxidation of Methane at Low Temperature," *J. Chem. Soc.* 81, 535 (1902)
2. Thompson, H. W., and Hinshelwood, C. N., "The Kinetics of the Oxidation of Ethylene," *Proc. Roy. Soc. (London)* A 125, 277 (1929)
3. Fort, R., and Hinshelwood, C. N., "Further Investigations on the Kinetics of Gaseous Oxidation Reactions," *Proc. Roy. Soc. (London)* A 129, 284 (1930)
4. Norrish, R. G. W., and Wallace, J., "The Reaction of Methane and Oxygen Sensitized by Nitrogen Peroxide. Part I. Thermal Ignition," *Proc. Roy. Soc. (London)* A 145, 307 (1934)
5. Norrish, R. G. W., "A Theory of the Combustion of Hydrocarbons," *Proc. Roy. Soc. (London)* A 150, 36 (1935)
6. Norrish, R. G. W., and Foord, S. G., "The Kinetics of Combustion of Methane," *Proc. Roy. Soc. (London)* A 157, 503 (1936)
7. Norrish, R. G. W., and Reach, J. D., "The Surface as a Existing Factor in the Slow Combustion of Hydrocarbons," *Proc. Roy. Soc. (London)* A 176, 429 (1940)
8. Norrish, R. G. W., and Buckler, E. J., "Ignition Catalysis," in "Handbuch der Katalyse," Schwab, G. M., Editor, (Wien, Springer-Verlag, 1941) 385
9. Norrish, R. G. W., "Role des Aldéhydes dans l'Oxidation des Hydrocarbures," *Colloq. Int. CNRS* 16, 16 (1948); also published in: *Rev. Inst. Fr. Pet. Ann. Combust. Liq.* 4, 288 (1949)
10. Axford, D. W. E., and Norrish, R. G. W., "The Oxidation of Gaseous Formaldehyde," *Proc. Roy. Soc. (London)* A 192, 518 (1948)
11. Norrish, R. G. W., and Patnaik, D., "Effect of Light on the Combustion of Hydrocarbons," *Nature* 163, 883 (1949)
12. Norrish, R. G. W., "Evidence Relating to the Combustion of Hydrocarbons," *Discuss. Faraday Soc.* 10, 269 (1955)
13. McKellar, J. F., and Norrish, R. G. W., "The Combustion of Gaseous Aldehydes Studied by Flash Photolysis and Kinetics Spectroscopy," *Proc. Roy. Soc. (London)* A 254, 147 (1966)
14. Norrish, R. G. W., and Porter, K., "Some Features of the Gas Phase Oxidation of n-Butenes," *Proc. Roy. Soc. (London)* A 272, 164 (1963)
15. Norrish, R. G. W., and Thomas, G. M., "Oxidation of Gaseous Formaldehyde," *Nature* 210, 728 (1966)
16. Engleman, V. S., "Survey and Evaluation of Kinetic Data on Reactions in Methane/Air Combustion, Environmental Protection Technology Series Report No. EPA-600/2-76-003; (EPA, Research Triangle Park, NC 27711, 1976) 477 pages
17. Allara, D. L., "A Compilation of Kinetic Parameters for the Thermal Degradation of n-Alkane Molecules," Preprint Bell Laboratories, Murray Hill, N. J. (1975)
18. Benson, S. W., and O'Neal, H. E., "Kinetic Data on Gas Phase Unimolecular Reactions," *Natl. Std. Ref. Data Series NSRDS-NBS* 21 (1970), 645 pages
19. Westley, F., "A Bibliography of Kinetic Data on Gas Phase Reactions of Nitrogen, Oxygen, and Nitrogen Oxides, [1900-1971] CGM-71-0081, NBS-GSRDB-71-2 (1971)
20. Westley, F., "A Supplementary Bibliography of Kinetic Data on Gas Phase Reactions of Nitrogen, Oxygen, and Nitrogen Oxides," *NBS SP* 371 (1973) 79 pages
21. Westley, F., "Supplementary Bibliography of Kinetic Data on Gas Phase Reactions of Nitrogen, Oxygen, and Nitrogen Oxides (1972-1973)," *NBS SP* 371-1 (1975), 76 pages
22. Westley, F., "Chemical Kinetics of the-C-S and H-N-S Systems: A Bibliography - 1899 through June 1971," *NBS SP* 362 (1972), 62 pages
23. Wagman, D. D., Evans, W. H., Parker, V. B., Halow, I., Bailey, S. M., and Schumm, R. H., "Selected Values of Chemical Thermodynamic Properties," *NBS Techn. Note* 270-3 pgs. 5, 16, 22 (1968)

C₁ Compounds

CH + O (+M) -> CO + H (+M) [or :CHO (+M)]	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Huie and Herron	PRKNAZ-1975-8-1 (review)
Lin, M. C.	IJCKB0-1974-6-1 (mechanism)
CH + O ₂ -> CO + OH (or :CHO + O, or CO ₂ + H)	
Bowman and Seery	CBFMA0-1968-12-611 (mechanism)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Glass, et al.	SYMCAQ-1965-10-513
Lin, M. C.	IJCKB0-1974-6-1 (mechanism)
Peeters and Vinckier	SYMCAQ-1975-15-969
CH + OH -> :CHO + H (or CO + H ₂ , or :CH ₂ + O)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
CH + HCO -> products (:CHO, :CH ₂ , HCHO, ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
CH + H ₂ O -> products (:CHO, :CH ₂ , HCHO, CH ₃ *, ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
CH + :CHO -> :CH ₂ + CO	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
CH + HCHO -> :CH ₂ + :CHO	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
CH + CH ₃ O -> CH ₃ * + :CHO [or HCHO + :CH ₂ , or CH ₄ + CO]	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
CH + RO -> products (:CHO, CH ₃ *, ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
:CH ₂ + O (+M) -> products (CO, CH, HCHO, ...)	
Bradley and Tse	TFS0A4-1969-65-2685
Brown and Thrush	TFS0A4-1967-63-630
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Huie and Herron	PRKNAZ-1975-8-1 (review)
Jones and Bayes	PRLAAZ-1973-335-547
Jones and Bayes	SYMCAQ-1973-14-277
Lavrov and Evlanov	IUZTA4-1969-13-50 (review)
Williams and Smith	CHREAY-1970-70-267 (review)
:CH ₂ + O ₂ -> products (CH, HCHO, CO ₂ , ...)	
Avramenko and Kolesnikova	DANKAS-1953-89-1037
Avramenko and Kolesnikova	DANKAS-1953-91-107
Avramenko and Kolesnikova	ZFKHA9-1956-30-581
Eberius, et al.	SYMCAQ-1973-14-147 (mechanism)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Gordon and Lin	CHPLBC-1973-22-107 (related papers)
Jones and Bayes	PRLAAZ-1973-335-547
Laufer and Bass	JPCCHAX-1974-78-1344
Lavrov and Evlanov	IUZTA4-1969-13-50 (review)
Lavrov and Kiyani	TP0VA7-1969-21
Norrish and Buckler	B00KA7-1941-385 (mechanism)
Peeters and Mahnen	B00KA7-1973-53
Peeters and Vinckier	SYMCAQ-1975-15-969
Rowland, et al.	FDCSB7-1972-53-111

$\text{:CH}_2 + \text{O}_2 \rightarrow$	products (CH , HCHO , CO_2 , ...)	(Cont'd)
Russell and Rowland	JACSAT-1968-90-1671	
Vanpée and Grard	SYMCAQ-1955-5-484	
$\text{:CH}_2 + \text{OH}^{\cdot} (+\text{M}) \rightarrow$	products (CH , HCHO , HCHO , ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
Peeters and Vinckier	SYMCAQ-1975-15-969	
Williams and Smith	CHREAY-1970-70-267	(review)
$\text{:CH}_2 + \text{HO}_2 \rightarrow$	products (CH_3^{\cdot} , $\text{CH}_3\text{O}^{\cdot}$, CH_3O_2 , ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
$\text{:CH}_2 + \text{H}_2\text{O}^{\cdot} \rightarrow$	products (HCHO , CH_3^{\cdot} , $\text{CH}_3\text{O}^{\cdot}$, ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
$\text{:CH}_2 + \text{CH}_3\text{O}^{\cdot} \rightarrow \text{CH} + \text{HCHO}$ (or $\text{CH}_3^{\cdot} + \text{CO}$)		
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
$\text{:CH}_2 + \text{HCHO} \rightarrow$	products (CH_3^{\cdot} , $\text{CH}_3\text{O}^{\cdot}$, ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
$\text{:CH}_2 + \text{CH}_3\text{O}^{\cdot} \rightarrow$	products (CH_3^{\cdot} , HCHO , ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
$\text{:CH}_2 + \text{CH}_2=\text{O} \rightarrow \text{CO} + \text{CH}_2=\text{CH}_2$		
Laufer and Bass	JPCHAX-1974-78-1344	
Terao, et al.	JACSAT-1963-85-3919	
$\text{:CH}_2 + \text{R}_2\text{O}^{\cdot} \rightarrow$	products (CH_3^{\cdot} , HCHO , ...)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
$\text{CH}_3^{\cdot} + \text{O} (+\text{M}) \rightarrow$	products (CH , HCHO , HCHO , ...)	
Bowman, C. T.	CBSTB9-1970-2-161	
Dean and Kistiakowsky	JCPAA6-1971-54-1718	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
Fenimore and Jones	JPCHAX-1961-65-1532	
Hampson and Garvin	NBTNAE-1975-866-19	(review)
Herron, J. T.	IJCKB0-1969-1-527	(review)
Huile and Herron	PRKNAZ-1975-8-1	(review)
Jones and Bayes	JACSAT-1972-94-6869	(mechanism)
Mack and Thrush	JCF TAR-1974-70-178	
Niki, et al.	JCPAA6-1968-48-5729	
Niki, et al.	SYMCAQ-1969-12-277	
Seery and Bowman	CBFMA0-1970-14-37	
Slagle, et al.	IJCKB0-1974-6-111	
Washida and Bayes	CHPLBC-1973-23-373	
$\text{CH}_3^{\cdot} + \text{O}_2 \rightarrow$	products (:CH_2 , CH_3^{\cdot} , HCHO , HCHO , ...)	
Allara, et al.	IJCKB0-1972-4-345	
Asaba, et al.	SYMCAQ-1963-9-193	
Avramenko and Kolesnikova	DANKAS-1953-89-1037	
Avramenko and Kolesnikova	DANKAS-1953-91-107	
Avramenko and Postnikov	BACCAT-1960-1796	
Baldwin, et al.	ADCSAJ-1968-76-124	
Baldwin, et al.	SYMCAQ-1971-13-251	
Barnard and Cohen	TFS0A4-1968-64-396	
Basco, et al.	IJCKB0-1972-4-129	
Bowman, C. T.	CBSTB9-1970-2-161	
Brabbs and Brokaw	SYMCAQ-1975-15-893	
Cathonnet and James	JCPBAN-1973-70-1171	(mechanism)
Christie, M. I.	PRLAAZ-1958-244-411	
Cooke and Williams	SYMCAQ-1971-13-757	
Dean and Kistiakowsky	JCPAA6-1971-54-1718	
Demerjian, et al.	AESTC9-1974-4-1	(review)
DeMore and Raper	JCPAA6-1967-46-2500	
Drysdale and Norrish	PRLAAZ-1969-308-305	(mechanism)



Engleman, V. S.	EPTS BT-1976-600/2:76:003-5/1 (review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157
Falconer and Knox	PRLAAZ-1959-250-493
Gray, J. A.	JCSA9-1952-3150 (mechanism)
Hampson and Garvin	NBTNAE-1975-866-26 (review)
Hanst and Calvert	JPCHAX-1959-63-71 (mechanism)
Harding and Norrish	PRLAAZ-1952-212-291 (mechanism)
Heicklen, J.	ADCSAJ-1968-76-23 (review)
Heicklen and Johnston	JACSAT-1962-84-4030
Hoare and Walsh	TFSGA4-1957-53-1102
Hoey and Kutschke	CJCHAG-1955-33-496
Ingold and Bryce	JCPA6-1956-24-360 (mechanism)
Jachimowski, C. J.	CBFMA8-1974-23-233 (estimate)
Karmilova, et al.	ZFKHA9-1956-30-798
Karmilova, et al.	RJPCAR-1960-34-562 (mechanism)
Kleimenov and Nalbandyan	DKPCAG-1958-122-667
Kleimenov, et al.	ZFKHA9-1956-30-794 (mechanism)
Knox, J. H.	ARPCAW-1962-59-18 (review)
Lavrov and Evlanov	IUZTA4-1969-13-50 (review)
Lavrov and Kiyan	TPGVA7-1969-21
Lee and Malmberg	ACSRAL-1961-139-2J
Mantashyan, et al.	DKPCAG-1972-202-17
Marcotte and Noyes	DFSGAW-1951-10-236
Marcotte and Noyes	JACSAT-1952-74-783
McKellar and Norrish	PRLAAZ-1961-263-51
McMillan and Calvert	GXCR4-1965-1-83
Miyama and Takeyama	JCPA6-1964-40-2049
Nalbandyan, A. B.	DANKAS-1948-50-607 (mechanism)
Nalbandyan, A. B.	ZFKHA9-1948-22-1443 (mechanism)
Niki, et al.	ADCSAJ-1972-113-16 (review)
Norrish, R. G. W.	RIFPA9-1949-4-288 (mechanism)
Norrish, R. G. W.	DFSGAW-1951-10-269 (mechanism)
Pearson, G. S.	JPCHAX-1963-67-1686
Peeters and Mahnen	SYMCAQ-1973-14-133
Poroikova, A. I.	RZKHAR-1972-5B1151
Seery and Bowman	CBFMA8-1970-14-37
Semenov, N. N.	B00KA7-1959-2-217
Simonaitis and Heicklen	JPCHAX-1975-79-298
Skinner, et al.	JCPA6-1972-56-3853 (calculation)
Sleppy and Calvert	JACSAT-1959-81-769
Sokolova, et al.	DKCHAY-1969-185-298
Sokolova, et al.	RZKHAR-1972-5B1168
Sokolova, et al.	KICAA8-1973-14-721
Sokolova, et al.	KICAA8-1973-14-977
Vanpée and Grard	SYMCAQ-1955-5-484
van den Bergh and Callear	TFSGA4-1971-67-2017
Von Elbe and Lewis	JACSAT-1937-59-976 (mechanism)
Wenger and Kutschke	CJCHAG-1959-37-1546
Westenberg and Fristrom	JPCHAX-1961-65-591 (mechanism)



DeMore and Raper

Simonaitis and Heicklen

JCPA6-1967-46-2500

JPCHAX-1975-79-298



Drysdale and Lloyd

Engleman, V. S.

Greiner, N. R.

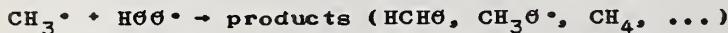
Peeters and Vinckier

GXCR4-1970-4-157 (review)

EPTS BT-1976-600/2:76:003-5/1 (review)

JCPA6-1970-53-1070

SYMCAQ-1975-15-969



Engleman, V. S.

EPTS BT-1976-600/2:76:003-5/1 (review)



Engleman, V. S.

EPTS BT-1976-600/2:76:003-5/1 (review)



Engleman, V. S.

EPTS BT-1976-600/2:76:003-5/1 (review)

$\text{CH}_3 \cdot \cdot \text{HCHO} \rightarrow \text{products} (\cdot\text{CH}_3, \text{CH}_3\text{O} \cdot, \dots)$

Engleman, V. S.
Pearson, G. S.

EPTSBT-1976-600/2:76:003-5/1 (review)
JPCHAX-1963-67-1686

$\text{CH}_3 \cdot \cdot \text{R}\text{O} \cdot \rightarrow \text{products} (\text{CH}_4, \text{HCHO}, \dots)$

Engleman, V. S.
Gray, et al.
Heicklen, J.
Sochet, et al.
Sokolova, et al.
Thynne and Gray

EPTSBT-1976-600/2:76:003-5/1 (review)
PRKNAZ-1967-4-63 (review)
ADCSAJ-1968-76-23 (review)
ADCSAJ-1968-76-111 (mechanism)
KICAA8-1973-14-977
TFSQA4-1963-59-1149

$\text{CH}_3 \cdot \cdot \text{R}\text{O}\text{O} \cdot \rightarrow \text{CH}_3\text{O} \cdot \cdot \text{R}\text{O} \cdot \text{(or } \text{CH}_3\text{OOR})$

Heicklen, J.

ADCSAJ-1968-76-23 (review)

$\text{CH}_4 \cdot \cdot \text{O} \rightarrow \text{products} (:\text{CH}_2, \text{CH}_3 \cdot, \text{HCHO}, \text{CH}_3\text{O}\text{H}, \dots)$

Asaba, et al.
Avramenko and Kolesnikova
Avramenko and Kolesnikova
Avramenko and Kolesnikova
Avramenko, et al.
Azatyan, V. V.
Azatyan, et al.
Brabbs and Brokaw
Bradley, et al.
Brown and Thrush
Cadle and Allen
Dean and Kistiakowsky
Demerjian, et al.
DeMore and Raper
Dryer, F. L.
Dryer, F. L.
Dryer and Glassman
Engleman, V. S.
Fenimore and Jones
Fenimore and Jones
Froben, F. W.
Hampson and Garvin
Herron, J. T.
Herron and Huie
Huie and Herron
Jones and Bayes
Karmilova, et al.
Kleimenov and Nalbandyan
Kleimenov, et al.
Lavrov and Evlanov
Lavrov and Grebenschchikova
Lin and DeMore
Mayer and Schieler
Moshkina, et al.
Norrish, R. G. W.
Norrish, R. G. W.
Norrish, R. G. W.
Norrish and Buckler
Norrish and Foord
Norrish and Wallace
Paraskevopoulos and Cvetanović
Pravilov and Vilesov
Pravilov and Vilesov
Schofield, K.
Simonaitis and Heicklen
Skinner, et al.
Soloukhin, R. I.
Vanpée and Grard
Vilesov and Pravilov
Vilesov and Pravilov
Westenberg and de Haas
Westenberg and de Haas
Westenberg and Fristrom
Wong and Potter
Wong and Potter
Young, et al.

SYMCAQ-1963-9-193
DANKAS-1953-91-107
BACCAT-1971-20-2556
11RFAQ-1954-51
BACCAT-1963-557
AYKZAN-1967-20-577
KICAA8-1964-5-177
SYMCAQ-1975-15-893
JCSIAP-1971-326
TFSQA4-1967-63-630
JPCHAX-1965-69-1611
JCPSA6-1971-54-1718
AESTC9-1974-4-1
JCPSA6-1967-46-2500
XADRCH-1972-AD 746284 (review)
DABBBA-1973-34-1539 (mechanism)
SYMCAQ-1973-14-987 (review)
EPTSBT-1976-600/2:76:003-5/1 (review)
JPCHAX-1961-65-1532 (mechanism)
JPCHAX-1961-65-2200
BBPCAX-1968-72-996
NBTNAE-1975-866-19 (review)
IJCKBQ-1969-1-527 (review)
JPCRBU-1973-2-467 (review)
PRKNAZ-1975-8-1 (review)
JACSAT-1972-94-6869 (mechanism)
ZFKHA9-1956-30-798
DKPCAG-1958-122-667
ZFKHA9-1956-30-794 (mechanism)
IUZTA4-1969-13-50 (review)
23ASA5-1970-126
JPCHAX-1973-77-863
JPCHAX-1968-72-2628 (estimation)
BACCAT-1959-1654
PRLAAZ-1935-150-36
RIFPA9-1949-4-288 (mechanism)
DFSGAW-1951-10-269 (mechanism)
BQOKA7-1941-385 (review)
PRLAAZ-1936-157-503
PRLAAZ-1934-145-307 (mechanism)
JACSAT-1969-91-7572
RJPCAR-1971-45-1018
USFGA7-1971-41
PLSSAE-1967-15-643 (review)
JPCHAX-1975-79-298
JCPSA6-1972-56-3853 (calculation)
SYMCAQ-1971-13-121
SYMCAQ-1955-5-484 (mechanism)
HIECAP-1970-4-191
HIECAP-1970-4-475
JCPSA6-1967-46-490
JCPSA6-1969-50-2512
JPCHAX-1961-65-591 (mechanism)
JCPSA6-1963-39-2211
CJCHAG-1967-45-367
JCPSA6-1968-49-4758

CH₄ + O₂ → products (overall, CH₃•, CH₃O•, ...)

Abramov and Fisak	PTPTAG-1972-78
Abramov, et al.	TPSGAG-1967-3-245
Antonik and Lucquin	BSCFAS-1968-4043
Antonova, et al.	BACCAT-1955-711
Asaba, et al.	SYMCAQ-1963-9-193
Baldwin and Walker	SYMCAQ-1973-14-241 (review)
Barassin, et al.	BSCFAS-1967-2521
Basevich, et al.	BACCAT-1971-20-1313
Basevich, et al.	BACCAT-1971-20-2071
Basevich, et al.	BACCAT-1972-21-2079
Blundell, et al.	SYMCAQ-1965-10-445
Bois d'Enghien, et al.	BSCFAS-1968-2321
Bone and Allum	PRLAAZ-1932-134-578
Bone and Gardner	PRLAAZ-1936-154-297
Bone and Wheeler	JCSQA9-1902-81-535
Bone and Wheeler	JCSQA9-1903-83-1074
Bowman and Seery	WSCPAB-1968-No. 68-41
Burke and Van Tiggelen	BSCBAG-1965-74-426
Cooke and Williams	SYMCAQ-1971-13-757
Crossley, et al.	CBFMAQ-1972-19-373
Cullis, et al.	PRLAAZ-1963-276-527
Dabora, E. K.	CBFMAQ-1975-24-181
De Wilde and Van Tiggelen	BSCBAG-1968-77-67 (generalized mechanism)
Dorko, et al.	CBFMAQ-1975-24-173
Dryer, F. L.	XADRCH-1972-AD 746284
Dryer, F. L.	DABBBA-1973-34-1539
Dryer and Glassman	SYMCAQ-1973-14-987
D'Souza and Karim	CBSTB9-1971-3-83
Egerton and Roy	ZEELAI-1957-61-584
Egerton, et al.	PRLAAZ-1956-235-158
Egerton, et al.	CBFMAQ-1957-1-25
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157
Enikolopyan and Bel'govskii	RJPCAR-1960-34-749
Enikolopyan and Konareva	BACCAT-1961-210
Enikolopyan and Konareva	BACCAT-1960-389
Enikolopian and Korolev	DKPCAG-1958-118-95
Enikolopyan, et al.	JAPUAW-1959-32-930
Enikolopyan, et al.	ZFKHA9-1957-31-865
Evlakov, S. F.	KICAA8-1973-14-427
Falconer, et al.	JCSQA9-1961-782
Fort and Hinshelwood	PRLAAZ-1930-129-284
Frear, G. L.	JACSAT-1934-56-305
Fristrom and Westenberg	SYMCAQ-1962-8-438
Garibyan, et al.	AYKZAN-1972-25-95
Garner and Ham	PRLAAZ-1939-170-80
Germain and Sueur	BSCFAS-1961-1008
Glass, et al.	SYMCAQ-1965-10-513
Higgin and Williams	SYMCAQ-1969-12-579
Hoare, D. E.	AGAGAS-1965-86-125
Hoare and Patel	TFSGA4-1969-65-1325
Hoare and Walsh	SYMCAQ-1955-5-467
Hoare and Walsh	SYMCAQ-1955-5-474
Jachimowski, C. J.	CBFMAQ-1974-23-233
Jacobs, N. F.	DABBBA-1970-30-3121
James, H.	RIFPA9-1958-13-338
Karmilova, et al.	ZFKHA9-1956-30-798
Karmilova, et al.	ZFKHA9-1957-31-851
Karmilova, et al.	RJPCAR-1960-34-261
Karmilova, et al.	RJPCAR-1960-34-470
Karmilova, et al.	RJPCAR-1961-35-512
Karmilova, et al.	RJPCAR-1961-35-717
Karmilova, et al.	RJPCAR-1961-35-706
Karmilova, et al.	RJPCAR-1960-34-562
Karpov, V. P.	APCSC3-1971-2-157
Karpov, V. P.	26JGAP-1972-382
Kashirskii, et al.	IVZEEAY-1974-17-71
Kistliakowsky and Richards	JCPSA6-1962-36-1707
Kleimenov and Nalbandyan	DKPCAG-1958-122-667
Kleimenov and Nalbandyan	DKPCAG-1959-124-5
Knox, J. H.	ARPCAW-1962-59-18 (review)
Kordysh, et al.	SVCIA7-1974-354
Kovalivnich and Glikin	RZKHAR-1973-11B1055
Kovalivnich, et al.	FGVZA7-1974-10-446
Kowalsky, et al.	PHZSAL-1932-1-451
Kozlov, G. I.	INFZA9-1958-1-41

$\text{CH}_4 + \text{O}_2 \rightarrow$ products (overall, CH_3^+ , CH_3O^+ , ...) (Cont'd)

Kozlov, G. I.	SYMCAQ-1959-7-142	
Lavrov, N. V.	IGNKB0-1967-27	(mechanism)
Lavrov and Grebenschikova	23ASA5-1970-126	
Lavrov and Grebenschikova	TP0VA7-1973-4	
Lavrov and Pervykh	TP0VA7-1973-3	
Levy, et al.	SYMCAQ-1962-8-524	
Lewis and Von Elbe	B00KA7-1961-90	(review)
Lifshitz, et al.	CBFMAG-1971-16-311	
Mari, R.	JCPBAN-1962-59-589	
Mari, et al.	JCPBAN-1962-59-596	
Mari, et al.	JCPBAN-1962-59-324	
Mayer and Schieler	JPCHAX-1968-72-2628	(estimation)
Miller, et al.	RJPCAR-1960-34-940	
Minkoff and Tipper	B00KA7-1962-151	(review)
Moshkina, et al.	BACCAT-1959-1654	
Moshkina, et al.	BACCAT-1957-821	
Mullins, B. P.	FUELAC-1953-32-343	
Nalbandyan, A. B.	DANKAS-1948-60-607	
Nalbandyan, A. B.	ZFKHA9-1948-22-1443	
Naylor and Wheeler	JCS0A9-1935-1426	
Nemeth and Sawyer	JPCHAX-1969-73-2421	
Nemeth, et al.	MGKLAL-1974-29-100	
Neiman and Egorov	PHZSAL-1932-1-700	
Neiman and Egorov	ZFKHA9-1932-3-61	
Neiman and Serbinov	NATUAS-1931-128-1040	
Neiman and Serbinov	PHZSAL-1932-1-536	
Neiman and Serbinov	PHZSAL-1933-4-433	
Neiman and Serbinov	ZFKHA9-1932-3-75	
Neiman and Serbinov	ZFKHA9-1933-4-41	
Newitt and Gardner	PRLAAZ-1936-154-329	
Newitt and Haffner	PRLAAZ-1932-134-591	
Norrish, R. G. W.	PRLAAZ-1935-150-36	
Norrish, R. G. W.	RIFPA9-1949-4-288	(mechanism)
Norrish, R. G. W.	DFSGAW-1951-10-269	(mechanism)
Norrish and Buckler	B00KA7-1941-385	
Norrish and Foord	PRLAAZ-1936-157-503	
Norrish and Patnaik	NATUAS-1949-163-883	
Norrish and Reagh	PRLAAZ-1940-176-429	
Norrish and Wallace	PRLAAZ-1934-145-307	
Oganov, et al.	PAKBAG-1972-21	
Panduranga, V.	IJ0TA8-1973-11-10	
Pelini and Antonik	BSCFAS-1974-2735	
Poroikova and Nalbandyan	KICAA8-1971-12-759	(mechanism)
Schchemelev, et al.	FGVZA7-1974-10-612	
Seery and Bowman	CBFMAG-1970-14-37	
Seery and Bowman	ACSRAL-1967-154-L20	
Semenov, N. N.	PHZSAL-1932-1-546	
Semenov, N. N.	B00KA7-1959-2-217	(review)
Semenov, N.	B00KA7-1935-295	(review)
Shtern, V. Ya.	B00KA7-1964	(review)
Simonson and Moore	SYMCAQ-1955-5-458	
Skinner, G. B.	JCPSA6-1973-58-412	
Skinner and Ruehrwein	JPCHAX-1959-63-1736	
Skinner, et al.	JCPSA6-1972-56-3853	
Skwarcowski, E.	GPENAS-1973-21-17	
Slotin and Style	TFSGA4-1939-35-420	
Sochet, et al.	JCPBAN-1966-63-1555	
Soloukhin, R. I.	CESWA4-1966-2-6	
Soroka and Erinov	TPSGAG-1972-5-105	
Tsuji, et al.	NENKAU-1966-45-684	
Tverdokhlebov, et al.	RZTEAT-1972-12T52	
Vandenabeele, et al.	CBFMAG-1960-4-253	
Vanpee and Grard	FUELAC-1955-34-433	
Vanpee and Grard	SYMCAQ-1955-5-484	
White, D. R.	XADRCH-1970-AD 7140727	
Zallen, D. M.	DABBA-1974-34-3809	

$\text{CH}_4 + \text{O}_3 \rightarrow$ products (overall)

Dillenmuth and Schubert	WSCPAP-1963-No. 63-22	
Dillenmuth, et al.	JPCHAX-1960-64-1496	
Hampson and Garvin	NBTNAE-1975-866-31	(review)
Pravilov and Vilesov	USFGA7-1971-41	
Schofield, K.	PLSSAE-1967-15-643	(review)
Schubert and Pease	JACSAT-1956-78-2044	
Schubert and Pease	JCPSA6-1956-24-919	
Stedman and Niki	EVLTAX-1973-4-303	

$\text{CH}_4 + \text{OH} \rightarrow \text{CH}_3^+ + \text{H}_2\text{O}$ (or $\text{CH}_3\text{O}^+ + \text{H}_2$)	
Baldwin, et al.	ADCSAJ-1968-76-124
Blundell, et al.	SYMCAQ-1965-10-445
Demerjian, et al.	AESTC9-1974-4-1 (review)
Dixon-Lewis and Williams	SYMCAQ-1967-11-951
Dryer, F. L.	XADRCH-1972-AD 746284 (review)
Drysdale and Lloyd	OCXRA4-1970-4-157 (review)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157
Falconer, et al.	JCSQA9-1961-4285
Fenimore and Jones	JPCHAX-1961-65-1532 (mechanism)
Fenimore and Jones	JPCHAX-1961-65-2200
Fristrom, R. M.	SYMCAQ-1963-9-560
Greiner, N. R.	JCPSA6-1967-46-2795
Greiner, N. R.	JCPSA6-1968-48-1413
Greiner, N. R.	JCPSA6-1970-53-1070
Hampson and Garvin	NBTNAE-1975-866-57 (review)
Herron, J. T.	IJCKBQ-1969-1-527 (review)
Hoare, D. E.	AGAGAS-1965-86-125
Hoare and Patel	TFSA4-1969-65-1325
Horne and Norrish	NATUAS-1967-215-1373
Karmilova, et al.	ZFKHA9-1956-30-798
Karmilova, et al.	RJPCAR-1961-35-717
Karmilova, et al.	RJPCAR-1960-34-562
Kleimenov, et al.	ZFKHA9-1956-30-794
Lavrov and Evlanov	IUZTA4-1969-13-50 (review)
Lin and DeMore	JPCHAX-1973-77-863
Minkoff and Tipper	BQKA7-1962-151 (review)
Nalbandyan, A. B.	DANKAS-1948-60-607 (mechanism)
Nalbandyan, A. B.	ZFKHA9-1948-22-1443 (mechanism)
Norrish, R. G. W.	RIFPA9-1949-4-288 (mechanism)
Norrish, R. G. W.	DFSGAW-1951-10-269 (mechanism)
Peeters and Mahnen	SYMCAQ-1973-14-133
Poroikova, A. I.	RZKHAR-1972-5B1151
Schofield, K.	PLSSAE-1967-15-643 (review)
Semenov, N. N.	BQKA7-1959-2-217 (review)
Skinner, et al.	JCPSA6-1972-56-3853 (calculation)
Sochet, L.-R.	JCPBAN-1973-70-456
Vanpée and Grard	SYMCAQ-1955-5-484
Von Elbe and Lewis	JACSAT-1937-59-976 (mechanism)
Westenberg and Fristrom	JPCHAX-1961-65-591
Wilson, Wm. E., Jr.	JCPSA6-1970-53-1300
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)

$\text{CH}_4 + \text{HO}^+ \rightarrow \text{CH}_3^+ + \text{H}_2\text{O}_2$ (or $\text{CH}_3\text{O}^+ + \text{H}_2\text{O}$)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157
Karmilova, et al.	RJPCAR-1960-34-562
Minkoff and Tipper	BQKA7-1962-151 (review)
Schofield, K.	PLSSAE-1967-15-643 (review)
Semenov, N. N.	BQKA7-1959-2-217 (review)
Skinner, et al.	JCPSA6-1972-56-3853 (calculation)
Sochet, L.-R.	JCPBAN-1973-70-456

$\text{CH}_4 + \text{CH}_3^+ \rightarrow \text{CH}_3^+ + \text{HCHO}$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)

$\text{CH}_4 + \text{RO}^+ \rightarrow \text{CH}_3^+ + \text{RO}_2$	
Falconer, et al.	JCSQA9-1961-4285

$\text{CH}_3^+ + \text{M} \rightarrow \text{CO} + \text{H} (+\text{M})$	
Benson and O'Neal	NSRDAP-1970-21-587 (review)
Bowman, C. T.	CBSTB9-1970-2-161
Browne, et al.	SYMCAQ-1969-12-1035
Calvert, J. G.	JPCHAX-1957-61-1206
DeGraff and Calvert	JACSAT-1967-89-2247
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Gay, et al.	JCPSA6-1965-43-4017
Geisbrecht and Daubert	IEPDAW-1975-14-159
Marcotte and Noyes	DFSGAW-1951-10-236
Marcotte and Noyes	JACSAT-1952-74-783
Markevich and Filippova	RJPCAR-1959-33-358

$\cdot\text{CH}_2\text{ (}\cdot\text{M}\text{)} \rightarrow \text{C}\text{H}_2 + \text{H (}\cdot\text{M}\text{)} \text{ (Cont'd)}$

McMillan and Calvert 6XCRA4-1965-1-83 (review)
Pearson, G. S. JPCCHAX-1963-67-1686
Seery and Bowman CBFMAG-1970-14-37

$$\cdot\text{CH}\theta + \theta \rightarrow \text{C}\theta + \text{OH} \text{ (or } \text{C}\theta_2 + \text{H, or } \text{CH} + \theta_2\text{)}$$

Engleman, V. S. EPTSGBT-1976-600/2:76:003-5/1 (review)
Hampson and Garvin NBTNAEB-1975-866-19 (review)
Herron, J. T. IJCKBGB-1969-1-527 (review)
Huie and Herron PRKNAZ-1975-8-1 (review)
Mack and Thrush JCFTAR-1973-69-208
Mack and Thrush JCFTAR-1974-70-187
Niki, et al. SYMCAQ-1969-12-277
Schofield, K. PLSSAE-1967-15-643 (review)
Thrush, B. A. BBPCAX-1968-72-966 (mechanism)
Westenberg and de Haas JPCHAX-1972-76-2215

$$\text{•CHO} + \text{O}_2 \rightarrow \text{products (CO, CO}_2, \text{ HC(O)}\text{OO}\cdot, \dots)$$

Atkinson, et al.	JACSAT-1973-95-7592	(mechanism)
Demerjian, et al.	AESTC9-1974-4-1	(review)
Drysdale and Norrish	PRLAAZ-1969-308-305	(mechanism)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157	
Geisbrecht and Daubert	IEPDIAW-1975-14-159	
Hampson and Garvin	NBTNAE-1975-866-25	(review)
Hanst and Calvert	JPCHAX-1959-63-71	(mechanism)
Hay and Hessam	CBFMAQ-1971-16-237	
Heicklen and Johnston	JACSAT-1962-84-4030	(mechanism)
Horner, et al.	TFSGA4-1954-50-1201	
Karmilova, et al.	ZFKHA9-1956-30-798	
Karmilova, et al.	RJPCAR-1960-34-562	(mechanism)
Lavrov and Evlanov	IUZTA4-1969-13-50	(review)
Lewis and Von Elbe	BOOKA7-1961-90	(review)
Marcotte and Noyes	DFSGAW-1951-10-236	
Marcotte and Noyes	JACSAT-1952-74-783	
Markevich and Filippova	RJPCAR-1959-33-358	
McMillan and Calvert	OXCRA4-1965-1-83	(review)
Minkoff and Tipper	BOOKA7-1962-136	
Niki, et al.	ADCSAJ-1972-113-16	(review)
Norrish and Thomas	NATUAS-1966-210-728	(mechanism)
Pearson, G. S.	JPCHAX-1963-67-1686	
Peeters and Mahnen	SYMCAQ-1973-14-133	
Semenov, N. N.	BOOKA7-1959-2-217	(review)
Vardanyan and Nalbandyan	KICAA8-1970-11-927	(mechanism)
Vardanyan, et al.	AYKZAN-1972-25-281	
Vardanyan, et al.	DKPCAG-1970-191-210	(mechanism)
Vardanyan, et al.	CBFMAQ-1974-22-153	
Von Elbe and Lewis	JACSAT-1957-59-976	(mechanism)

$$\text{•CHO} + \text{O}_3 \rightarrow \text{products}$$

Atkinson, et al. JACSAT-1973-95-7592 (mechanism)

$$\cdot\text{CH}\theta + \text{H} \rightarrow \text{products} (\text{C}\theta, \text{CH}, :\text{CH}_2, \text{HCH}\theta, \dots)$$

Browne, et al. SYMCAQ-1969-12-1035
DeGraff and Calvert JACSAT-1967-89-2247
Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
Herron, J. T. IJCKKBG-1969-1-527 (review)
Huie and Herron PRKNAZ-1975-8-1 (review)
Mack and Thrush JCFTAR-1973-69-208
Mack and Thrush JCFTAR-1974-70-187
Niki, et al. SYMCAQ-1969-12-277

$$\cdot\text{CH}\theta + \text{H}_2 (+\text{M}) \rightarrow \text{products} (\text{CH}_3, :\text{CH}_2, \text{HCH}\theta, \dots)$$

Engleman, V. S. EPTS BT-1976-600/2:76:003-5/1 (review)

$\text{•CH}_2 + \text{OH} \rightarrow \text{products (CO, CH}_2=\text{CH}_2, \dots)$

Bowman, C. T.	CBSTB9-1970-2-161
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Jachimowski, C. J.	CBFMAG-1974-23+233 (estimate)
Schofield, K.	PLSSAE-1967-15-643 (review)
Seery and Bowman	CBFMAG-1970-14-37
Westenberg and Fristrom	JPCHAX-1961-65-591 (mechanism)

- $\cdot\text{CH}\theta + \text{H}\theta\theta \rightarrow \text{products} (\text{C}\theta_2, \text{HCH}\theta, \dots)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{H}_2\theta \rightarrow \text{products} (\cdot\text{CH}_2, \text{CH}_3\cdot, \text{HCH}\theta, \dots)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{CH} \rightarrow \text{C}\theta + \cdot\text{CH}_2$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \cdot\text{CH}_2 \rightarrow \text{CH} + \text{HCH}\theta (\theta\text{R CH}_3\cdot + \text{C}\theta)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{CH}_3\cdot \rightarrow \text{CH}_4 + \text{C}\theta (\text{or} \cdot\text{CH}_2 + \text{HCH}\theta)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{CH}_4 \rightarrow \text{CH}_3\cdot + \text{HCH}\theta$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \cdot\text{CH}\theta \rightarrow \text{C}\theta + \text{HCH}\theta (\text{or} \cdot\text{CH}_2 + \text{C}\theta_2)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{HCH}\theta \rightarrow \text{CH}_3\cdot + \text{C}\theta_2 (\text{or} \text{C}\theta + \text{CH}_3\theta\cdot)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{CH}_3\theta\cdot \rightarrow \text{products} (\text{HCH}\theta, \text{CH}_4, \dots)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{R}\cdot \rightarrow \text{C}\theta + \text{RH}$
 DeGraff and Calvert
 Engleman, V. S. JACSAT-1967-89-2247
 EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{RH} \rightarrow \text{products} (\text{HCH}\theta, \text{CH}_3\theta\cdot, \dots)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\cdot\text{CH}\theta + \text{R}\theta\cdot \rightarrow \text{products} (\text{HCH}\theta, \text{CH}_4, \dots)$
 Engleman, V. S. EPTSBT-1976-600/2:76:003-5/1 (review)
- $\text{HC}\theta\theta\cdot \rightarrow \text{H} + \text{C}\theta_2$
 Demerjian, et al. AESTC9-1974-4-1 (review)
- $\text{HC}\theta\theta\cdot + \theta_2 \rightarrow \text{C}\theta_2 + \text{H}\theta\theta\cdot$
 Demerjian, et al. AESTC9-1974-4-1 (review)
- $\text{HC}\theta\theta\cdot + \text{HCH}\theta \rightarrow \cdot\text{CH}\theta + \text{HC}\theta\theta\text{H}$
 Hanst and Calvert JPCHAX-1959-63-71 (mechanism)
- $\text{HC}\theta\theta\cdot + \text{CH}_3\theta\cdot \rightarrow \text{CH}_3\theta\text{H} + \text{C}\theta_2$
 Heicklen and Johnston JACSAT-1962-84-4030 (mechanism)
- $\text{HC}(\theta)\theta\theta\cdot (+\text{M}) \rightarrow \text{C}\theta + \text{H}\theta\theta\cdot (+\text{M})$
 Geisbrecht and Daubert
 Scheer, M. D.
 Vardanyan, et al. IEPDAW-1975-14-159
 SYMCAQ-1955-5-435
 DKPCAG-1970-191-210

HC(O) $\text{OO} \cdot + \text{O}_2 \rightarrow \text{CO} + \text{HO} \cdot + \text{O}_2$ (or HC O $\cdot + \text{O}_3$)	
Hanst and Calvert Scheer, M. D.	JPCHAX-1959-63-71 (mechanism) SYMCAQ-1955-5-435
HC(O) $\text{OO} \cdot + \text{HO} \cdot \rightarrow \text{HC}(\text{O})\text{OOH} + \text{O}_2$ (or HC O $\cdot + \text{O}_2 + \text{OH}$)	
Demerjian, et al.	AESTC9-1974-4-1 (review)
HC(O) $\text{OO} \cdot + \text{HCHO} \rightarrow \text{CHO} + \text{HC}(\text{O})\text{OOH}$	
Minkoff and Tipper Scheer, M. D. Vardanyan and Nalbandyan Vardanyan, et al.	B60KA7-1962-136 SYMCAQ-1955-5-435 KICAA8-1970-11-927 (mechanism) DKPCAG-1970-191-210 (mechanism)
HC(O) $\text{OO} \cdot + \text{RO} \cdot \rightarrow \text{HC}(\text{O})\text{OO} + \text{RO} \cdot + \text{O}_2$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
HCHO ($\cdot\text{M}$) \rightarrow products (CH, CO, $\cdot\text{CHO}$, ...)	
Engleman, V. S. Gay, et al. Peeters, J. Peeters and Mahnen	EPTSBT-1976-600/2:76:003-5/1 (review) JCPSA6-1965-43-4017 ICBEAJ-1973-38-6 SYMCAQ-1973-14-133
HCHO + O \rightarrow products (CO, $\cdot\text{CHO}$, ...)	
Avramenko and Kolesnikova Avramenko and Lorentso Avramenko and Lorentso Baldwin and Cowe Baldwin, et al. Bufalini and Brubaker Cadle, et al. Daby, et al. Dean and Kistiakowsky Demerjian, et al. Engleman, V. S. Fristrom, R. M. Hampson and Garvin Herron, J. T. Herron and Huie Herron and Penzhorn Huie and Herron Lavrov and Evlanov Lavrov and Kiyan Mack and Thrush Moshkina, et al. Niki, H. Niki, et al. Niki, et al. Niki, et al. Schofield, K. Slotin and Style Wilson, Wm. E., Jr.	ZFKHA9-1956-30-581 (mechanism) CHTEAA-1953-5-193 ZFKHA9-1952-26-1084 TFSQA4-1962-58-1768 SYMCAQ-1965-10-423 25QIAZ-1971-225 CMSHAF-1974-3-115 ACSRAL-1970-160-PHYS-122 JCPSA6-1971-54-1718 AESTC9-1974-4-1 (review) EPTSBT-1976-600/2:76:003-5/1 (review) SYMCAQ-1963-9-560 NBTNAE-1975-866-19 (review) IJCKB9-1969-1-527 (review) JPCRBU-1973-2-467 (review) JPCHAX-1969-73-191 PRKNAZ-1975-8-1 (review) IUZTA4-1969-13-50 (review) TPGVA7-1969-21 JCFTAR-1973-69-208 BACCAT-1959-1654 JCPSA6-1966-45-2330 JCPSA6-1968-48-5729 SYMCAQ-1969-12-277 ADCSAJ-1972-113-16 (review) PLSSAE-1967-15-643 (review) TFSQA4-1939-35-420 JPCRBU-1972-1-535 (review)
HCHO + O ₂ \rightarrow products (overall CO, CO ₂ , $\cdot\text{CHO}$, HC O \cdot , ...)	
Anisonyan, et al. Antonova, et al. Asaba, et al. Askey, P. J. Axford and Norrish Axford and Norrish Baldwin and Walker Baldwin, et al. Barnard, J. A. Bell and Tipper Bone and Gardner De Wilde and Van Tiggelen Drummond, L. J. Engleman, V. S. Enikolopyan, N. S. Fort and Hinshelwood Gay, et al.	RJPCAR-1959-33-115 BACCAT-1955-711 SYMCAQ-1963-9-193 JACSAT-1930-52-974 (mechanism) NATUAS-1947-160-537 PRLAAZ-1948-192-518 SYMCAQ-1973-14-241 (review) SYMCAQ-1971-13-251 ADCSAJ-1968-76-98 PRLAAZ-1957-238-256 PRLAAZ-1936-154-297 BSCBAG-1968-77-67 (generalized mechanism) CBSTB9-1971-3-47 EPTSBT-1976-600/2:76:003-5/1 (review) SYMCAQ-1959-7-157 PRLAAZ-1930-129-284 JCPSA6-1965-43-4017

$\text{HCHO} + \text{O}_2 \rightarrow \text{products} (\text{overall CO, CO}_2, \text{, CHO, HCCHO, ...})$ (Cont'd)

Harding and Norrish	NATUAS-1949-163-797
Harding and Norrish	PRLAAZ-1952-212-291
Hay, J. M.	JCSGA9-1965-7388
Hay and Hessam	CBFMA9-1971-16-237
Horner, et al.	TFSOA4-1954-50-1201
Karmilova, et al.	ZFKHA9-1956-30-798
Karmilova, et al.	RJPCAR-1960-34-562
Knox, J. H.	ARPCAW-1962-59-18 (review)
Lavrov, N. V.	IGNKBO-1967-27 (mechanism)
Lewis and Von Elbe	B60KA7-1961-90 (review)
Markevich and Filippova	ZFKHA9-1957-31-2649
Markevich and Filippova	RJPCAR-1959-33-358
Markevich and Pecherskaya	RJPCAR-1961-35-697
Markevich, et al.	BACCAT-1958-480
Minkoff and Tipper	B60KA7-1962-136 (review)
Miyama and Takeyama	JCPAS6-1964-40-2049
Nalbandyan, A. B.	28KMA4-1973-140
Norrish, R. G. W.	PRLAAZ-1935-150-36
Norrish, R. G. W.	RIFPA9-1949-4-288 (mechanism)
Norrish, R. G. W.	DFSGAW-1951-10-269 (mechanism)
Norrish and Buckler	B60KA7-1941-385 (review)
Norrish and Foord	PRLAAZ-1936-157-503
Scheer, M. D.	JCPAS6-1955-23-1357
Scheer, M. D.	SYMCAQ-1955-5-435
Semenov, N. N.	PHZSAL-1932-1-546
Semenov, N. N.	B60KA7-1959-2-217 (review)
Semenov, N.	B60KA7-1935-366 (review)
Snowdon and Style	TFSOA4-1939-35-426
Sochet, L.-R.	JCPBAN-1973-70-456
Spence, R.	JCSGA9-1936-649
Vanpee, M.	BSCBAG-1953-62-285
Vanpee, M.	BSCBAG-1953-62-661
Vanpée and Grard	FUELAC-1955-34-433
Vardanyan and Nalbandyan	KICAA8-1970-11-927
Vardanyan, et al.	DKPCAG-1970-191-210
Vardanyan, et al.	CBFMA9-1971-17-315
Vardanyan, et al.	AYKZAN-1972-25-281 (review)
Vardanyan, et al.	DKPCAG-1970-191-210
Vardanyan, et al.	CBFMA9-1974-22-153
Von Elbe and Lewis	JACSAT-1937-59-976 (mechanism)

$\text{HCHO} + \text{O}_2 + \text{H} \rightarrow \text{CO} + \text{H}_2\text{O} + \text{OH}$

Harding and Norrish	PRLAAZ-1952-212-291 (mechanism)
Norrish, R. G. W.	RIFPA9-1949-4-288 (mechanism)
Norrish, R. G. W.	DFSGAW-1951-10-269 (mechanism)

$\text{HCHO} + \text{H} (+\text{M}) \rightarrow \text{products} (\text{CH, } \text{,CHO, } \text{:CH}_2, \text{ ...})$

Baldwin, et al.	TFSOA4-1962-58-60 (review)
DeGraff and Calvert	JACSAT-1967-89-2247
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)

$\text{HCHO} + \text{H}_2 \rightarrow \text{products} (\text{:CH}_2, \text{CH}_3\text{, CH}_3\text{O, ...})$

Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
-----------------	---------------------------------------

$\text{HCHO} + \text{OH} \rightarrow \text{products} (\text{CO, } \text{,CHO, } \text{:CH}_2, \text{ ...})$

Baldwin and Cowe	TFSOA4-1962-58-1768
Baldwin, et al.	SYMCAQ-1965-10-423
Blundell, et al.	SYMCAQ-1965-10-445
Buhalini and Brubaker	25QIAZ-1971-225
Cullis, et al.	PRLAAZ-1963-276-527
Demerjian, et al.	AESTC9-1974-4-1 (review)
Drysdale and Lloyd	6XCRA4-1970-4-157 (review)
Drysdale and Norrish	PRLAAZ-1969-308-305 (mechanism)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157
Fristrom, R. M.	SYMCAQ-1963-9-560
Hampson and Garvin	NBTNAE-1975-866-57 (review)
Harding and Norrish	PRLAAZ-1952-212-291
Hay and Hessam	CBFMA9-1971-16-237 (mechanism)
Heicklen and Johnston	JACSAT-1962-84-4030
Herron and Penzhorn	JPCHAX-1969-73-191
Hoare, D. E.	AGAGAS-1965-86-125
Karmilova, et al.	ZFKHA9-1956-30-798
Karmilova, et al.	RJPCAR-1960-34-562

HCH₆ + OH → products (C₆, *CH₆, :CH₂, ...) (Cont'd)

Lavrov and Evlanov	IUZTA4-1969-13-50	(review)
McKellar and Norrish	PRLAAZ-1960-254-147	
Minkoff and Tipper	B66KA7-1962-151	(review)
Morris and Niki	JCPSA6-1971-55-1991	
Morris and Niki	JPCHAX-1971-75-3640	
Niki, et al.	ADCSAJ-1972-113-16	(review)
Norris, R. G. W.	RIFPA9-1949-4-288	(mechanism)
Norris, R. G. W.	DFSGAW-1951-10-269	(mechanism)
Peeters and Mahnen	SYMCAQ-1973-14-133	
Schofield, K.	PLSSAE-1967-15-643	(review)
Seery and Bowman	CBFMA6-1970-14-37	
Semenov, N. N.	B66KA7-1959-2-217	(review)
Socbet, L.-R.	JCPBAN-1973-70-456	
Vardanyan, et al.	AYKZAN-1972-25-281	
Vardanyan, et al.	CBFMA6-1974-22-153	
Von Elbe and Lewis	JACSAT-1937-59-976	(mechanism)
Westenberg and Fristrom	JPCHAX-1961-65-591	
Westenberg and Fristrom	SYMCAQ-1965-10-473	
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535	(review)

HCH₆ + HO₂ → products (C₆, *CH₆, CH₃O⁺, ...)

Baldwin, et al.	SYMCAQ-1971-13-251	
Bell and Tipper	PRLAAZ-1957-238-256	
Blundell, et al.	SYMCAQ-1965-10-445	
Demerjian, et al.	AESTC9-1974-4-1	(review)
Englemen, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
Enikolopyan, N. S.	SYMCAQ-1959-7-157	
Hampson and Garvin	NBTNAE-1975-866-62	(review)
Hay, J. M.	JCSGAA-1965-7388	
Hay and Hessam	CBFMA6-1971-16-237	
Hoare, D. E.	AGAGAS-1965-86-125	
Horner, et al.	TFSGA4-1954-50-1201	
Karmilova, et al.	ZFKHAA-1956-30-798	
Karmilova, et al.	RJPCAR-1960-34-562	
Lloyd, A. C.	IJCKB6-1974-6-169	(review)
McKellar and Norrish	PRLAAZ-1960-254-147	
Minkoff and Tipper	B66KA7-1962-136	
Minkoff and Tipper	B66KA7-1962-151	(review)
Norris and Thomas	NATUAS-1966-210-728	(mechanism)
Schofield, K.	PLSSAE-1967-15-643	(review)
Semenov, N. N.	B66KA7-1959-2-217	
Socbet, L.-R.	JCPBAN-1973-70-456	
Style and Summers	TFSGA4-1946-42-388	
Vardanyan and Nalbandyan	KICAA8-1970-11-927	(mechanism)
Vardanyan, et al.	DKPCAG-1970-191-210	
Vardanyan, et al.	DKPCAG-1970-193-498	
Vardanyan, et al.	AYKZAN-1972-25-281	
Vardanyan, et al.	CBFMA6-1971-17-315	
Vardanyan, et al.	CBFMA6-1974-22-153	
Von Elbe and Lewis	JACSAT-1937-59-976	(mechanism)

HCH₆ + H₂O → products (CH₃⁺, CH₃O⁺, CH₄, ...)

Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
-----------------	------------------------------	----------

HCH₆ + CH → *CH₆ + :CH₂ (or C₆ + CH₃⁺)

Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
-----------------	------------------------------	----------

HCH₆ + :CH₂ → products (*CH₆, CH₃O⁺, ...)

Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
-----------------	------------------------------	----------

HCH₆ + CH₃⁺ → products (*CH₆, CH₃O⁺, ...)

Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
Pearson, G. S.	JPCHAX-1963-67-1686	

HCH₆ + *CH₆ → CH₃⁺ + C₆₂ (or C₆ + CH₃O⁺)

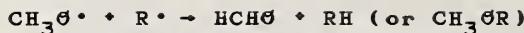
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1	(review)
-----------------	------------------------------	----------

HCH₆ + HC₆O⁺ → *CH₆ + HC₆O⁺

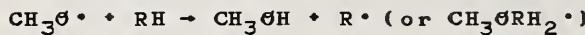
Hanst and Calvert	JPCHAX-1959-63-71	(mechanism)
-------------------	-------------------	-------------

$\text{HCH}\cdot + \text{HC}(\text{O})\text{OO} \rightarrow \cdot\text{CH}\cdot + \text{HC}(\text{O})\text{OOH}$	
Minkoff and Tipper	BEKA7-1962-136
Scheer, M. D.	SYMCAQ-1955-5-435
Vardanyan and Nalbandyan	KICAA8-1970-11-927 (mechanism)
Vardanyan, et al.	DKPCAG-1970-191-210 (mechanism)
$\text{HCH}\cdot + \text{HCH}\cdot \rightarrow \cdot\text{CH}\cdot + \text{CH}_3\text{O}\cdot$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{HCH}\cdot + \text{R}\cdot \rightarrow \cdot\text{CH}\cdot + \text{RH}$	
Baldwin, et al.	TFSQA4-1960-56-802
DeGraff and Calvert	JACSAT-1967-89-2247
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Hoare and Wellington	SYMCAQ-1962-8-472
Pearson, G. S.	JPCHAX-1963-67-1686
$\text{HCH}\cdot + \text{RH} \rightarrow \text{CH}_3\text{O}\cdot + \text{R}\cdot$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{HCH}\cdot + \text{R}\cdot \rightarrow \cdot\text{CH}\cdot + \text{R}\text{OH}$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
Dever and Calvert	JACSAT-1962-84-1362
Gray, et al.	PRKNAZ-1967-4-63 (review)
Heicklen, J.	ADCSAJ-1968-76-23 (review)
Hoare and Wellington	SYMCAQ-1962-8-472
McMillan and Calvert	OXCRA4-1965-1-83
Pearson, G. S.	JPCHAX-1963-67-1686
$\text{HC}(\text{O})\text{OOH} + \text{O}_2 \rightarrow \text{products (overall)}$	
De Wilde and Van Tiggelen	BSCBAG-1968-77-67 (generalized mechanism)
$\text{CH}_2(\text{O}\cdot)_2 + \text{O}_2 \rightarrow \text{HO}\cdot + \text{HC}(\text{O})\text{OO}\cdot$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\cdot\text{CH}_2\text{OO}\cdot + \text{O}_2 \rightarrow \text{CH}_2(\text{OO}\cdot)_2$ [or $\text{HCH}\cdot + \text{O}_3$]	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_2(\text{OO}\cdot)_2 \rightarrow \text{CH}_2(\text{O}\cdot)_2 + \text{O}_2$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{O}\cdot + (\text{M}) \rightarrow \text{products} (\text{CH}_3, \text{HCH}\cdot, \dots)$	
Avramenko and Kolesnikova	DANKAS-1953-89-1037
Badrian, et al.	RJPCAR-1959-33-580
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Gray, et al.	PRKNAZ-1967-4-63 (review)
Sochet, et al.	ADCSAJ-1968-76-111 (mechanism)
$\text{CH}_3\text{O}\cdot + \text{O} \rightarrow \text{products} (\cdot\text{CH}\cdot, :\text{CH}_2, \text{HCH}\cdot, \dots)$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O}\cdot + \text{O}_2 \rightarrow \text{HCH}\cdot + \text{HO}\cdot$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Hampson and Garvin	NBTNAE-1975-866-70 (review)
Heicklen and Johnston	JACSAT-1962-84-4030
Hoare and Whytock	CJCHAG-1967-45-865
McMillan and Calvert	OXCRA4-1965-1-83
Niki, et al.	ADCSAJ-1972-113-16 (review)
Simonaitis and Heicklen	JPCHAX-1975-79-298

$\cdot\text{CH}_2\text{OH} + \text{O}_2 \rightarrow \text{HCHO} + \text{HOH}$ [or $\cdot\text{CH}_2(\text{OHO})\text{OH}$]	
Avramenko and Kolesnikova	BACCAT-1961-545
Demerjian, et al.	AESTC9-1974-4-1 (review)
Hoare and Whytock	CJCHAG-1967-45-2741
Knox, J. H.	ARPCAW-1962-59-18 (review)
Niki, et al.	ADCSAJ-1972-113-16 (review)
Wiser and Hill	SYMCAQ-1955-5-553 (mechanism)
$\text{CH}_3\text{O} \cdot + \text{O}_3 \rightarrow \text{products}$	
Simonaitis and Heicklen	JPCHAX-1975-79-298
$\text{CH}_3\text{O} \cdot + \text{H} \rightarrow \text{products} (:\text{CH}_2, \text{HCHO}, \text{CH}_3\text{O} \cdot, \dots)$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O} \cdot + \text{H}_2 \rightarrow \text{CH}_3\text{O} \cdot + \text{H}_2\text{O}$ (or $\text{CH}_4 + \text{OH}$)	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O} \cdot + \text{OH} \rightarrow \text{products} (\text{HCHO}, \text{CH}_4, \text{CH}_3\text{O} \cdot \text{H}, \dots)$	
Cathonnet and James	JCPBAN-1973-70-1171 (mechanism)
Demerjian, et al.	AESTC9-1974-4-1 (review)
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
Heicklen and Johnston	JACSAT-1962-84-4030 (mechanism)
$\text{CH}_3\text{O} \cdot + \text{HOH} \rightarrow \text{CH}_3\text{OH} + \text{O}_2$ (or $\text{HC}(\text{O})\text{H} + \text{H}_2\text{O}$)	
Demerjian, et al.	AESTC9-1974-4-1 (review)
Varkey and Sandler	CBFMAD-1969-13-223 (mechanism)
$\text{CH}_3\text{O} \cdot + \text{H}_2\text{O} \rightarrow \text{CH}_4 + \text{HOH}$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O} \cdot + \text{CH} \rightarrow \text{CH}_3\text{O} \cdot + \text{CH}_2\text{O}$ [or $\text{HCHO} + :\text{CH}_2$, or $\text{CH}_4 + \text{CO}$]	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O} \cdot + :\text{CH}_2 \rightarrow \text{products} (:\text{CH}_2, \text{HCHO}, \dots)$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O} \cdot + :\text{CH}_2 \rightarrow \text{products} (\text{HCHO}, \text{CH}_4, \dots)$	
Engleman, V. S.	EPTSBT-1976-600/2:76:003-5/1 (review)
$\text{CH}_3\text{O} \cdot + \text{HOH} \rightarrow \text{CH}_3\text{OH} + \text{CO}_2$	
Heicklen and Johnston	JACSAT-1962-84-4030 (mechanism)
$\text{CH}_3\text{O} \cdot + \text{CH}_3\text{O} \cdot \rightarrow \text{CH}_3\text{OH} + \text{HCHO}$ (or $\text{CH}_3\text{O} \cdot \text{CH}_3$)	
Demerjian, et al.	AESTC9-1974-4-1 (review)
Dever and Calvert	JACSAT-1962-84-1362
Gray, et al.	PRKNAZ-1967-4-63 (review)
Hanst and Calvert	JPCHAX-1959-63-71 (mechanism)
Heicklen, J.	ADCSAJ-1968-76-23 (review)
Heicklen and Johnston	JACSAT-1962-84-4030 (mechanism)
Hoare and Wellington	SYMCAQ-1962-8-472
Hoey and Kutschke	CJCHAG-1955-33-496 (mechanism)
Mantashyan, et al.	DKPCAG-1972-202-17
McMillan and Calvert	OXCRA4-1965-1-83
Parkes, D. A.	SYMCAQ-1975-15-795
Sochet, et al.	ADCSAJ-1968-76-111 (mechanism)
Sokolova, et al.	DKCHAY-1969-185-298
Sokolova, et al.	KICAA8-1973-14-977 (mechanism)
Thomas and Calvert	JACSAT-1962-84-4207



Engleman, V. S. Gray, et al. Heicklen, J. Sochet, et al. Sokolova, et al. Thynne and Gray	EPTSBT-1976-600/2:76:003-5/1 (review) PRKNAZ-1967-4-63 (review) ADCSAJ-1968-76-23 (review) ADCSAJ-1968-76-111 (mechanism) KICAA8-1973-14-977 TFSOA4-1963-59-1149
--	---



Antonik and Lucquin Badrian, et al. Demerjian, et al. Falconer, et al. Gray, et al. Heicklen, J. Hoare and Wellington Hoare and Whytock Karmilova, et al. Lissi, et al. Mantashyan and Nalbandyan Parkes, D. A. Shaw and Trotman-Dickenson Sokolova, et al. Thynne and Gray	BSCFAS-1968-2796 RJPCAR-1959-33-580 AESTC9-1974-4-1 (review) JCSOA9-1961-4285 PRKNAZ-1967-4-63 (review) ADCSAJ-1968-76-23 (review) SYMCAQ-1962-8-472 CJCHAG-1967-45-865 ZFKHA9-1956-30-798 IJCKB9-1975-7-625 IARKAZ-1961-14-527 SYMCAQ-1975-15-795 JCSOA9-1960-3210 KICAA8-1973-14-977 (mechanism) TFSOA4-1963-59-1149
---	--



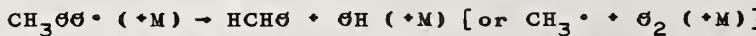
Thomas and Calvert JACSAT-1962-84-4207



Demerjian, et al. Dever and Calvert Heicklen, J. Heicklen and Johnston Mantashyan, et al. Parkes, D. A. Sokolova, et al. Sokolova, et al. Sokolova, et al.	AESTC9-1974-4-1 (review) JACSAT-1962-84-1362 ADCSAJ-1968-76-23 (review) JACSAT-1962-84-4030 DKPCAG-1972-202-17 SYMCAQ-1975-15-795 DKCHAY-1969-185-298 RZKHAR-1972-5B1168 KICAA8-1973-14-977 (mechanism)
--	---



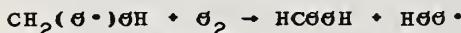
Demerjian, et al. AESTC9-1974-4-1 (review)



Heicklen, J. Karmilova, et al. Kleimenov and Nalbandyan Kleimenov and Nalbandyan Kleimenov and Nalbandyan McMillan and Calvert Mantashyan and Nalbandyan Mantashyan, et al. Porokova, et al. Wiser and Hill	ADCSAJ-1968-76-23 (review) ZFKHA9-1956-30-798 DKPCAG-1958-122-667 DKPCAG-1959-124-5 RCBUAU-1960-11-391 GXCR4-1965-1-83 IARKAZ-1962-15-3 IARKAZ-1961-14-185 KICAA8-1967-8-988 SYMCAQ-1955-5-553 (mechanism)
--	---



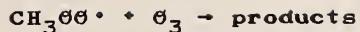
Hanst and Calvert JPCCHAX-1959-63-71 (mechanism)



Demerjian, et al. AESTC9-1974-4-1 (review)



Demerjian, et al. AESTC9-1974-4-1 (review)



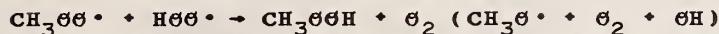
Simonaitis and Heicklen

JPCHAX-1975-79-298



Heicklen, J.

Heicklen and Johnston

ADCSAJ-1968-76-23 (review)
JACSAT-1962-84-4030

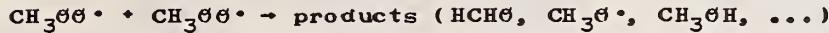
Demerjian, et al.

Hampson and Garvin

Heicklen, J.

Heicklen and Johnston

Niki, et al.

AESTC9-1974-4-1 (review)
NBTNAE-1975-866-73 (review)
ADCSAJ-1968-76-23 (review)
JACSAT-1962-84-4030 (mechanism)
ADCSAJ-1972-113-16 (review)

Allara, et al.

Allara, et al.

Demerjian, et al.

Dever and Calvert

Hampson and Garvin

Heicklen, J.

Heicklen and Johnston

Hoey and Kutschke

Knox, J. H.

Mantashyan, et al.

Niki, et al.

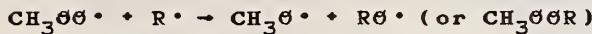
Parkes, D. A.

Simonaitis and Heicklen

Sokolova, et al.

Sokolova, et al.

Vardanyan and Nalbandyan

IJCKB0-1972-4-345 (calculation)
ADCSAJ-1968-76-40
AESTC9-1974-4-1 (review)
JACSAT-1962-84-1362
NBTNAE-1975-866-71 (review)
ADCSAJ-1968-76-23 (review)
JACSAT-1962-84-4030
CJCHAG-1955-33-496 (mechanism)
ARPCAW-1962-59-18 (review)
DKPCAG-1972-202-17
ADCSAJ-1972-113-16 (review)
SYMCAQ-1975-15-795
JPCHAX-1975-79-298
DKCHAY-1969-185-298
KICAA8-1973-14-977 (mechanism)
AYKZAN-1969-22-549

Heicklen, J.

ADCSAJ-1968-76-23 (review)



Allara, et al.

Demerjian, et al.

Falconer, et al.

Fisher and Tipper

Gray, J. A.

Karmilova, et al.

Kleimenov and Nalbandyan

Kleimenov and Nalbandyan

Kleimenov and Nalbandyan

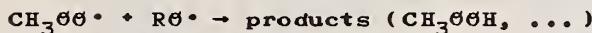
Kleimenov, et al.

Mantashyan and Nalbandyan

Mantashyan, et al.

Poroikova, et al.

Subbaratnam and Calvert

IJCKB0-1972-4-345 (calculation)
AESTC9-1974-4-1 (review)
JCSOA9-1961-4285
NATUAS-1962-195-489 (mechanism)
JCSOA9-1952-3150 (mechanism)
ZFKHA9-1956-30-798
DKPCAG-1958-122-667
DKPCAG-1959-124-5
RCBUAU-1960-11-391
ZFKHA9-1956-30-794
IARKAZ-1962-15-3
IARKAZ-1961-14-185
KICAA8-1967-8-988
JACSAT-1962-84-1113

Demerjian, et al.

Dever and Calvert

Heicklen, J.

Heicklen and Johnston

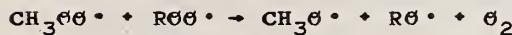
Mantashyan, et al.

Parkes, D. A.

Sokolova, et al.

Sokolova, et al.

Sokolova, et al.

AESTC9-1974-4-1 (review)
JACSAT-1962-84-1362
ADCSAJ-1968-76-23 (review)
JACSAT-1962-84-4030
DKPCAG-1972-202-17
SYMCAQ-1975-15-695
DKCHAY-1969-185-298
RZKHAR-1972-5B1168
KICAA8-1973-14-977 (mechanism)

Allara, et al.

Allara, et al.

Baldwin and Walker

Parkes, D. A.

IJCKB0-1972-4-345 (calculation)
ADCSAJ-1968-76-40
CBFMA0-1973-21-55 (review)
SYMCAQ-1975-15-795



Demerjian, et al.

AESTC9-1974-4-1 (review)



Demerjian, et al.

AESTC9-1974-4-1 (review)



Demerjian, et al.

AESTC9-1974-4-1 (review)



Avramenko and Kolesnikova DANKAS-1953-91-107

Avramenko and Kolesnikova BACCAT-1971-20-2562

Avramenko, et al. BACCAT-1961-552

Herron and Huie JPCRBU-1973-2-467 (review)

Huie and Herron PRKNAZ-1975-8-1 (review)

Knox, J. H. ARPCAW-1962-59-18 (review)

LeFevre, et al. IJCKBD-1972-4-103

Moshkina, et al. BACCAT-1959-1654



Batten, J. J. AJCHAS-1964-17-172

Batten, J. J. AJCHAS-1964-17-539

Bell and Tipper PRLAAZ-1957-238-256

Bone and Gardner PRLAAZ-1936-154-297

Bunev, V. A. CESWA4-1972-8-224

Cooke, et al. CBFMAG-1971-16-233

De Wilde and Van Tiggelen BSCBAG-1968-77-67 (generalized mechanism)

Enikolopyan and Bel'govskii RJPCAR-1960-34-749

Fort and Hinshelwood PRLAAZ-1930-129-284

Minkoff and Tipper BDKA7-1962-184 (review)

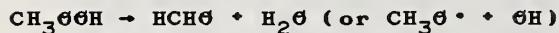
Wiser and Hill SYMCAQ-1955-5-553 (mechanism)



Wiser and Hill SYMCAQ-1955-5-553 (mechanism)



Bell and Tipper PRLAAZ-1957-238-256



Benson and O'Neal NSRDAP-1970-21-435 (review)

Blat, et al. ACPYAR-1939-10-273

Fisher and Tipper NATUAS-1962-195-489

Heicklen and Johnston JACSAT-1962-84-4030

Kirk and Knox TFSO4-1960-56-1296



Kleimenov and Nalbandyan DKPCAG-1958-118-9

C₂ Compounds

CH=C[•] + O → CH + CO
Glass, et al.
Williams and Smith

JCP SA 6-1965-42-608
CHREAY-1970-70-267 (review)

Bowman and Seery	CBFMA6-1968-12-611	(mechanism)
Glass, et al.	JCPSA6-1965-42-608	
Glass, et al.	SYMCQ6-1965-10-513	(mechanism)
Matsuda, et al.	JCPSA6-1972-57-5277	
Williams and Smith	CHREAY-1970-70-267	(review)

$$\text{CH}=\text{CH} + \Theta \rightarrow \text{products} \left(:\text{CH}_2, \text{CH}=\text{C}^{\bullet}, \text{CH}=\text{C}=\Theta, \dots \right)$$

Arrington, et al.	JCPSA6-1965-43-525
Avramenko, et al.	BACCAT-1965-396
Bradley and Tse	TFSGA4-1969-65-2685
Brown and Thrush	TFSGA4-1967-63-630
Browne, et al.	SYMCAQ-1969-12-1035
Eberius, et al.	SYMCAQ-1973-14-147
Fenimore and Jones	JCPSA6-1963-39-1514
Frazier and Kooyman	CESCAC-1968-23-353
Gaedtke, et al.	SYMCAQ-1973-14-295
Glass, et al.	JCPSA6-1965-42-608
Glass, et al.	SYMCAQ-1965-10-513
Haller and Pimentel	JACSAT-1962-84-2855
Herron and Huie	JPCRBU-1973-2-467
Hoyermann, et al.	ZPCFAX-1967-55-72
Hoyermann, et al.	ZPCFAX-1969-63-193
Huie and Herron	PRKNAZ-1975-8-1
James and Glass	JCPSA6-1969-50-2268
Jones and Bayes	JACSAT-1972-94-6869
Jones and Bayes	PRLAAZ-1973-335-547
Jones and Bayes	SYMCAQ-1973-14-277
Kanofsky, et al.	ACSRAL-1973-166-PHYS-140
Peeters and Mahnen	(mechanism)
Peeters and Vinckier	B00KAT-1973-53
Saunders and Heicklen	SYMCAQ-1975-15-969
Schofield, K.	JPCHAX-1966-70-1950
Stuhl and Niki	PLSSAE-1967-15-643
Sullivan and Warneck	JCPSA6-1971-55-3954
Takahashi, S.	JPCHAX-1965-69-1749
Westenberg and de Haas	MDPCAW-1971-11-405
Williams and Smith	JPCHAX-1969-73-1181
Williamson, D. G.	CHREAY-1970-70-267
Williamson and Bayes	JPCHAX-1971-75-4053
	(review)
	(mechanism)
	(mechanism)

$\text{CH}=\text{CH} + \text{O}_2 \rightarrow \text{products (overall)}$

Bradley and Kistiakowsky	JCPSA6-1961-35-264
Fenimore and Jones	JCPSA6-1963-39-1514
Gardiner, W. C., Jr.	JCPSA6-1961-35-2252
Homer and Kistiakowsky	JCPSA6-1967-47-5290
Karpov, V. P.	APCSC3-1971-2-157
Kistiakowsky and Richards	JCPSA6-1962-36-1707
Matsuda, et al.	JCPSA6-1972-57-5277
Minkoff and Tipper	B60KA7-1962-151 (review)
Mullins, B. P.	FUELAC-1953-32-343
Norrish and Reagh	PRLAAZ-1940-176-429
Semenov, N.	B60KA7-1935-394 (review)
Shtern, V. Ya.	B60KA7-1964 (review)
Spence and Kistiakowsky	JACSAT-1930-52-4837
Westenberg and Fristrom	SYMCAQ-1965-10-473
Van Wonteghem and Van Tiggelen	SYMCAQ-1955-5-637
White, D. R.	SYMCAQ-1967-11-147
Williams and Smith	CHREAY-1970-70-267 (review)

$$\text{CH}=\text{CH} + \text{O}_2 \rightarrow \text{products}$$

DeMore, W. B.

IJCKB6-1969-1-209

CH=CH + O₃ → product (Cont'd)

Hanst, et al. ACPCAT-1959-136-A7
Schofield, K. PLSSAE-1967-15-643 (review)
Stedman and Niki EVLTAX-1973-4-303

CH=CH + OH → products (CH₃*, CH≡C*, ...)

Bradley and Tse TFSQA4-1969-65-2685
Davis, et al. JCPSA6-1975-63-1707
Drysdale and Lloyd OXCRA4-1970-4-157 (review)
Eberius, et al. SYMCAQ-1973-14-147
Glass, et al. JCPSA6-1965-42-608
Glass, et al. SYMCAQ-1965-10-513 (mechanism)
Hampson and Garvin NBTNAE-1975-866-59 (review)
Kanofsky, et al. ACSRAL-1973-166-PHYS-140 (mechanism)
Pastrana V. A. DABBA-1974-34-5448
Schofield, K. PLSSAE-1969-15-643 (review)
Williams and Smith CHREAY-1970-70-267 (review)
Wilson, Wm. E., Jr. JPCRBU-1972-1-535 (review)

CH=CH + *CH=C=O → products
Jones and Bayes

SYMCAQ-1973-14-277

CH₂=CH· + O₂ → products (*CH₃, HCH₃, CH≡CH, CH₂=CH·, ...)

Cooke and Williams SYMCAQ-1971-13-757 (evaluation)
Hidaka, et al. BCSJA8-1974-47-2166
Stern and Polyak DANKAS-1952-85-161
Slagle, I. R. DABBA-1974-35-766
Suzuki, et al. ASACAW-1973-18-359

CH₂=CH₂ + O → products (HCH₃, CH₃*, CH₂=CH*, ...)

Atkinson and Cvetanović JCPSA6-1972-56-432
Atkinson and Pitts CHPLBC-1974-27-467
Avramenko and Kolesnikova 18VHAX-1955-7
Avramenko and Kolesnikova ZFKHA9-1956-30-581 (mechanism)
Avramenko and Kolesnikova BACCAT-1971-20-2556
Avramenko, et al. BACCAT-1963-30
Baldwin and Walker XADRC-1968-AD 678631
Bradley, et al. JCFTAR-1973-69-1889
Brown and Thrush TFSQA4-1967-63-630
Cvetanović, R. J. JCPSA6-1955-23-1375
Cvetanović, R. J. JCPSA6-1956-25-376
Cvetanović, R. J. JCPSA6-1959-30-19
Cvetanović, R. J. JCPSA6-1960-33-1063
Cvetanović, R. J. CJCHAG-1960-38-1678 (review)
Cvetanović, R. J. ADPCA2-1963-1-115 (review)
Davis, et al. JCPSA6-1972-56-4868
DeMore, W. B. CHPLBC-1972-16-608
Elias, L. JCPSA6-1963-38-989
Elias and Schiff CJCHAG-1960-38-1657
Eusuf and Wagner BBPCAX-1972-76-437 (mechanism)
Fenimore and Jones SYMCAQ-1963-9-597
Ford and Endow JCPSA6-1957-27-1277
Furuyama, et al. IJCKBQ-1974-6-741
Gaedtke, et al. SYMCAQ-1973-14-295
Hampson and Garvin NBTNAE-1975-866-19 (review)
Havel, J. J. JACSAT-1974-96-530 (review)
Herron and Huie JPCRBU-1973-2-467 (review)
Huie and Herron PRKNAZ-1975-8-1 (review)
Jaffe and Keith JCPSA6-1968-48-2805
Kanofsky and Gutman CHPLBC-1972-15-236
Kanofsky, et al. SYMCAQ-1973-14-285
Kurylo and Huie JCPSA6-1973-58-1258
Niki, et al. JCPSA6-1968-48-5729
Niki, et al. SYMCAQ-1969-12-277
Norrish, R. G. W. RIFPA9-1949-4-288
Peeters and Mahnen BQKAT-1973-53
Ponomarev, A. N. KICAA8-1966-7-214
Saunders and Heicklen JPCHAX-1966-70-1950
Schofield, K. PLSSAE-1967-15-643 (review)
Slagle, et al. SYMCAQ-1975-15-785
Slagle, et al. IJCKBQ-1974-6-111
Stuhl and Niki JCPSA6-1971-55-3954
Stuhl and Niki JCPSA6-1972-57-5403
Tanaka, et al. JETAAK-1967-5-62
Thrush, B. A. BBPCAX-1968-72-966 (mechanism)

$\text{CH}_2=\text{CH}_2 + \text{O} \rightarrow \text{products} (\text{HCH}\text{O}, \text{CH}_3^{\bullet}, \text{CH}_2=\text{CH}^{\bullet}, \dots)$ (Cont'd)Washida and Bayes
Westenberg and de HaasCHPLBC-1973-23-373
SYMCAQ-1969-12-289 $\text{CH}_2=\text{CH}_2 + \text{O}_2 \rightarrow \text{products (overall)}$

Falconer, et al.	JCS\AA-1961-782
Gay, et al.	JCP\AA-1967-47-313
Harding and Norrish	NATUAS-1949-163-797
Harding and Norrish	PRLAAZ-1952-212-291
Hidaka, et al.	BCS\AA-1974-47-2166
Homer and Kistiakowsky	JCP\AA-1967-47-5290
Knox, J. H.	B\AA\KAT-1967-250 (review)
Knox and Wells	TF\AA-1963-59-2786
Minkoff and Tipper	B\AA\KAT-1962-151 (review)
Norrish, R. G. W.	RIFPA-1949-4-288 (mechanism)
Norrish and Buckler	B\AA\KAT-1941-385 (review)
Norrish and Patnaik	NATUAS-1949-163-883
Norrish and Reagh	PRLAAZ-1940-176-429
Semenov, N.	B\AA\KAT-1935-339 (review)
Shtern, V. Ya.	B\AA\KAT-1964 (review)
Slagle, I. R.	DABBA-1974-35-766
Suzuki, et al.	ASACAW-1973-18-359
Thompson and Hinshelwood	PRLAAZ-1929-125-277
Westenberg and Fristrom	SYMCAQ-1965-10-473
White, D. R.	SYMCAQ-1967-11-147
Yoshizawa and Kawada	BJSEA-1973-16-576

 $\text{CH}_2=\text{CH}_2 + \text{O}_2 (+ \text{M}) \rightarrow \text{HCH}\text{O} + \text{HCH}\text{O} (+ \text{M})$

Harding and Norrish

PRLAAZ-1952-212-291

 $\text{CH}_2=\text{CH}_2 + \text{O}_3 \rightarrow \text{products}$

Becker, et al.	IJCKB\AA-1974-6-725
Buinalini and Altshuller	CJCHAG-1965-43-2243
Cadle and Schadt	JACSAT-1952-74-6002
DeMore, W. B.	IJCKB\AA-1969-1-209
Hampson and Garvin	NBTNAE-1975-866-31 (review)
Hanst, et al.	ACPCAT-1959-136-A7
Herron and Huie	JPCHAX-1974-78-2085
Huie and Herron	IJCKB\AA-1975-7-Sup. 1
Japar, et al.	JPCHAX-1974-78-2318
Pitts and Finlayson	XADRC-1973-AD 763755
Schofield, K.	PLSSAE-1967-15-643 (review)
Semenov, N.	B\AA\KAT-1935-339 (review)
Stedman, et al.	JPCHAX-1973-77-2511
Vrbaski and Cvetanović	CJCHAG-1960-38-1053
Wei and Cvetanović	CJCHAG-1963-41-913

 $\text{CH}_2=\text{CH}_2 + \text{OH} \rightarrow \text{products} (\text{HCH}\text{O}, \text{CH}_2=\text{CH}^{\bullet}, \dots)$

Baldwin and Walker	XADRC-1968-AD 678631
Davis, et al.	JCP\AA-1975-63-1707
Drysdale and Lloyd	\AA\CR\AA-1970-4-157 (review)
Greiner, N. R.	JCP\AA-1970-53-1284
Hampson and Garvin	NBTNAE-1975-866-58 (review)
Harding and Norrish	PRLAAZ-1952-212-291 (mechanism)
Hoare and Patel	TFS\AA-1969-65-1325
Morris and Niki	JPCHAX-1971-75-3640
Morris, et al.	ACSRAL-1970-160-PHYS-119
Morris, et al.	JACSAT-1971-93-3570
Norrish, R. G. W.	RIFPA-1949-4-288 (mechanism)
Pastrana V. A.	DABBA-1974-34-5448
Schofield, K.	PLSSAE-1967-15-643 (review)
Suzuki, et al.	ASACAW-1973-18-359 (mechanism)
Westenberg and Fristrom	SYMCAQ-1965-10-473
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)

 $\text{CH}_2=\text{CH}_2 + \text{HO} \rightarrow \text{products} (\text{CH}_3=\text{CH}^{\bullet}, \dots)$

Baldwin and Walker	XADRC-1968-AD 678631
Hampson and Garvin	NBTNAE-1975-866-63 (review)
Hoare and Patel	TFS\AA-1969-65-1325
Lloyd, A. C.	IJCKB\AA-1974-6-169 (review)

$\text{CH}_3\text{CH}_2 \cdot + \text{O} \rightarrow \text{products}$ Herron, J. T.
Huie and HerronIJCKB θ -1969-1-527 (review)
PRKNAZ-1975-8-1 (review) $\text{CH}_3\text{CH}_2 \cdot + \text{O}_2 (+\text{M}) \rightarrow \text{products} (\text{HCH}\theta, \text{CH}_2=\text{CH}_2, \text{CH}_3\text{CH}\theta, \dots)$

Allara, et al. IJCKB θ -1972-4-345 (calculation)
 Atkinson, et al. JACSAT-1973-95-7592 (mechanism)
 Avramenko and Kolesnikova DANKAS-1953-89-1037
 Avramenko and Kolesnikova BACCAT-1960-755
 Avramenko and Kolesnikova BACCAT-1960-924
 Baker, et al. SYMCAQ-1971-13-291
 Baldwin and Simmons TFS θ A4-1957-53-955
 Baldwin and Simmons TFS θ A4-1957-53-964
 Baldwin and Walker SYMCAQ-1973-14-241 (review)
 Baldwin, et al. SYMCAQ-1955-5-502
 Baldwin, et al. ADCSAJ-1968-76-124
 Baldwin, et al. TFS θ A4-1970-66-189
 Baldwin, et al. SYMCAQ-1971-13-251
 Callear and Pereira TFS θ A4-1963-59-2774 (mechanism)
 Cooke and Williams SYMCAQ-1971-13-757 (evaluation)
 Cusin and James JCPBAN-1962-59-454
 Demerjian, et al. AESTC9-1974-4-1 (review)
 Dingledy and Calvert JACSAT-1963-85-856
 Finkelstein and Noyes DFS θ AW-1953-14-76
 Geisbrecht and Daubert IEPDAW-1975-14-159
 Goldfinger, et al. TFS θ A4-1965-61-1933
 Gray, J. A. JCS θ A9-1952-3150 (mechanism)
 Jolley, J. E. JACSAT-1957-79-1537
 Knox and Wells TFS θ A4-1963-59-2801
 McMillan and Calvert SXCR θ A4-1965-1-83 (review)
 Niki, et al. ADCSAJ-1972-11-3-16 (review)
 Salooja, K. C. CBFMA θ -1965-9-33 (mechanism)
 Sochet, et al. BSCFAS-1968-3596 (mechanism)
 Taylor and Kulich IJCKB θ -1973-5-455

 $\text{CH}_3\text{CH}_2 \cdot + \text{O}_3 \rightarrow \text{CH}_3\text{CH}_2\text{O} \cdot + \text{O}_2$

Atkinson, et al.

JACSAT-1973-95-7592 (mechanism)

 $\text{CH}_3\text{CH}_2 \cdot + \text{OH} (+\text{M}) \rightarrow \text{products} (\text{CH}_2=\text{CH}_2, \text{CH}_3\text{CH}_2\text{OH}, \dots)$

Avramenko and Kolesnikova DANKAS-1953-89-1037
 Cooke and Williams SYMCAQ-1971-13-757 (evaluation)
 Greiner, N. R. JCP θ A6-1970-53-1070

 $\text{CH}_3\text{CH}_2 \cdot + \text{R}\theta \cdot \rightarrow \text{CH}_2=\text{CH}_2 + \text{R}\theta\text{H} (\text{or } \text{CH}_3\text{CH}_2\theta\text{R})$ Gray, et al.
Heicklen, J.
McMillan and CalvertPRKNAZ-1967-4-63 (review)
ADCSAJ-1968-76-23 (review)
SXCR θ A4-1965-1-83 (review) $\text{CH}_3\text{CH}_2 \cdot + \text{RCH}\theta \rightarrow \text{CH}_3\text{CH}_3 + \text{RC}(\theta)\cdot$

Baldwin, et al.

SYMCAQ-1971-13-251

 $\text{CH}_3\text{CH}_3 \cdot + \text{O} \rightarrow \text{products} (\text{HCH}\theta, \text{CH}_3\cdot, \text{CH}_3\theta\cdot, \text{CH}_2=\text{CH}_2, \dots)$

Avramenko and Kolesnikova DANKAS-1953-89-1037
 Avramenko and Kolesnikova BACCAT-1955-345
 Avramenko and Kolesnikova 11RFAQ-1954-51
 Avramenko and Kolesnikova BACCAT-1971-20-2556
 Avramenko and Kolesnikova BACCAT-1971-20-2556
 Avramenko, et al. BACCAT-1963-557
 Azatyan, et al. DKCHAY-1962-147-973
 Azatyan, et al. DKPCAG-1963-149-312
 Baldwin and Simmons TFS θ A4-1957-53-955
 Baldwin and Walker XADRCH-1968-AD 678631
 Baldwin, et al. TFS θ A4-1970-66-189
 Baldwin, et al. SYMCAQ-1965-10-423
 Bradley, et al. JCS θ A9-1971-326
 Hampson and Garvin NBTNAE-1975-866-19 (review)
 Herron, J. T. IJCKB θ -1969-1-527 (review)
 Herron and Huie JPCHAX-1969-73-3327

$\text{CH}_3\text{CH}_3 + \text{O} \rightarrow \text{products} (\text{HCHO}, \text{CH}_3\cdot, \text{CH}_3\text{O}\cdot, \text{CH}_2=\text{CH}_2, \dots)$	(Cont'd)
Herron and Huie	JPCRBU-1973-2-467 (review)
Huie and Herron	PRKNAZ-1975-8-1 (review)
Lin and DeMore	JPCHAX-1973-77-863 (mechanism)
Mayer and Schieler	JPCHAX-1968-72-2628 (calculation)
Michaud, et al.	JPCHAX-1974-78-1457
Papadopoulos, et al.	SYMCAQ-1971-13-281
Saunders and Heicklen	JPCHAX-1966-70-1950
Schofield, K.	PLSSAE-1967-15-643 (review)
Westenberg and de Haas	JCPSA6-1967-46-490 (review)
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)

$\text{CH}_3\text{CH}_3 + \text{O}_2 \rightarrow \text{products} (\text{overall})$

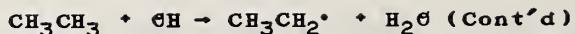
Andreev and Neiman	ZFKHA9-1933-4-33
Baldwin and Simmons	TFSGA4-1955-51-680
Bone and Hill	PRLAAZ-1930-129-434
Carabine and Knox	JCSGA9-1963-862
Cooke and Williams	SYMCAQ-1971-13-757
Crossley, et al.	CBFMA6-1972-19-373
Cullis, et al.	PRLAAZ-1963-276-527
Cusin and James	JCPBAN-1962-59-454
Déchaux and Antonik	CHDCAQ-1974-278-101
Enikolopian and Korolev	DKPCAG-1958-118-115
Falconer, et al.	JCSGA9-1961-782
Garibyan, et al.	AYKZAN-1972-25-95
Geisbrecht and Daubert	IEPDAW-1975-14-159
Irvine and Knox	BOGKA7-1975-733
Jacod, et al.	CHDCAQ-1969-269-1601
James, H.	RIFPA9-1958-13-338
Knox, J. H.	SYMCAQ-1959-7-122
Knox, J. H.	TFSGA4-1959-55-1362
Knox and Norrish	TFSGA4-1954-50-928
Knox and Wells	TFSGA4-1963-59-2786
Knox, et al.	TFSGA4-1958-54-1509
Kowalsky and Sadovnikov	PHZSAL-1932-1-567
Kowalsky, et al.	PHZSAL-1932-1-451
Lewis and Von Elbe	BOGKA7-1961-90 (review)
Locqueneux-Lefebvre and James	BSCFA8-1969-1862 (review)
Minkoff and Tipper	BOGKA7-1962-151 (review)
Moshkina, et al.	RZKHAR-1972-5B1155
Moshkina, et al.	KICAA8-1974-15-250
Moshkina, et al.	DKPCAG-1974-218-987
Mulcahy, M. F. R.	DFSGAW-1947-2-128
Mullins, B. P.	FUELAC-1953-32-343
Newitt and Gardner	PRLAAZ-1936-154-329
Norrish and Reagh	PRLAAZ-1940-176-429
Sadovnikov, P.	ZFKHA9-1937-9-575
Sampson, R. J.	JCSGA9-1963-5095
Semenov, N. N.	PHZSAL-1932-1-546
Semenov, N.	BOGKA7-1935-309 (review)
Semenov, N. N.	BOGKA7-1959-2-217 (review)
Shtern, V. Ya.	BOGKA7-1964 (review)
Sochet, et al.	JCPBAN-1966-63-1555
Taylor and Kulich	IJCKB6-1973-5-455
Watson and Darwent	JPCHAX-1957-61-577
Westenberg and Fristrom	SYMCAQ-1965-10-473

$\text{CH}_3\text{CH}_3 + \text{O}_3 \rightarrow \text{products}$

Dillemuth and Schubert	WSCPAH-1963-No. 63-22
Morrissey, R. J.	DIASA9-1962-23-89
Morrissey and Schubert	CBFMA6-1963-7-263
Schofield, K.	PLSSAE-1967-15-643 (review)

$\text{CH}_3\text{CH}_3 + \text{OH} \rightarrow \text{CH}_3\text{CH}_2\cdot + \text{H}_2\text{O}$

Baker, et al.	SYMCAQ-1971-13-291
Baldwin and Simmons	TFSGA4-1955-51-680
Baldwin and Simmons	TFSGA4-1967-53-964
Baldwin and Simmons	TFSGA4-1957-53-955
Baldwin and Walker	XADRCH-1968-AD 678631
Baldwin, et al.	TFSGA4-1962-58-60
Baldwin, et al.	SYMCAQ-1955-5-502
Baldwin, et al.	ADCSAJ-1968-76-124
Baldwin, et al.	TFSGA4-1970-66-189
Baldwin, et al.	SYMCAQ-1965-10-423
Drysdale and Lloyd	OXCRA4-1970-4-157 (review)
Falconer, et al.	JCSGA9-1961-4285



Fenimore and Jones	SYMCAQ-1963-9-597
Greiner, N. R.	JCPA6-1967-46-3389
Greiner, N. R.	JCPA6-1968-48-1413
Greiner, N. R.	JCPA6-1970-53-1070
Greiner, N. R.	JCPA6-1970-53-1285
Hampson and Garvin	NBTNAE-1975-866-58 (review)
Herron, J. T.	IJCKB6-1969-1-527 (review)
Hoare and Patel	TFS6A4-1969-65-1325
Horne and Norrish	NATUAS-1967-215-1373
Mantashyan and Nalbandyan	IARKAZ-1961-14-527
Papadopoulos, et al.	SYMCAQ-1971-13-281
Schofield, K.	PLSSAE-1967-15-643 (review)
Taylor and Kulich	IJCKB6-1973-5-455 (mechanism)
Westenberg and Fristrom	SYMCAQ-1965-10-473
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)



Baldwin and Walker
 Baldwin, et al.
 Baldwin, et al.
 Hampson and Garvin
 Hoare and Patel
 Knox and Wells
 Lloyd, A. C.
 Schofield, K.
 Taylor and Kulich

XADRCH-1968-AD 678631
TFSA4-1970-66-189
SYMCAQ-1971-13-251
NBTNAE-1975-866-63 (review)
TFSA4-1969-65-1325
TFSA4-1963-59-2786
IJCKB6-1974-6-169 (review)
PLSSAE-1967-15-643 (review)
IJCKB6-1973-5-455 (mechanism)



Falconer, et al.

JCS6A9-1961-4285



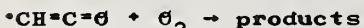
Falconer, et al.

JCS6A9-1961-4285



Huie and Herron
 Jones and Bayes
 Jones and Bayes

PRKNAZ-1975-8-1 (review)
 PRLAAZ-1973-335-547
 SYMCAQ-1973-14-277



Jones and Bayes

PRLAAZ-1973-335-547



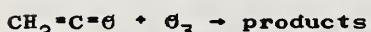
Jones and Bayes

SYMCAQ-1973-14-277



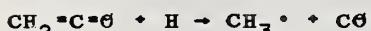
Carr, et al.
 Jones and Bayes
 Mack and Thrush

JCPA6-1968-49-846
 PRLAAZ-1973-335-547
 JCFTAR-1974-70-187



Hanst, et al.

ACPCAT-1959-136-A7



Carr, et al.

JCPA6-1968-49-846



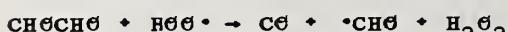
Terao, et al.

JACSAT-1963-85-3919



Hay, J. M.

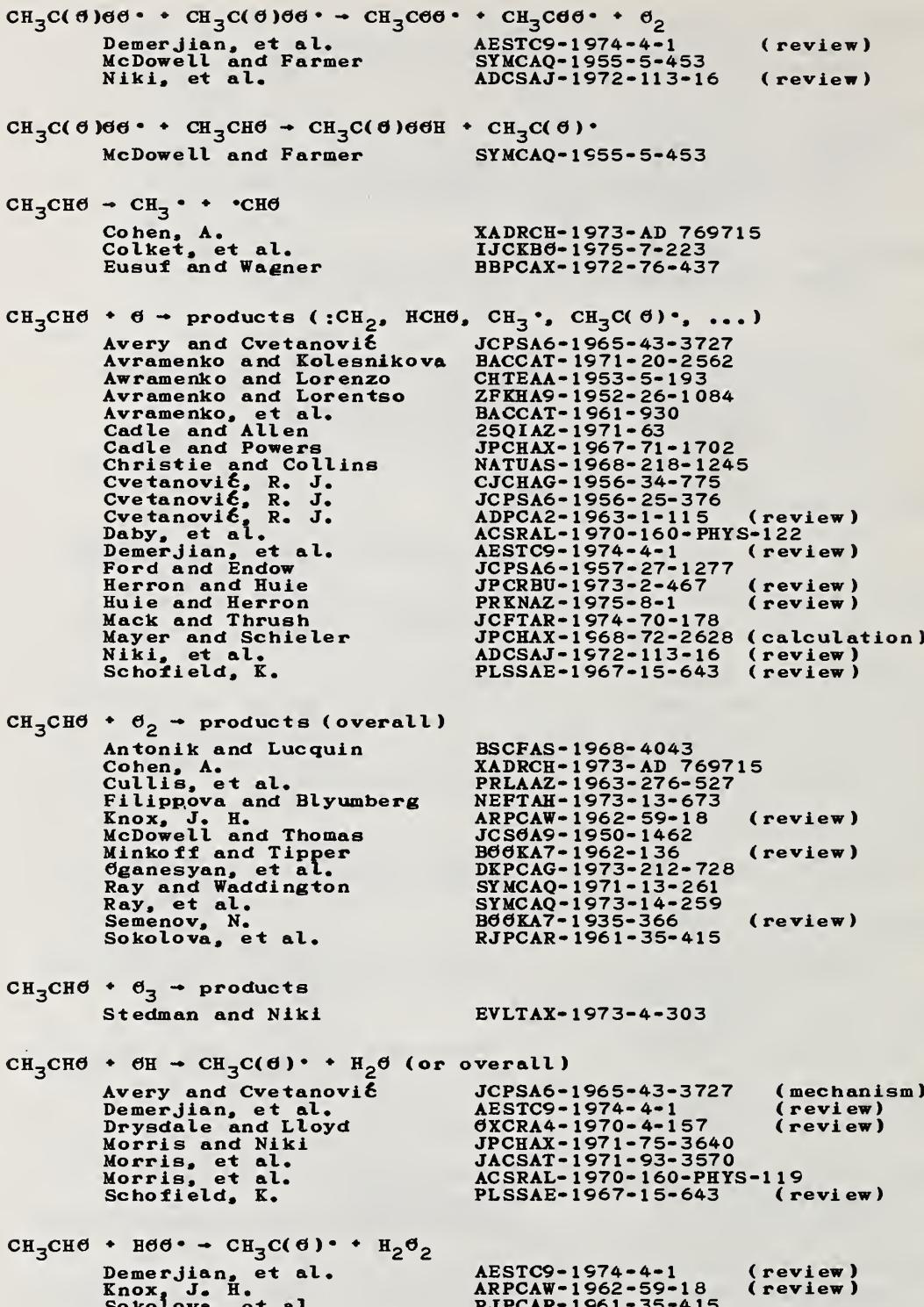
JCS6A9-1965-7388



Hay, J. M.

JCS6A9-1965-7388

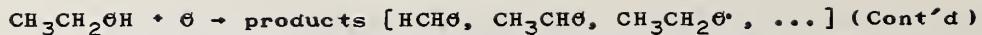
$\text{CH}_2=\text{CH}(\text{O}^\bullet)$, or $\text{^CH}_2\text{CHO}^\bullet$ (+M) \rightarrow $\text{CH}=\text{CH} + \text{OH}$ (or $\text{CH}_2=\text{C=O} + \text{H}$) (+M)		
Colket, et al.	IJCKBG-1975-7-223	
Suzuki, et al.	ASACAW-1973-18-359	(mechanism)
$\text{CH}_3\text{C}(\text{O})^\bullet$ (+M) \rightarrow $\text{CH}_3\text{O}^\bullet + \text{CO}$ (+M)		
Benson and O'Neal	NSRDAP-1970-21-589	(review)
Calvert, J. G.	JPCHAX-1957-61-1206	
Hoare and Whytock	CJCHAG-1967-45-2741	
Sokolova, et al.	KICAA8-1973-14-977	(mechanism)
$\text{CH}_2=\text{CH}(\text{O}^\bullet)$, [or $\text{^CH}_2\text{CHO}^\bullet$] + O_2 \rightarrow products		
Polyak and Shtern	DANKAS-1954-95-1231	
Suzuki, et al.	ASACAW-1973-18-359	
$\text{CH}_3\text{C}(\text{O})^\bullet + \text{O}_2 \rightarrow \text{CH}_3\text{C}(\text{O})\text{OO}^\bullet$		
Atkinson, et al.	JACSAT-1973-95-7592	(mechanism)
Demerjian, et al.	AESTC9-1974-4-1	(review)
Hoare and Wellington	SYMCAQ-1962-8-472	
Hoare and Whytock	CJCHAG-1967-45-2741	
Niki, et al.	ADCSAJ-1972-113-16	(review)
Sokolova, et al.	KICAA8-1973-14-977	(mechanism)
$\text{CH}_3\text{C}(\text{O})^\bullet + \text{CH}_3\text{C}(\text{O})^\bullet \rightarrow \text{CH}_3\text{C}(\text{O})\text{C}(\text{O})\text{CH}_3$		
Avery and Cvetanovic	JCPAS6-1965-43-3727	(mechanism)
Sokolova, et al.	KICAA8-1973-14-977	(mechanism)
$\text{CH}_3\text{C}(\text{O})^\bullet + \text{CH}_3\text{CH}(\text{OH})^\bullet \rightarrow \text{CH}_3\text{CH}(\text{OH})\text{C}(\text{O})\text{CH}_3$ [or $\text{CH}_3\text{CH}(\text{O}) + \text{CH}_3\text{CH}(\text{O})$]		
Kato and Cvetanovic	CJCHAG-1967-45-1845	
$\text{CH}_2=\text{CH}(\text{O}^\bullet)$, [or $\text{^CH}_2\text{CHO}^\bullet$] + RH \rightarrow $\text{CH}_3\text{CHO}^\bullet + \text{R}^\bullet$		
Polyak and Shtern	DANKAS-1954-95-1231	
$\text{CH}_3\text{C}(\text{O})^\bullet + \text{RH} \rightarrow \text{CH}_3\text{CHO}^\bullet + \text{R}^\bullet$		
Hoare and Wellington	SYMCAQ-1962-8-472	
$\text{CH}_3\text{COO}^\bullet \rightarrow \text{CH}_3^\bullet + \text{CO}_2$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
Niki, et al.	ADCSAJ-1972-113-16	(review)
$\text{^OCH}_2\text{CHO}^\bullet \rightarrow \text{HCHO}^\bullet + \text{^OCH}_2$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
Geisbrecht and Daubert	IEPDAW-1975-14-159	
$\text{CH}_3\text{COO}^\bullet + \text{RH} \rightarrow \text{CH}_3\text{COOH}^\bullet + \text{R}^\bullet$		
Varkey and Sandler	CBFMAG-1969-13-223	(mechanism)
$\text{^OCH}_2\text{CHO}^\bullet + \text{RH} \rightarrow \text{HOCH}_2\text{CHO}^\bullet + \text{R}^\bullet$		
Geisbrecht and Daubert	IEPDAW-1975-14-159	
$\text{CH}_3\text{C}(\text{O})\text{OO}^\bullet + \text{HO}^\bullet \rightarrow \text{CH}_3\text{C}(\text{O})\text{OOH}^\bullet + \text{O}_2$ [or $\text{CH}_3\text{COO}^\bullet + \text{OH}^\bullet + \text{O}_2$]		
Demerjian, et al.	AESTC9-1974-4-1	(review)
Niki, et al.	ADCSAJ-1972-113-16	(review)
$\text{CH}_3\text{C}(\text{O})\text{OO}^\bullet \rightarrow \text{CH}_3\text{O}^\bullet + \text{CO}_2$		
Sokolova, et al.	KICAA8-1973-14-977	(mechanism)



$\text{CH}_3\text{CH}\theta + \text{R}\cdot \rightarrow \text{CH}_3\text{C}(\theta)\cdot + \text{RH}$	
Artsis, et al.	KICAA8-1972-13-1006
Baldwin, et al.	SYMCAQ-1971-13-251
Cohen, A.	XADRCH-1973-AD 769715
Colket, et al.	IJCKB\theta-1975-7-223
Sokolova, et al.	KICAA8-1973-14-977 (mechanism)
$\text{CH}_3\text{CH}\theta + \text{CH}_3\text{C}(\theta)\theta\theta\cdot \rightarrow \text{CH}_3\text{C}(\theta)\cdot + \text{CH}_3\text{C}(\theta)\theta\theta\text{H}$	
McDowell and Farmer	SYMCAQ-1955-5-453
$\text{CH}_3\text{CH}\theta + \text{R}\theta\cdot \rightarrow \text{CH}_3\text{C}(\theta)\cdot + \text{R}\theta\text{H}$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}(\theta\cdot)_2 + \theta_2 \rightarrow \text{CH}_3\text{C}\theta\theta\cdot + \text{H}\theta\theta\cdot$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}(\cdot)\theta\theta\cdot + \theta_2 \rightarrow \text{CH}_3\text{CH}(\theta\theta\cdot)_2$ [or $\text{CH}_3\text{CH}\theta + \theta_3$]	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{C}(\theta)\theta\theta\cdot \rightarrow \text{CH}_3\text{C}\theta\theta\cdot + \theta\text{H}$	
McDowell and Farmer	SYMCAQ-1955-5-453
$\text{CH}_3\text{CH}(\theta\theta\cdot)_2 \rightarrow \text{CH}_3\text{CH}(\theta\cdot)_2 + \theta_2$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}_2\theta\cdot (+\text{M}) \rightarrow \text{products} [\text{HCH}\theta, \text{CH}_3\text{CH}\theta, \dots]$	
Badrian, et al.	RJPCAR-1959-33-580
Baldwin and Walker	CBFMA\theta-1973-21-55 (review)
Benson and \theta'Neal	NSRDP-1970-21-592 (review)
Demerjian, et al.	AESTC9-1974-4-1 (review)
Geisbrecht and Daubert	IEPDW-1975-14-159
Gray, et al.	PRKNAZ-1967-4-63 (review)
Heicklen, J.	ADCSAJ-1968-76-23 (review)
McMillan and Calvert	\thetaXCRA4-1965-1-83 (review)
Poroikova and Nalbandyan	DKCHAY-1965-163-774
Sochet, et al.	ADCSAJ-1968-76-111 (mechanism)
$\text{CH}_3\text{CH}_2\theta\cdot + \theta_2 \rightarrow \text{CH}_3\text{CH}\theta + \text{H}\theta\theta\cdot$	
Baldwin and Walker	CBFMA\theta-1973-21-55 (review)
Demerjian, et al.	AESTC9-1974-4-1 (review)
Heicklen and Johnston	JACSAT-1962-84-4030
Jolley, J. E.	JACSAT-1957-79-1537
Niki, et al.	ADCSAJ-1972-113-16 (review)
Varkey and Sandler	CBFMA\theta-1969-13-223 (mechanism)
$\text{CH}_3\theta\text{CH}_2\cdot + \theta_2 \rightarrow \text{CH}_3\theta\text{CH}_2\theta\theta\cdot$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}(\cdot)\theta\text{H} + \theta_2 \rightarrow \text{CH}_3\text{CH}(\theta\theta\cdot)\theta\text{H}$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\theta\text{CH}_2\cdot + \theta\text{H} \rightarrow \text{CH}_3\theta\cdot + \cdot\text{CH}_2\theta\text{H}$	
Takezaki, et al.	BCSJAB-1966-39-1643 (mechanism)
$\text{CH}_3\text{CH}(\cdot)\theta\text{H} + \text{CH}_3\text{CH}(\cdot)\theta\text{H} \sim \text{CH}_3\text{CH}\theta + \text{CH}_3\text{CH}_2\theta\text{H}$	
Kato and Cvetanovic	CJCHAG-1967-45-1845

$\text{CH}_3\text{CH}_2\text{O}^\bullet + \text{RH} \rightarrow \text{CH}_3\text{CH}_2\text{OH} + \text{R}^\bullet$		
Badrian, et al. Geisbrecht and Daubert Heicklen, J. Moshkina, et al. Poroikova and Nalbandyan Salooja, K. C.	RJPCAR-1959-33-580 IEPDAW-1975-14-159 ADCSAJ-1968-76-23 KICAA8-1974-15-250 DKCHAY-1965-163-774 CBFMA8-1965-9-33	(review) (review) (review) (review) (mechanism)
$\text{CH}_3\text{CH}_2\text{O}^\bullet + \text{R}^\bullet \rightarrow \text{CH}_3\text{CH}\text{O} + \text{R}^\bullet\text{H}$		
Gray, et al. McMillan and Calvert	PRKNAZ-1967-4-63 OXCRA4-1965-1-83	(review) (review)
$\text{CH}_3\text{OCH}_2\text{O}^\bullet \rightarrow \text{HCH}\text{O} + \text{CH}_3\text{O}^\bullet$		
Benson and O'Neal Demerjian, et al.	NSRDAP-1970-21-603 AESTC9-1974-4-1	(review) (review)
$\text{CH}_3\text{OCH}_2\text{O}^\bullet \rightarrow \text{HCH}\text{O} + \text{CH}_3\text{O}^\bullet$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{OH} \rightarrow \text{CH}_3^\bullet + \text{HCOOH}$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{OH} \rightarrow \text{CH}_3\text{CH}\text{O} + \text{OH}^\bullet$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{OH} \rightarrow \text{HCOOH} + \text{CH}_3^\bullet$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}_2\text{O}^\bullet \rightarrow \text{products} [\text{HCH}\text{O}, \text{CH}_3\text{O}^\bullet, \text{CH}_3\text{CH}\text{O}, \dots]$		
Baldwin and Walker Geisbrecht and Daubert Goldfinger, et al. Heicklen, J. Knox and Wells Mantashyan and Nalbandyan Mantashyan and Nalbandyan Moshkina, et al. Poroikova, et al.	CBFMA8-1973-21-55 IEPDAW-1975-14-159 TFSOA4-1965-61-1933 ADCSAJ-1968-76-23 TFSOA4-1963-59-2801 IARKAZ-1961-14-527 IARKAZ-1962-15-3 KICAA8-1974-15-250 KICAA8-1967-8-988	(review) (review) (review) (review) (review) (review) (review) (review)
$^\bullet\text{CH}_2\text{CH}_2\text{O}^\bullet \rightarrow \text{CH}_3\text{CH}_2\text{O}^\bullet [\text{or } \text{CH}_2=\text{CH}_2 + \text{HO}^\bullet]$		
Geisbrecht and Daubert	IEPDAW-1975-14-159	
$\text{CH}_3\text{OCH}_2\text{O}^\bullet + \text{O}_2 \rightarrow \text{CH}_3\text{OCH}_2\text{OO}^\bullet$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{OCH}_2\text{O}^\bullet + \text{O}_2 \rightarrow \text{CH}_3\text{OCH}\text{O} + \text{HO}^\bullet$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{OH} + \text{O}_2 \rightarrow \text{CH}_3\text{CH}(\text{O}^\bullet)\text{OOH}$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{OH} + \text{O}_2 \rightarrow \text{CH}_3\text{COOH} + \text{HO}^\bullet$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$^\bullet\text{CH}_2\text{CH}_2\text{O}^\bullet + \text{O}_2 \rightarrow \text{O}^\bullet\text{CH}_2\text{CH}_2\text{O}^\bullet$		
Geisbrecht and Daubert	IEPDAW-1975-14-159	

$\text{CH}_3\text{CH}_2\text{OO} \cdot + \text{HOO} \cdot \rightarrow \text{CH}_3\text{CH}_2\text{O} \cdot + \text{OH} \cdot + \text{O}_2$ (or $\text{CH}_3\text{CH}_2\text{OH} + \text{O}_2$)	
Baldwin and Walker	CBFMAG-1973-21-55 (review)
Callear and Pereira	TFSGA4-1963-59-2774
Niki, et al.	ADCSAJ-1972-113-16 (review)
$\text{CH}_3\text{CH}_2\text{OO} \cdot + \text{RH} \rightarrow \text{CH}_3\text{CH}_2\text{O} \cdot + \text{R} \cdot$	
Allara, et al.	IJCKB0-1972-4-345 (calculation)
Baldwin and Walker	CBFMAG-1973-21-55 (review)
Geisbrecht and Daubert	IEPDW-1975-14-159
Gray, J. A.	JCSGA9-1952-3150 (mechanism)
Mantashyan and Nalbandyan	IARKAZ-1961-14-517
Mantashyan and Nalbandyan	IARKAZ-1961-14-527
Mantashyan and Nalbandyan	IARKAZ-1962-15-3
Poroikova, et al.	KICAA8-1967-8-988
Salooja, K. C.	CBFMAG-1965-9-33 (mechanism)
$\text{CH}_3\text{CH}_2\text{OO} \cdot + \text{RO} \cdot \rightarrow \text{CH}_3\text{CH}_2\text{O} \cdot + \text{R} \cdot + \text{O}_2$ [or $\text{CH}_3\text{CH} \cdot + \text{ROH} + \text{O}_2$]	
Allara, et al.	IJCKB0-1972-4-345 (calculation)
Baldwin and Walker	CBFMAG-1973-21-55 (review)
Niki, et al.	ADCSAJ-1972-113-16 (review)
$\text{CH}_3\text{OOCH}_2\text{O} \cdot \rightarrow \text{CH}_3\text{OO} \cdot + \text{HCHO}$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{OOCH}_2\text{O} \cdot + \text{O}_2 \rightarrow \text{CH}_3\text{OOCH} \cdot + \text{HO} \cdot$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}(\text{O} \cdot)\text{OOH} + \text{O}_2 \rightarrow \text{CH}_3\text{C}(\text{O})\text{OOH} + \text{HO} \cdot$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{OCH}_2\text{OO} \cdot + \text{HO} \cdot \rightarrow \text{CH}_3\text{OCH}_2\text{OOH} + \text{O}_2$ (or $\text{CH}_3\text{OCH}_2\text{O} \cdot + \text{OH} \cdot + \text{O}_2$)	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{OCH}_2\text{OO} \cdot + \text{RO} \cdot \rightarrow \text{CH}_3\text{OCH}_2\text{O} \cdot + \text{R} \cdot + \text{O}_2$	
Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{O} \cdot \text{OCH}_2\text{CH}_2\text{OOH} \rightarrow \text{products} (\text{CH}_2\text{CH}_2\text{OOH} + \text{O}_2, \dots)$	
Geisbrecht and Daubert	IEPDW-1975-14-159
$\text{CH}_3\text{OCH}_3 \rightarrow \text{CH}_3 \cdot + \text{CH}_3\text{O} \cdot$	
Benson and O'Neal	NSRDAP-1970-21-414 (review)
$\text{CH}_3\text{CH}_2\text{OH} \rightarrow \text{CH}_3 \cdot + \text{CH}_2\text{O} \cdot$ (or $\text{CH}_3\text{CH}_2 \cdot + \text{OH}$)	
Lin and DeMore	JPCHAX-1973-77-863
$\text{CH}_3\text{OCH}_3 + \text{O} \rightarrow \text{CH}_3\text{OCH}_2 \cdot + \text{OH}$	
Herron and Huie	JPCRBU-1973-2-467 (review)
Huie and Herron	PRKNAZ-1975-8-1 (review)
LeFevre, et al.	IJCKB0-1972-4-103
Marsh and Heicklen	JPCHAX-1967-71-250
Neumann and Jonathan	JCSPAC-1970-167
Takezaki, et al.	BCSJAS-1966-39-1643
Takezaki, et al.	BICRAS-1966-44-341
$\text{CH}_3\text{CH}_2\text{OH} + \text{O} \rightarrow \text{products} [\text{HCHO}, \text{CH}_3\text{CH} \cdot, \text{CH}_3\text{CH}_2\text{O} \cdot, \dots]$	
Avramenko and Kolesnikova	BACCAT-1971-20-2562
Avramenko, et al.	BACCAT-1967-19
Dzotsenidze, et al.	AYKZAN-1967-20-983
Herron and Huie	JPCRBU-1973-2-467 (review)



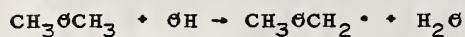
Huie and Herron
Kato and Cvetanovic

PRKNAZ-1975-8-1 (review)
CJCHAG-1967-45-1845



Cooke, et al.
Cullis and Newitt
Cullis and Newitt

CBFMAO-1971-16-233
PRLAAZ-1957-242-516
PRLAAZ-1956-237-530



Takezaki, et al.
Takezaki, et al.

BCSJAS-1966-39-1643 (mechanism)
BICRAS-1966-44-341



Benson and O'Neal
Gray, et al.
Hanst and Calvert

NSRDAP-1970-21-427 (review)
PRKNAZ-1967-4-63 (review)
JPCHAX-1959-63-104



Benson and O'Neal
Gray, et al.
Kirk and Knox
Salooja, K. C.

NSRDAP-1970-21-436 (review)
PRKNAZ-1967-4-63 (review)
TFSOA4-1960-56-1296
CBFMAO-1965-9-33 (mechanism)



Thynne and Gray

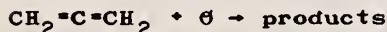
TFSOA4-1963-59-1149

C₃ Compounds



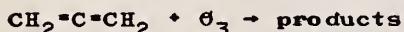
Brown and Thrush
Herron and Huie
Huie and Herron
Kanofsky, et al.

TFSGA4-1967-63-630
JPCRBU-1973-2-467 (review)
PRKNAZ-1975-8-1 (review)
ACSRAL-1973-166-PHYS-140 (mechanism)



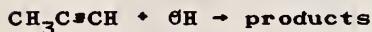
Havel, J. J.

JACSAT-1974-96-530



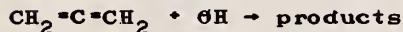
Hampson and Garvin
Toby, S.
Toby and Toby

NBTNAE-1975-866-32 (review)
JLUMA8-1973-8-94
IJCKB6-1974-6-417



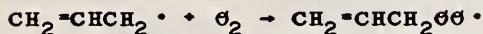
Bradley, et al.
Kanofsky, et al.

JCF TAR-1973-69-1889
ACSRAL-1973-166-PHYS-140 (mechanism)



Bradley, et al.

JCF TAR-1973-69-1889



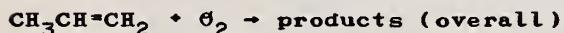
Burke, et al.
Demerjian, et al.

CBFMAG-1963-7-83
AESTC9-1974-4-1 (review)



Altshuller, et al.
Atkinson and Cvetanović
Atkinson and Cvetanović
Atkinson and Pitts
Avramenko and Kolesnikova
Avramenko and Kolesnikova
Avramenko, et al.
Azatyan, et al.
Cvetanović, R. J.
Cvetanović, R. J.
Cvetanović, R. J.
Cvetanović, R. J.
Demerjian, et al.
DeMore, W. B.
Furuyama, et al.
Gaedtke, et al.
Havel, J. J.
Herron and Huie
Hughes, et al.
Huie and Herron
Jaffe and Grant
Kanofsky and Gutman
Kanofsky, et al.
Klein and Scheer
Kurylo, M. J.
Niki, et al.
Orlov and Ponomarev
Saunders and Heicklen
Stuhl and Niki

ESTHAG-1967-1-899
JCP SA6-1971-55-659
JCP SA6-1972-56-432
CHPLBC-1974-27-467
18VHAX-1955-7
BACCAT-1971-20-2556
BACCAT-1963-30
IARKAZ-1964-17-117
CJCHAG-1958-36-623
ADPCA2-1963-1-115 (review)
JCP SA6-1959-30-19
CJCHAG-1960-38-1678 (review)
AESTC9-1974-4-1 (review)
CHPLBC-1972-16-608
IJCKB6-1974-6-741
SYMCAQ-1973-14-295
JACSAT-1974-96-530
JPCRBU-1973-2-467 (review)
JPCHAX-1966-70-798
PRKNAZ-1975-8-1 (review)
JCP SA6-1969-50-3477
CHPLBC-1972-15-236 (mechanism)
SYMCAQ-1973-14-285 (mechanism)
JPCHAX-1968-72-616
CHPLBC-1972-14-117
ADCSAJ-1972-113-16 (review)
KICAA8-1966-7-372
JPCHAX-1966-70-1950
JCP SA6-1971-55-3954



Antonik and Lucquin
Artsis, et al.
Bawn and Skirrow
Brown and Tipper
Burke, et al.

BSCFAS-1968-4043
KICAA8-1972-13-1006
SYMCAQ-1955-5-521
CBFMAG-1968-12-79
CBFMAG-1963-7-83

$\text{CH}_3\text{CH}=\text{CH}_2 + \text{O}_2 \rightarrow \text{products (overall)}$ (Cont'd)

Carabine and Knox	JCSOA9-1963-862
Cullis and Mulcahy	RIFFPA9-1949-4-283
Demerjian, et al.	AESTC9-1974-4-1
Falconer, et al.	JCSOA9-1961-782
Falconer, et al.	JCSOA9-1961-4285
Filippova and Blyumberg	NEFTAH-1973-13-673
Filippova and Blyumberg	NEFTAH-1974-14-612
Filippova and Blyumberg	RZKHAR-1972-5B1154
Korablev, et al.	NEFTAH-1974-14-742
Lukovnikov and Neiman	DANKAS-1953-91-581
Minkoff and Tipper	BOOKA7-1962-151
Mulcahy, M. F. R.	TFSA4-1949-45-575
Mullen and Skirrow	PRLAAZ-1958-244-312
Neiman, et al.	KICAA8-1960-1-319
Nguyen, et al.	BSCFAS-1970-2150
Norrish and Porter	PRLAAZ-1963-272-164
Norrish and Reagh	PRLAAZ-1940-176-429
Polyak and Shtern	ZFKH9-1953-27-341
Polyak and Shtern	ZFKH9-1953-27-631
Seakins, M.	PRLAAZ-1961-261-281
Seakins and Hinshelwood	PRLAAZ-1963-276-324
Shtern, V. Ya.	BOOKA7-1964
Shtern and Polyak	DANKAS-1949-65-311
Shtern and Polyak	DANKAS-1949-66-235
Shtern and Polyak	DANKAS-1952-85-161

$\text{CH}_3\text{CH}=\text{CH}_2 + \text{O}_3 \rightarrow \text{products}$

Altshuller, et al.	ESTHAG-1967-1-899
Becker, et al.	IJCKB9-1974-6-725
Cadle and Schadt	JACSAT-1952-74-6002
Cox and Penkett	JCFTAR-1972-68-1735
Demerjian, et al.	AESTC9-1974-4-1
Hampson and Garvin	NBTNAE-1975-866-32
Hanst, et al.	ACPCAT-1959-136-A7
Herron and Huie	JPCHAX-1974-78-2085
Huie and Herron	IJCKB9-1975-7-Sup. 1
Japar, et al.	JPCHAX-1974-78-2318
Niki, et al.	ADCSAJ-1972-113-16
Stedman, et al.	JPCHAX-1973-77-2511
Vrbaski and Cvetanovic	CJCHAG-1960-38-1053
Wei and Cvetanovic	CJCHAG-1963-41-913

$\text{CH}_3\text{CH}=\text{CH}_2 + \text{OH} \rightarrow \text{products} [\text{CH}_2=\text{CHCH}_2^\bullet, \text{CH}_3\text{CH}(\cdot)\text{CH}_2\text{OH}, \dots]$

Bradley, et al.	JCFTAR-1973-69-1889
Burke, et al.	CBFMAD-1963-7-83
Demerjian, et al.	AESTC9-1974-4-1
Hampson and Garvin	NBTNAE-1975-866-59
Morris and Niki	JPCHAX-1971-75-3640
Morris, et al.	ACSRAL-1970-160-PHYS-119
Morris, et al.	JACSAT-1971-93-3570
Niki, et al.	ADCSAJ-1972-113-16
Pastrana V. A.	DAHBBAA-1974-34-5448
Stuhl, F.	ZENAAU-1973-28-1383

$\text{CH}_3\text{CH}=\text{CH}_2 + \text{HOO}^\bullet \rightarrow \text{CH}_2=\text{CHCH}_2^\bullet + \text{H}_2\text{O}_2$ [or $\text{CH}_3\text{CH}(\cdot)\text{CH}_2\text{OOH}$]

Demerjian, et al. AESTC9-1974-4-1 (review)

$\text{CH}_3\text{CH}_2\text{CH}_2^\bullet$ [or $(\text{CH}_3)_2\text{CH}^\bullet$] + $\text{O}_2 \rightarrow \text{products}$

Aleksishvili, et al.	DKPCAG-1972-203-318
Atkinson, et al.	JACSAT-1973-95-7592
Baker, et al.	TFSA4-1970-66-3016
Baker, et al.	SYMCAQ-1971-13-291
Baldwin and Walker	SYMCAQ-1973-14-241
Baldwin, et al.	SYMCAQ-1955-5-502
Baldwin, et al.	SYMCAQ-1971-13-251
Baldwin, et al.	JCFTAR-1973-69-826
Brokaw and Jackson	SYMCAQ-1955-5-563
Demerjian, et al.	AESTC9-1974-4-1
Falconer and Knox	PRLAAZ-1959-250-493
Fok and Nalbandyan	DANKAS-1952-86-589
Knox, J. H.	TFSA4-1959-55-1362
Knox, J. H.	TFSA4-1960-55-1225
Lefebvre, M.	RIFPA9-1964-19-1
Lefebvre and Lucquin	JCPBAN-1965-62-784

$\text{CH}_3\text{CH}_2\text{CH}_2^*$ [or $(\text{CH}_3)_2\text{CH}^*$] + O_2 → products (Cont'd)		
Sachyan, et al.	DKCHAY-1972-204-482	(mechanism)
Satterfield and Reid	JPCHAX-1955-59-283	
Sochet, et al.	ADCSAJ-1968-76-111	(mechanism)
Sochet, et al.	BSCFAS-1968-3596	(mechanism)
$\text{CH}_3\text{CH}_2\text{CH}_2^*$ [or $(\text{CH}_3)_2\text{CH}^*$] + OH → products		
Greiner, N. R.	JCPA6-1970-53-1070	
$\text{CH}_3\text{CH}_2\text{CH}_2^*$ [or $(\text{CH}_3)_2\text{CH}^*$] + ROO^* → products		
Lefebvre, M.	RIFPA9-1964-19-1	
$\text{CH}_3\text{CH}_2\text{CH}_3$ + O → products ($\text{CH}_3\text{CH}_2\text{CH}_2^*$, $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, ...)		
Avramenko and Kolesnikova	11RFAQ-1954-51	
Azatyany, et al.	DANAAW-1963-36-23	
Baldwin, et al.	SYMCAQ-1965-10-423	
Herron and Huie	JPCRBU-1973-2-467	(review)
Mayer and Schieler	JPCHAX-1968-72-2628	(calculation)
Michaud, et al.	JPCHAX-1974-78-1457	
Paraskevopoulos and Cvetanovic	JACSAT-1969-91-7572	
Saunders and Heicklen	JPCHAX-1966-70-1950	
Schofield, K.	PLSSAE-1967-15-643	(review)
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535	(review)
Yamazaki and Cvetanovic	JCPA6-1964-41-3703	
$\text{CH}_3\text{CH}_2\text{CH}_3$ + O_2 → products (overall)		
Alaverdyan, et al.	DKCHAY-1972-204-436	
Aleksishvili, et al.	DKPCAG-1972-203-318	
Aleksishvili, et al.	KICAA8-1974-15-256	
Aleksishvili, et al.	RZKHAR-1972-3N4	
Antonik and Lucquin	BSCFAS-1968-4043	
Antonovskii and Shtern	DANKAS-1951-78-303	
Badrian, et al.	RJPCAR-1959-33-580	
Bonner and Tipper	CBFMAG-1965-9-387	
Bonner and Tipper	SYMCAQ-1965-10-145	
Brokaw and Jackson	SYMCAQ-1955-5-563	
Brown and Tipper	CBFMAG-1968-12-79	
Carabine and Knox	JCSQA9-1963-862	
Chernyak and Shtern	DANKAS-1951-78-91	
Chernyak, et al.	ZFKHA9-1954-28-240	
Crescitelli, et al.	CINMAB-1973-55-945	
Crossley, et al.	CBFMAG-1972-19-373	
Falconer and Knox	PRLAAZ-1959-250-493	
Falconer, et al.	JCSQA9-1961-782	
Falconer, et al.	JCSQA9-1961-4285	
Garibyan, et al.	AYKZAN-1972-25-95	
Griffiths, J. F.	JCCCAT-1969-483	
Irvine and Knox	BGOKA7-1975-733	
Karpov, V. P.	APCSC3-1971-2-157	
Kleimenov and Nalbandyan	DKPCAG-1958-122-635	
Knox, J. H.	SYMCAQ-1959-7-122	
Knox, J. H.	TFSQA4-1959-55-1362	
Knox, J. H.	TFSQA4-1960-56-1225	
Knox, J. H.	BGOKA7-1967-250	(review)
Knox and Norrish	PRLAAZ-1954-221-151	
Knox and Turner	JCSQA9-1965-3491	
Knox, et al.	TFSQA4-1958-54-1509	
Ksandopulo, et al.	RZKHAR-1973-9B1017	
Levy, A.	SYMCAQ-1955-5-495	
Lewis and Von Elbe	BGOKA7-1961-90	(review)
Mahajan, S.	DABBBA-1973-34-200	
Malherbe and Walsh	TFSQA4-1950-46-835	
Mantashyan, et al.	DKPCAG-1972-204-532	
Martin, et al.	COREAF-1962-254-1786	
Mulcahy, M. F. R.	DFSGAW-1947-2-128	
Myers and Bartle	AIAJAH-1969-7-1862	
Nagiev and Mamed'yarov	AZKZAU-1973-65	
Nalbandyan, A. B.	28KMA4-1972-140	
Nguyen, et al.	BSCFAS-1970-2150	
Norrish and Reagh	PRLAAZ-1940-176-429	
Sgorodnikov, et al	KICAA8-1969-10-998	(related paper)
Pease, R. N.	JACSAT-1938-60-2244	
Podgribenkov and Kogarko	FGVZAT-1974-10-691	
Poltorak, V. A.	RJPCAR-1961-35-137	
Poltorak and Voevodskii	RJPCAR-1961-35-82	



Puechberty and Cottreau	CH DCAQ- 1974- 279- 537
Repa and Shtern	DANKAS- 1953- 91- 309
Repa and Shtern	ZFKHA9- 1954- 28- 414
Revzin, et al.	ZFKHA9- 1954- 28- 985
Sachyan, et al.	DKCHAY- 1972- 204- 482
Satterfield and Reid	SYMCAQ- 1955- 5- 511
Satterfield and Wilson	IECHAD- 1954- 46- 1001
Seakins and Hinshelwood	PRLAAZ- 1963- 276- 324
Semenov, N.	BOGKA7- 1935- 325
Semenov, N. N.	BOGKA7- 1959- 2- 217
Shtern, V. Ya.	BOGKA7- 1964
Shtern, V. Ya.	11 RFAQ- 1954- 89
Shvartsman, et al.	27 PGA4- 1970- 90
Sochet and Lucquin	JCPBAN- 1965- 62- 796
Sochet, et al.	JCPBAN- 1966- 63- 1555
Sochet, et al.	ADCSAJ- 1968- 76- 111
Sochet, et al.	BSCFAS- 1968- 3596
Newitt and Thornes	JCSOA9- 1937- 1669
Walburn, P. G.	CBFMA8- 1968- 12- 550
Zimont and Trushin	CESWA4- 1967- 3- 51



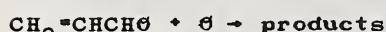
Dardin, V. J.	DIASA9- 1962- 23- 960	(mechanism)
Dardin and Albright	IEPDAW- 1965- 4- 61	(mechanism)
Dillemuth and Schubert	WSCPAP- 1963- No. 63- 22	
Morrissey, R. J.	DIASA9- 1962- 23- 89	
Morrissey and Schubert	CBFMA8- 1963- 7- 263	
Schubert and Pease	JACSAT- 1956- 78- 2044	
Schubert and Pease	JCPSA6- 1956- 24- 919	



Baker, et al.	TF S6A4- 1970- 66- 3016
Baker, et al.	SYMCAQ- 1971- 13- 291
Baldwin, et al.	SYMCAQ- 1955- 5- 502
Baldwin, et al.	SYMCAQ- 1965- 10- 423
Bradley, et al.	JCF TAR- 1973- 69- 1889
Drysdale and Lloyd	0XCR4- 1970- 4- 157
Greiner, N. R.	JCPSA6- 1967- 46- 3389
Greiner, N. R.	JCPSA6- 1970- 53- 1070
Sachyan, et al.	DKCHAY- 1972- 204- 482
Schofield, K.	PLSSAE- 1967- 15- 643
Wilson, Wm. E., Jr.	JPCRBU- 1972- 1- 535
Yamazaki and Cvetanovic	JCPSA6- 1964- 41- 3703



Alaverdyan, et al.	DKCHAY- 1972- 204- 436
Baldwin, et al.	SYMCAQ- 1971- 13- 251
Brokaw and Jackson	SYMCAQ- 1955- 5- 563
Hampson and Garvin	NBTNAE- 1975- 866- 63
Knox, J. H.	TF S6A4- 1959- 55- 1362
Knox, J. H.	TF S6A4- 1960- 56- 1225
Lloyd, A. C.	IJCKB8- 1974- 6- 169
Sachyan, et al.	DKCHAY- 1972- 204- 482
Sochet, et al.	ADCSAJ- 1968- 76- 111



Cadle and Allen	25QIAZ- 1971- 63
-----------------	------------------



Hanst, et al.	ACPCAT- 1959- 136- A7
---------------	-----------------------

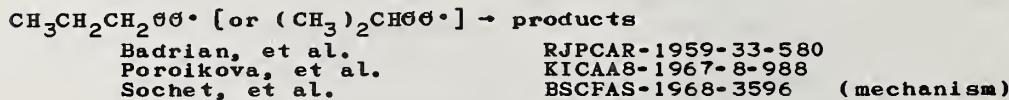
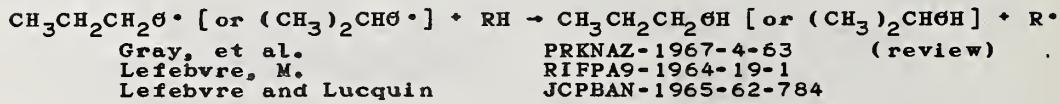
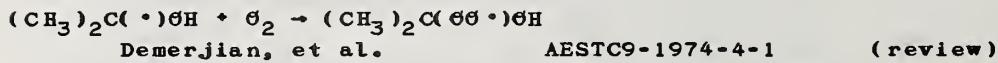
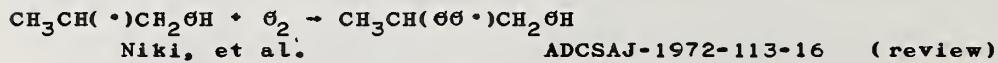
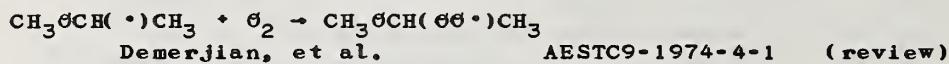
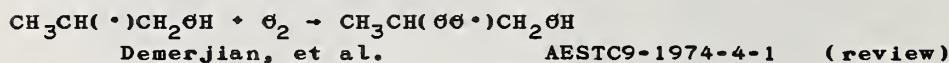
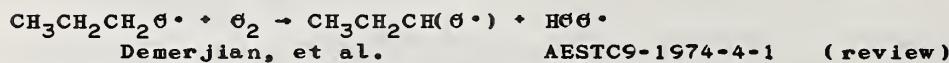
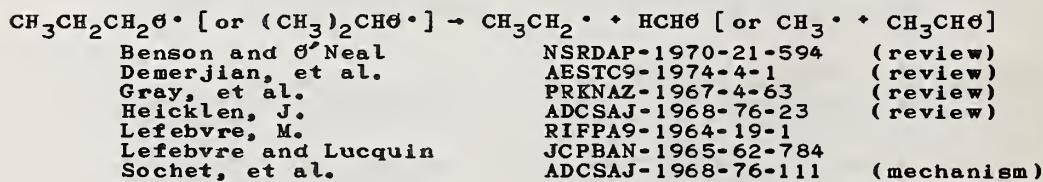
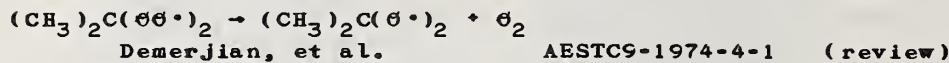
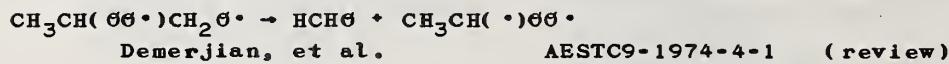
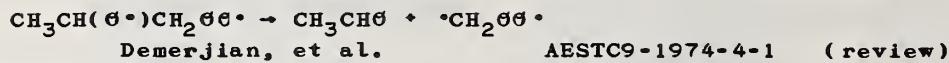
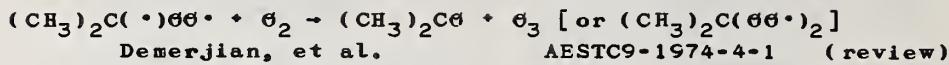
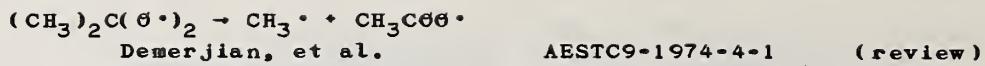


Baldwin, et al.	SYMCAQ- 1971- 13- 251
Hoare and Whytock	CJCHAG- 1967- 45- 2841

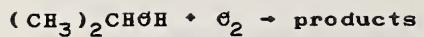


Demerjian, et al.	AESTC9- 1974- 4- 1	(review)
-------------------	--------------------	----------

$\text{CH}_3\text{CH}_2\text{C}(\text{O})\cdot + \text{O}_2 \rightarrow \text{CH}_3\text{CH}_2\text{O}\cdot + \text{CO}_2$	Baldwin, et al. Demerjian, et al. Hoare and Whytock	SYMCAQ-1971-13-251 AESTC9-1974-4-1 CJCHAG-1967-45-2841
$\text{CH}_2\text{CH}=\text{CH}_2\text{O}\cdot \rightarrow \text{products}$	Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{O}\cdot \rightarrow \text{HCHO} + \text{CH}_3\text{C}(\text{O})\cdot$	Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}_2\text{CO}\cdot \rightarrow \text{CH}_3\text{CH}_2\cdot + \text{CO}_2$	Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}(\text{O}\cdot)\text{CH}\text{O} \rightarrow \cdot\text{CH}\text{O} + \text{CH}_3\text{CHO}$	Demerjian, et al.	AESTC9-1974-4-1 (review)
$(\text{CH}_3)_2\text{CO} \rightarrow \text{CH}_3\cdot + \text{CH}_3\text{C}(\text{O})\cdot$	Benson and O'Neal	NSRDAP-1970-21-416 (review)
$\text{CH}_3\text{CH}(\cdot)\text{CH}_2\text{O}\cdot \rightarrow \text{products}$	Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}_2\text{CHO} + \text{O} \rightarrow \text{products} (\text{HCHO}, \text{CH}_3\text{CH}_2\text{COOH}, \dots)$	Avramenko, et al. Cadle and Allen Herron and Huie	BACCAT-1967-19 25QIAZ-1971-63 JPCRBU-1973-2-467 (review)
$\text{CH}_3\text{CH}_2\text{CHO} + \text{O}_2 \rightarrow \text{CH}_3\text{CH}_2\text{C}(\text{O})\cdot + \text{HOO}\cdot$	Baldwin and Walker Baldwin, et al. Baldwin, et al.	XADRCH-1968-AD 678631 SYMCAQ-1971-13-251 TFSQA4-1969-65-792
$(\text{CH}_3)_2\text{CO} + \text{O}_2 \rightarrow \text{products (overall)}$	Barnard, J. A. Barnard and Sheikh	ADCSAJ-1968-76-98 (review) PSIRAA-1973-16-93
$\cdot\text{CH}_2\text{CH}_2\text{CH}_2\text{O}\cdot + \text{O}_2 \rightarrow \text{CH}_3\text{CH}(\text{O}\cdot)\text{CH}_2\text{O}\cdot [\text{or } \text{CH}_3\text{CH}(\text{O}\cdot)\text{CH}_2\text{O}\cdot]$	Demerjian, et al.	AESTC9-1974-4-1 (review)
$\text{CH}_3\text{CH}_2\text{CHO} + \text{OH} \rightarrow \text{CH}_3\text{CH}_2\text{C}(\text{O})\cdot + \text{H}_2\text{O}$	Demerjian, et al. Drysdale and Lloyd Morris and Niki	AESTC9-1974-4-1 (review) OXCRA4-1970-4-157 (review) JPCHAX-1971-75-3640
$\text{CH}_3\text{CH}_2\text{CHO} + \text{HO}\cdot \rightarrow \text{CH}_3\text{CH}_2\text{C}(\text{O})\cdot + \text{H}_2\text{O}_2$	Baldwin and Walker Baldwin, et al. Baldwin, et al.	XADRCH-1968-AD 678631 SYMCAQ-1971-13-251 TFSQA4-1969-65-792
$(\text{CH}_3)_2\text{CO} + \text{R}\cdot \rightarrow \text{CH}_3\text{C}(\text{O})\text{CH}_2\cdot + \text{RH}$	Barnard and Cohen	TFSQA4-1968-64-396
$\text{CH}_3\text{CH}_2\text{CHO} + \text{R}\cdot \rightarrow \text{CH}_3\text{CH}_2\text{C}(\text{O})\cdot + \text{RH}$	Baldwin, et al.	JCF TAR-1973-69-826

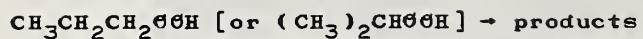


$\text{CH}_3\text{OOCH}(\cdot)\text{CH}_3 \rightarrow \text{CH}_3\text{O}^\bullet + \text{CH}_3\text{CHO}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{CH}_2\text{OH} \rightarrow \text{CH}_3\text{CHO} + \cdot\text{CH}_2\text{OH}$ Demerjian, et al. Niki, et al.	AESTC9-1974-4-1 ADCSAJ-1972-113-16	(review) (review)
$(\text{CH}_3)_2\text{C}(\text{O}^\bullet)\text{OH} \rightarrow \text{CH}_3\text{O}^\bullet + \text{CH}_3\text{COOH}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{O}^\bullet \rightarrow \text{CH}_3\text{CH}(\text{OH})\text{O}^\bullet + \text{HCHO}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{O}^\bullet\text{CH}(\text{O}^\bullet)\text{CH}_3 \rightarrow \text{CH}_3\text{O}^\bullet + \text{CH}_3\text{CHO}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{O}^\bullet\text{CH}(\cdot)\text{CH}_3 + \text{O}_2 \rightarrow \text{CH}_3\text{O}^\bullet\text{CH}(\text{OO}^\bullet)\text{CH}_3$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\cdot)\text{CH}_2\text{OOH} + \text{O}_2 \rightarrow \text{CH}_3\text{CH}(\text{OO}^\bullet)\text{CH}_2\text{OOH}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}_2\text{CH}_2\text{OO}^\bullet [\text{or } (\text{CH}_3)_2\text{CHOO}^\bullet] + \text{RH} \rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{OOH} [\text{or } (\text{CH}_3)_2\text{CHOOH}] + \text{R}^\bullet$ Fok and Nalbandyan Lefebvre, M. Lefebvre and Lucquin Locqueneux-Lefebvre, M. Poroikova, et al.	DANKAS-1952-86-589 RIFPA9-1964-19-1 JCPBAN-1965-62-784 BSCFAS-1966-1417 KICAA8-1967-8-988	(mechanism)
$\text{CH}_3\text{O}^\bullet\text{CH}(\text{O}^\bullet)\text{CH}_3 \rightarrow \text{CH}_3\text{O}^\bullet + \text{CH}_3\text{CHO}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{O}^\bullet)\text{CH}_2\text{OH} \rightarrow \text{CH}_3\text{CHO} + \cdot\text{CH}_2\text{OH}$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{OO}^\bullet)\text{CH}_2\text{OH} + \text{HO}^\bullet \rightarrow \text{CH}_3\text{CH}(\text{OOH})\text{CH}_2\text{OH} + \text{O}_2 [\text{or } \text{CH}_3\text{CH}(\text{O}^\bullet)\text{CH}_2\text{OH} + \text{OH} + \text{O}_2]$ Demerjian, et al. Niki, et al.	AESTC9-1974-4-1 ADCSAJ-1972-113-16	(review) (review)
$\text{CH}_3\text{CH}(\text{OO}^\bullet)\text{CH}_2\text{OH} + \text{R}^\bullet \rightarrow \text{CH}_3\text{CH}(\text{O}^\bullet)\text{CH}_2\text{OH} + \text{R}^\bullet + \text{O}_2$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{OO}^\bullet)\text{CH}_2\text{OH} + \text{HO}^\bullet \rightarrow \text{CH}_3\text{CH}(\text{OOH})\text{CH}_2\text{OH} + \text{O}_2 [\text{or } \text{CH}_3\text{CH}(\text{O}^\bullet)\text{CH}_2\text{OH} + \text{OH} + \text{O}_2]$ Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{CH}(\text{OO}^\bullet)\text{CH}_2\text{OH} + \text{R}^\bullet \rightarrow \text{CH}_3\text{CH}(\text{O}^\bullet)\text{CH}_2\text{OH} + \text{R}^\bullet + \text{O}_2$ Niki, et al.	ADCSAJ-1972-113-16	(review)
$(\text{CH}_3)_2\text{CHOOH} + \text{O} \rightarrow \text{products}$ Herron and Huie Kato and Cvetanovic	JPCRBHU-1973-2-467 CJCHAG-1968-46-235	(review)
$\text{CH}_3\text{CH}_2\text{CH}_2\text{OH} + \text{O}_2 \rightarrow \text{products}$ Cullis and Newitt	PRLAAZ-1960-257-402	



Burgess and Cullis
Burgess, et al.
Cullis and Newitt

JCSOA9-1961-3401
JCSOA9-1961-1884
PRLAAZ-1960-257-402



Benson and O'Neal
Gray, et al.
Kirk and Knox
Locqueneux-Lefebvre, M.

NSRDAP-1970-21-437 (review)
PRKNAZ-1967-4-63 (review)
TFSOA4-1960-56-1296
BSCFAS-1966-1417

C₄ Compounds

CH=CC=CH + O → products [CH=CCH:, CH=CH, ...]
 Herron and Huie JPCRBÜ-1973-2-467 (review)
 Niki and Weinstock JCPSA6-1966-45-3468

CH₂=CHCH=CH₂ + O → products [CH₂=CH:, CH₂=CHCHO, ...]
 Avramenko and Kolesnikova 18VHAX-1955-7
 Cvetanović, R. J. JCPSA6-1960-33-1063
 Cvetanović, R. J. CJCHAG-1960-38-1678 (review)
 Cvetanović, R. J. ADPCA2-1963-1-115 (review)
 Cvetanović and Doyle CJCHAG-1960-38-2187
 Havel, J. J. JACSAT-1974-96-530
 Havel and Chan JGCEAH-1974-39-2439
 Herron and Huie JPCRBÜ-1973-2-467 (review)

CH₂=C=CHCH₃ + O → products
 Havel, J. J. JACSAT-1974-96-530

CH₂=CHCH=CH₂ + O₂ → products
 Sazonov and Ammosov RZKHAR-1974-10B906

CH₂=CHCH=CH₂ + O₃ → products
 Becker, et al. IJCKBØ-1974-6-725
 Hampson and Garvin NBTNAE-1975-866-32 (review)
 Hanst, et al. ACPCAT-1959-136-A7
 Japar, et al. JPCHAX-1974-78-2318
 Vrbaski and Cvetanović CJCHAG-1960-38-1053

CH₃CH=CHCH₂ + O₂ → CH₃CH=CHCH₂O₂
 Demerjian, et al. AESTC9-1974-4-1 (review)

CH₂=C(CH₃)CH₂ + O₂ → CH₂=C(CH₃)CH₂O₂
 Demerjian, et al. AESTC9-1974-4-1 (review)

CH₃CH₂CH=CH₂ + O → products
 Atkinson and Cvetanović JCPSA6-1971-55-659
 Atkinson and Cvetanović JCPSA6-1972-56-432
 Cvetanović, R. J. JCPSA6-1956-25-376
 Cvetanović, R. J. JCPSA6-1959-30-19
 Cvetanović, R. J. JCPSA6-1960-33-1063
 Cvetanović, R. J. CJCHAG-1960-38-1678 (review)
 Cvetanović, R. J. ADPCA2-1963-1-115 (review)
 DeMore, W. B. CHPLBC-1972-16-608
 Elias, L. JCPSA6-1963-38-989
 Ford and Endow JCPSA6-1957-27-1277
 Furuyama, et al. IJCKBØ-1974-6-741
 Havel, J. J. JACSAT-1974-96-530
 Herron and Huie JPCRBÜ-1973-2-467 (review)
 Huie and Herron PRKNAZ-1975-8-1 (review)
 Huie, et al. JPCHAX-1971-75-3092
 Huie, et al. JPCHAX-1972-76-3311
 Jarvie and Cvetanović CJCHAG-1959-37-529 (mechanism)
 Kato and Cvetanović CJCHAG-1967-45-1845
 Klein and Scheer JPCHAX-1968-72-616
 Preston and Cvetanović BBPCAX-1968-72-177
 Sato and Cvetanović CJCHAG-1958-36-970
 Sato and Cvetanović CJCHAG-1958-36-1668 (mechanism)
 Saunders and Heicklen JPCHAX-1966-70-1950
 Smith, I. W. M. TFSdA4-1968-64-378

cis- or trans-CH₃CH=CHCH₃ + O → products [HCHO, CH₃CHO, ...]
 Atkinson and Cvetanović JCPSA6-1971-55-659

cis- or *trans*-CH₃CH=CHCH₃ + θ → products [HCHθ, CH₃CHθ, ...] (Cont'd)

Avramenko, et al.	BACCAT-1967-247
Cvetanović, R. J.	JCPA6-1956-25-376
Cvetanović, R. J.	JCPA6-1959-30-19
Cvetanović, R. J.	CJCHAG-1960-38-1678 (review)
Cvetanović, R. J.	ADPCA2-1963-1-115 (review)
Davis, et al.	JCPA6-1973-59-628
Demerjian, et al.	AESTC9-1974-4-1 (review)
Elias, L.	JCPA6-1963-38-989
Ford and Endow	JCPA6-1957-27-1277
Furuyama, et al.	IJCKBθ-1974-6-741
Havel, J. J.	JACSAT-1974-96-530
Herron and Huie	JPCRBU-1973-2-467
Hughes, et al.	JPCHAX-1966-70-798
Huie and Herron	PRKNAZ-1975-8-1 (review)
Kanofsky, et al.	SYMCAQ-1973-14-285 (mechanism)
Neumann and Jonathan	JCPAC-1970-167
Ray, et al.	SYMCAQ-1973-14-259 (review)
Sato and Cvetanović	CJCHAG-1958-36-1668 (mechanism)
Scheer and Klein	JPCHAX-1969-73-597
Scheer and Klein	JPCHAX-1970-74-2732 (mechanism)
Tsuchiya, et al.	KGKZA7-1970-73-2655 (mechanism)

(CH₃)₂C=CH₂ + θ → products [HCHθ, (CH₃)₂Cθ, ...]

Atkinson and Cvetanović	JCPA6-1971-55-659
Atkinson and Cvetanović	JCPA6-1972-56-432
Avramenko, et al.	BACCAT-1963-30
Cvetanović, R. J.	JCPA6-1956-25-376
Cvetanović, R. J.	JCPA6-1959-30-19
Cvetanović, R. J.	JCPA6-1960-33-1063
Cvetanović, R. J.	CJCHAG-1960-38-1678 (review)
Cvetanović, R. J.	ADPCA2-1963-1-115 (review)
Demerjian, et al.	AESTC9-1974-4-1 (review)
Elias, L.	JCPA6-1963-38-989
Ford and Endow	JCPA6-1957-27-1277
Furuyama, et al.	IJCKBθ-1974-6-741
Havel, J. J.	JACSAT-1974-96-530
Herron and Huie	JPCRBU-1973-2-467 (review)
Huie and Herron	PRKNAZ-1975-8-1 (review)
Kanofsky, et al.	SYMCAQ-1973-14-285 (mechanism)
Sato and Cvetanović	CJCHAG-1958-36-970
Sato and Cvetanović	CJCHAG-1958-36-1668 (mechanism)
Smith, I. W. M.	TFSDA4-1968-64-378

CH₃CH₂CH=CH₂ + θ₂ → products (overall)

Baker, et al.	JCF TAR-1975-71-736
Norrish and Porter	PRLAAZ-1963-272-164
Sazonov and Ammosov	RZKHAR-1974-10B906

cis- or *trans*-CH₃CH=CHCH₃ + θ₂ → products (overall)

Bawn and Skirrow	SYMCAQ-1955-5-521
Blundell and Skirrow	PRLAAZ-1958-244-331
Demerjian, et al.	AESTC9-1974-4-1 (review)
Minkoff and Tipper	BGKZA7-1962-151 (review)
Norrish and Porter	PRLAAZ-1963-272-164
Shtern, V. Ya.	BGKZA7-1964 (review)

(CH₃)₂C=CH₂ + θ₂ → products (overall)

Demerjian, et al.	AESTC9-1974-4-1 (review)
Hay, et al.	SYMCAQ-1965-10-331
Knox, J. H.	BGKZA7-1967-250 (review)
Skirrow and Williams	PRLAAZ-1962-268-537

CH₃CH₂CH=CH₂ + θ₃ → products

Bufalini and Altshuller	CJCHAG-1965-43-2243
Hampson and Garvin	NBTNAE-1975-866-32 (review)
Huie and Herron	IJCKBθ-1975-7-Sup. 1
Japar, et al.	JPCHAX-1974-78-2318
Vrbaski and Cvetanović	CJCHAG-1960-38-1053
Wei and Cvetanović	CJCHAG-1963-41-913

cis- or trans- $\text{CH}_3\text{CH}=\text{CHCH}_3 + \text{O}_3 \rightarrow$ products

Becker, et al.	IJCKBD-1974-6-725
Buhalini and Altshuller	CJCHAG-1965-43-2243
Cox and Penkett	JCFTAR-1972-68-1735
Demerjian, et al.	AESTC9-1974-4-1 (review)
Hampson and Garvin	NBTNAE-1975-866-32 (review)
Hanst, et al.	ACPCAT-1959-136-A7
Huie and Herron	IJCKBD-1975-7-Sup. 1
Japar, et al.	JPCHAX-1974-78-2318
Pitts and Finlayson	XADRCH-1973-AD 763755
Stedman, et al.	JPCHAX-1973-77-2511
Vrbaski and Cvetanovic	CJCHAG-1960-38-1053
Wei and Cvetanovic	CJCHAG-1963-41-913

$(\text{CH}_3)_2\text{C}=\text{CH}_2 + \text{O}_3 \rightarrow$ products

Becker, et al.	IJCKBD-1974-6-725
Buhalini and Altshuller	CJCHAG-1965-43-2243
Demerjian, et al.	AESTC9-1974-4-1 (review)
Hanst, et al.	ACPCAT-1959-136-A7
Huie and Herron	IJCKBD-1975-7-Sup. 1
Japar, et al.	JPCHAX-1974-78-2318
Pitts and Finlayson	XADRCH-1973-AD 763755
Wei and Cvetanovic	CJCHAG-1963-41-913

$\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2 + \text{OH} \rightarrow$ products

Morris and Niki	JPCHAX-1971-75-3640
Pastrana V., A.	DAEBBA-1974-34-5448

cis- or trans- $\text{CH}_3\text{CH}=\text{CHCH}_3 + \text{OH} \rightarrow$ products

Demerjian, et al.	AESTC9-1974-4-1 (review)
Morris and Niki	JPCHAX-1971-75-3640
Pastrana V., A.	DAEBBA-1974-34-5448

$(\text{CH}_3)_2\text{C}=\text{CH}_2 + \text{OH} \rightarrow$ products

Demerjian, et al.	AESTC9-1974-4-1 (review)
Drysdale and Norrish	PRLAAZ-1969-308-305 (mechanism)
Morris and Niki	JPCHAX-1971-75-3640

cis- or trans- $\text{CH}_3\text{CH}=\text{CHCH}_3 + \text{HO}^{\bullet} \rightarrow$ products

Demerjian, et al.	AESTC9-1974-4-1 (review)
-------------------	--------------------------

$(\text{CH}_3)_2\text{C}=\text{CH}_2 + \text{HO}^{\bullet} \rightarrow$ products

Demerjian, et al.	AESTC9-1974-4-1 (review)
Hay, et al.	SYMCAQ-1965-10-331 (mechanism)
Lloyd, A. C.	IJCKBD-1974-6-169 (review)

$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 \cdot [\text{or } \text{CH}_3\text{CH}_2\text{CH}(\cdot)\text{CH}_3] + \text{O}_2 \rightarrow$ products

Baker, et al.	JCFTAR-1975-71-736
Baker, et al.	JCFTAR-1975-71-756
Baker, et al.	SYMCAQ-1971-13-291
Baldwin and Walker	CBFMAQ-1973-21-55 (review)
Baldwin and Walker	SYMCAQ-1973-14-241 (review)
Demerjian, et al.	AESTC9-1974-4-1
Euker, C. A., Jr.	DABBBA-1970-30-4115
Euker and Leinroth	CBFMAQ-1970-15-275
Geisbrecht and Daubert	IEPDAW-1975-14-159

$(\text{CH}_3)_2\text{CHCH}_2 \cdot [\text{or } (\text{CH}_3)_3\text{C}^{\bullet}] + \text{O}_2 \rightarrow$ products

Allara, et al.	IJCKBD-1972-4-345 (calculation)
Allara, et al.	ADCSAJ-1968-76-40 (mechanism)
Baker, et al.	SYMCAQ-1971-13-291
Baldwin and Walker	SYMCAQ-1973-14-241 (review)
Hay, et al.	SYMCAQ-1965-10-331 (mechanism)
Slater and Calvert	ADCSAJ-1968-76-58

$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 \cdot$ [or $\text{CH}_3\text{CH}_2\text{CH}(\cdot)\text{CH}_3$] + $\text{OH} \rightarrow$ products
 Greiner, N. R. JCPUSA6-1970-53-1070

$(\text{CH}_3)_3\text{C} \cdot + \text{OH} \rightarrow (\text{CH}_3)_2\text{C}\text{OH}$
 Greiner, N. R. JCPUSA6-1970-53-1070

$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + \text{O} \rightarrow$ products (HCHO , CH_3CHG , ...)

Atkinson and Cvetanović	JCPUSA6-1971-55-659
Avramenko, et al.	BACCAT-1963-890
Azatyany, et al.	DANAAW-1963-36-23
Baldwin, et al.	SYMCAO-1965-10-423
Cvetanović, R. J.	JCPUSA6-1955-23-1375
Cvetanović, R. J.	JCPUSA6-1956-25-376
Cvetanović, R. J.	ADPCA2-1963-1-115 (review)
Demerjian, et al.	AESTC9-1974-4-1 (review)
Elias and Schiff	CJCHAG-1960-38-1657
Ford and Endow	JCPUSA6-1957-27-1277
Herron and Huie	JPCHAX-1969-73-3327
Herron and Huie	JPCRBU-1973-2-467 (review)
Huie and Herron	PRKNAZ-1975-8-1 (review)
Marsh and Heicklen	JPCHAX-1967-71-250
Mayer and Schieler	JPCHAX-1968-72-2628 (calculation)
Michaud, et al.	JPCHAX-1974-78-1457
Papadopoulos, et al.	SYMCAQ-1971-13-281
Schofield, K.	PLSSAE-1967-15-643 (review)
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)
Wright, F. J.	SYMCAQ-1965-10-387

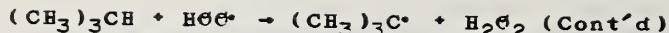
$(\text{CH}_3)_3\text{CH} + \text{O} \rightarrow$ products [$(\text{CH}_3)_2\text{C}\text{G}$, $(\text{CH}_3)_2\text{CHCHG}$]

Baker, et al.	JCF TAR-1975-71-736
Baldwin, et al.	SYMCAQ-1965-10-423
Herron and Huie	JPCRBU-1973-2-467 (review)
Paraskevopoulos and Cvetanović	JACSAT-1969-91-7572
Schofield, K.	PLSSAE-1967-15-643 (review)
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)
Wright, F. J.	JCPUSA6-1963-38-950 (mechanism)
Wright, F. J.	SYMCAQ-1965-10-387

$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + \text{O}_2 \rightarrow$ products (overall)

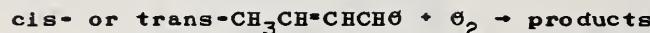
Agasiev and Shakhtakhtinskii	AZKZAU-1969-14
Allara and Edelson	RC TEA4-1972-45-437 (calculation)
Allara, et al.	ACPCAT-1971-16-B31
Antonik and Lucquin	BSCFAS-1968-4043
Atherton, et al.	SYMCAQ-1973-14-513
Baker, et al.	JCF TAR-1975-71-736
Baker, et al.	JCF TAR-1975-71-756
Bardwell, J.	SYMCAQ-1955-5-529
Berry, et al.	PRLAAZ-1970-316-377
Berry, et al.	ADCSAJ-1968-76-86
Blakermore, J. E.	DABBA-1971-31-4653
Blat, et al.	ACPYAR-1939-10-273
Bufalini, et al.	ESTHAG-1971-5-333
Cherneskey and Bardwell	CJCHAG-1960-38-482
Crossley, et al.	CBFMAO-1972-19-373
Cullis and Mulcahy	RIFPA9-1949-4-283
Déchaux and Lucquin	SYMCAQ-1971-13-205
Drysdale, D. D.	CBFMAO-1971-17-261
Euken, C. A. Jr.	DABBA-1970-30-4115
Euken and Leinroth	CBFMAO-1970-15-275
Falconer and Van Tiggelen	SYMCAQ-1963-9-689
Falconer, et al.	JCSAQ9-1961-4285
Kozorezov, et al.	JAPUAW-1965-38-1171
Kuhn and Wellman	WSCPAH-1972-No. 72-41
Lewis and Von Elbe	B00KA7-1961-90 (review)
Malherbe and Walsh	TFSGA4-1950-46-824
Malherbe and Walsh	TFSGA4-1950-46-835
Mill, et al.	JACSAT-1972-94-6802
Mulcahy, M. F. R.	DFSGAW-1947-2-128
Mulcahy, M. F. R.	TFSGA4-1949-45-575
Norikov and Blyumberg	BACCAT-1962-1275
Norikov, et al.	BACCAT-1964-774

$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + \text{O}_2 \rightarrow \text{products (overall)}$	(Cont'd)
Norikov, et al.	21 RAAM-1965-410
Rader and Weller	AICEAC-1974-20-515
Semenov, N.	BGKAT-1935-328
Semenov, N. N.	BGKAT-1959-2-217 (review)
Shtern, V. Ya.	BGKAT-1964 (review)
Shu and Bardwell	CJCHAG-1955-33-1415
Slavinskaya, et al.	RJPCAR-1963-37-830
Skrivan and Hoelscher	AICEAC-1959-5-348
Sochet, et al.	JCPBAN-1966-63-1555
Yoshizawa and Kawada	BJSEA8-1973-16-576
$(\text{CH}_3)_3\text{CH} + \text{O}_2 \rightarrow \text{products (overall)}$	
Allara, et al.	ADCSAJ-1968-76-40
Atherton, et al.	SYMCAQ-1973-14-513
Brown, et al.	BGKAT-1975-751
Falconer and Van Tiggelen	SYMCAQ-1963-9-689
Falconer, et al.	JCSQA9-1961-782
Hay, et al.	SYMCAQ-1965-10-331
Irvine and Knox	BGKAT-1975-733
Knox and Turner	JCSQA9-1965-3491
Kozorezov, et al.	JAPUAW-1965-38-1171
Luckett and Pollard	CBFMA8-1973-21-265
Minkoff and Tipper	BGKAT-1962-151 (review)
Mulcahy, M. F. R.	TFSCA4-1949-45-575
Rezai, A. A.	DIASA9-1965-26-939
Ridge, M. J.	TFSCA4-1956-52-858
Seakins and Hinshelwood	PRLAAZ-1963-276-324
Shtern, V. Ya.	BGKAT-1964 (review)
Zeelenberg and Bickel	JCSQA9-1961-4014
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + \text{O}_3 \rightarrow \text{products}$	
Schubert and Pease	JACSAT-1956-78-2044
Schubert and Pease	JCPSA6-1956-24-919
$(\text{CH}_3)_3\text{CH} + \text{O}_3 \rightarrow \text{products}$	
James, H.	RIFPA9-1958-13-338
Knox, J. H.	SYMCAQ-1959-7-122
Schubert and Pease	JACSAT-1956-78-2044
Schubert and Pease	JACSAT-1956-78-5553
Schubert and Pease	JCPSA6-1956-24-919
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + \text{OH} \rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 + [\text{or } \text{CH}_3\text{CH}_2\text{CH}(\cdot)\text{CH}_3] + \text{H}_2\text{O}$	
Baker, et al.	JCF TAR-1975-71-736
Baker, et al.	SYMCAQ-1971-13-291
Baldwin, et al.	SYMCAQ-1965-10-423
Demerjian, et al.	AESTC9-1974-4-1 (review)
Greiner, N. R.	JCPSA6-1970-53-1070
Greiner, N. R.	JCPSA6-1970-53-1285
Hampson and Garvin	NBTNAE-1975-866-60 (review)
Morris and Niki	JPC CHAX-1971-75-3640
Papadopoulos, et al.	SYMCAQ-1971-13-281
Stuhl, F.	ZENAAU-1973-28-1383
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535
$(\text{CH}_3)_3\text{CH} + \text{OH} \rightarrow (\text{CH}_3)_3\text{C} \cdot + \text{H}_2\text{O}$	
Baker, et al.	SYMCAQ-1971-13-291
Baldwin, et al.	SYMCAQ-1965-10-423
Drysdale and Lloyd	DXCRA4-1970-4-157 (review)
Greiner, N. R.	JCPSA6-1967-46-3389
Greiner, N. R.	JCPSA6-1970-53-1070
Greiner, N. R.	JCPSA6-1970-53-1285
Wilson, Wm. E., Jr.	JPCRBU-1972-1-535 (review)
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 + \text{HO} \cdot \rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2 + [\text{or } \text{CH}_3\text{CH}_2\text{CH}(\cdot)\text{CH}_3] + \text{H}_2\text{O}$	
Hampson and Garvin	NBTNAE-1975-866-63 (review)
Lloyd, A. C.	IJCKB8-1974-6-169 (review)
$(\text{CH}_3)_3\text{CH} + \text{HO} \cdot \rightarrow (\text{CH}_3)_3\text{C} \cdot + \text{H}_2\text{O}$	
Baldwin, et al.	SYMCAQ-1971-13-251



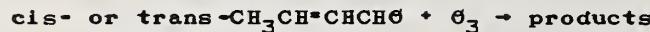
Hampson and Garvin
Lloyd, A. C.

NBTNAE-1975-866-63 (review)
IJCKB6-1974-6-169 (review)



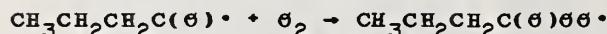
Cadle, et al.
Minkoff and Tipper

CMSHAF-1974-3-115
B66KA7-1962-136



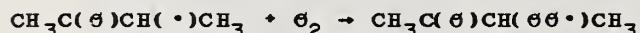
Hanst, et al.

ACPCAT-1959-136-A7



Demerjian, et al.

AESTC9-1974-4-1



Demerjian, et al.

AESTC9-1974-4-1 (review)



Demerjian, et al.

AESTC9-1974-4-1 (review)



Demerjian, et al.

AESTC9-1974-4-1 (review)



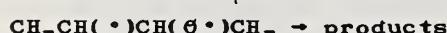
Demerjian, et al.

AESTC9-1974-4-1 (review)



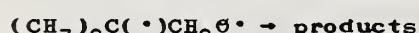
Demerjian, et al.

AESTC9-1974-4-1 (review)



Demerjian, et al.

AESTC9-1974-4-1



Demerjian, et al.

AESTC9-1974-4-1



Bardwell, J.

PRLAAZ-1951-207-470

Bardwell and Hinshelwood

PRLAAZ-1950-201-26

Bardwell and Hinshelwood

PRLAAZ-1951-205-375

Bardwell and Hinshelwood

PRLAAZ-1951-207-461

Barnard, J. A.

ADCSAJ-1968-76-98

Barnard and Sheikh

PSIRAA-1973-16-93

Minkoff and Tipper

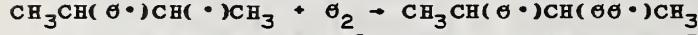
B66KA7-1962-184 (review)

Seakins and Hinshelwood

PRLAAZ-1963-276-324

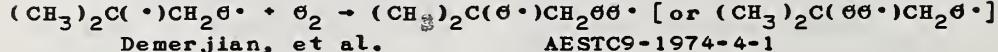
Shtern, V. Ya.

B66KA7-1964 (review)



Demerjian, et al.

AESTC9-1974-4-1



Demerjian, et al.

AESTC9-1974-4-1



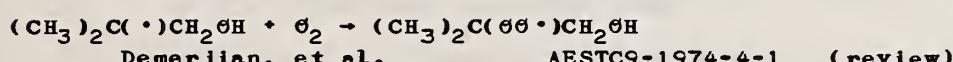
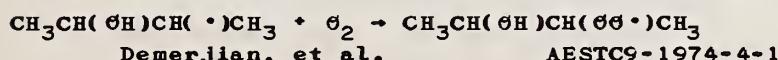
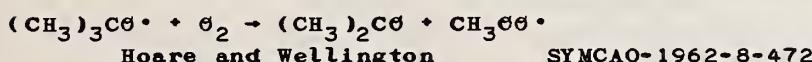
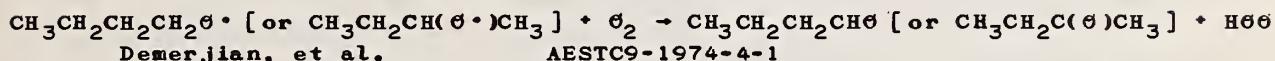
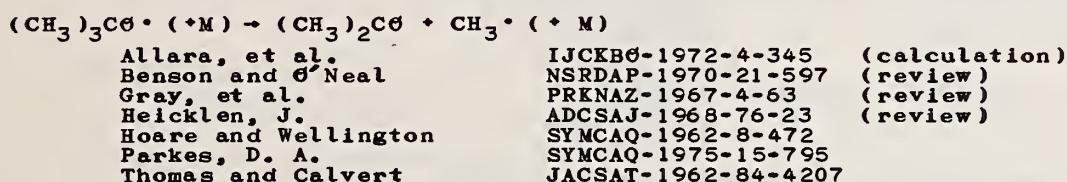
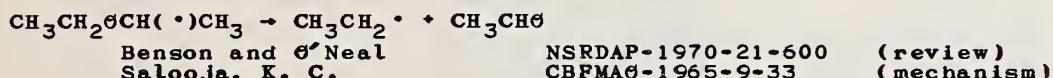
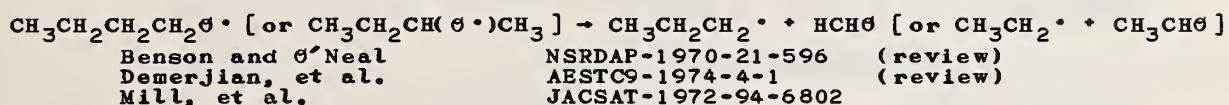
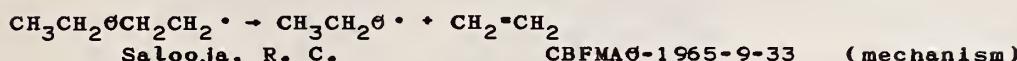
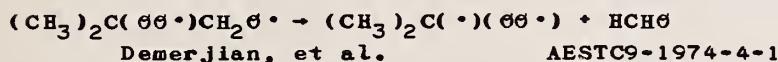
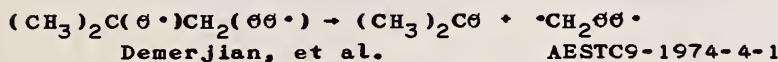
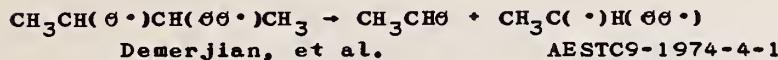
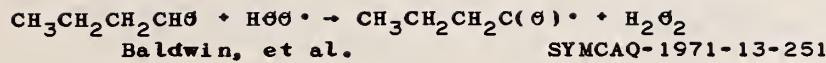
Demerjian, et al.

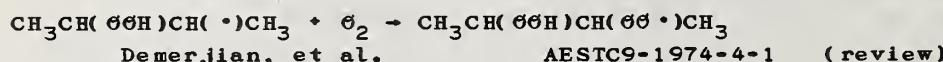
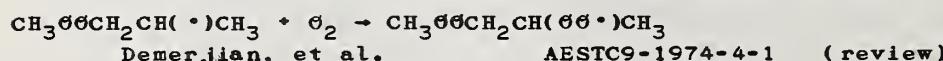
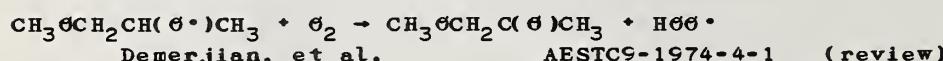
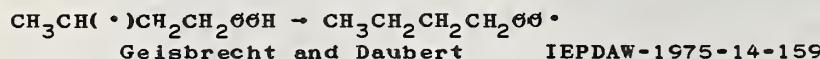
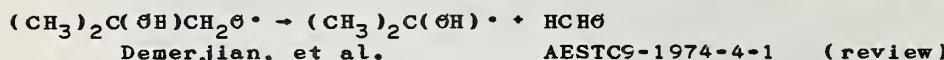
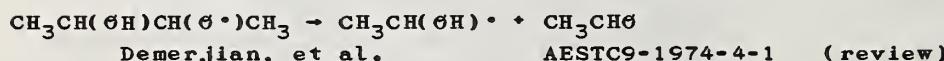
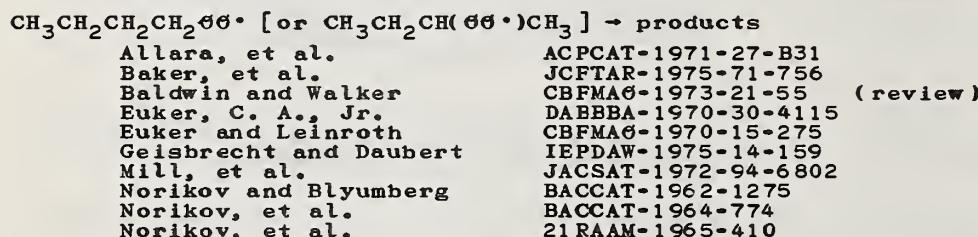
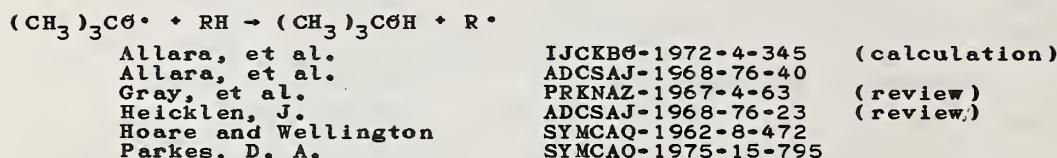
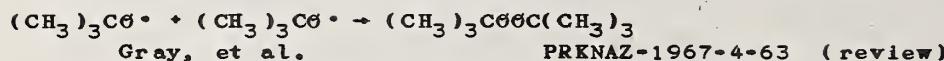
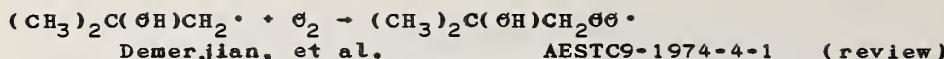
AESTC9-1974-4-1

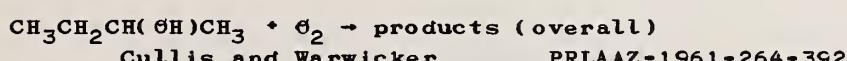
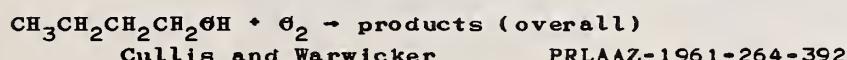
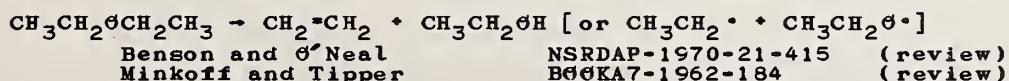
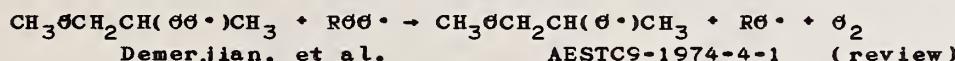
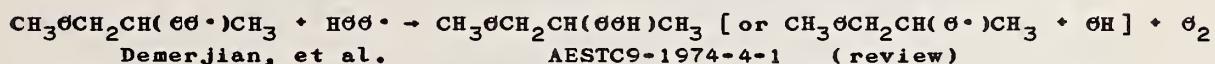
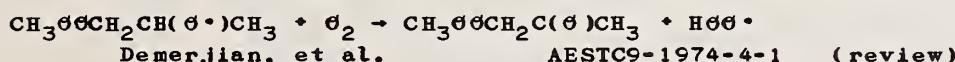
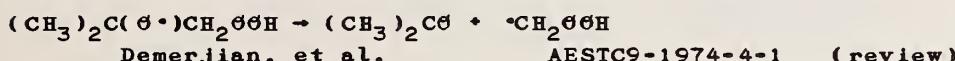
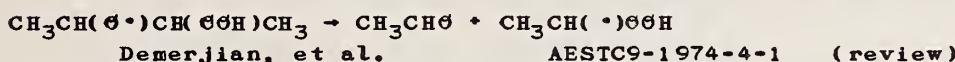
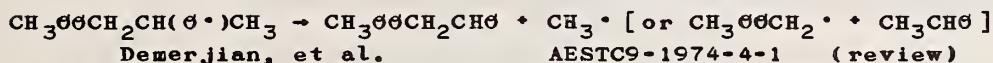
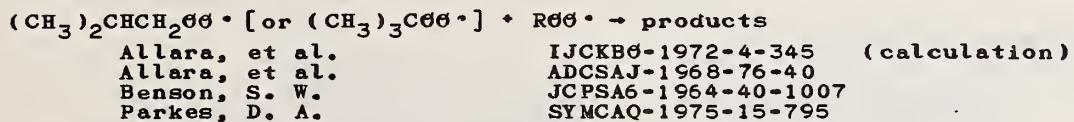
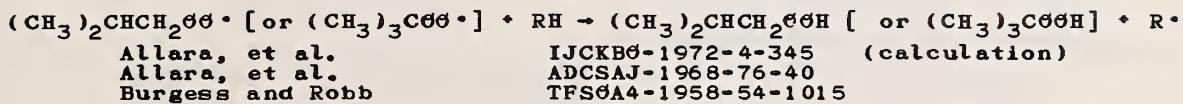
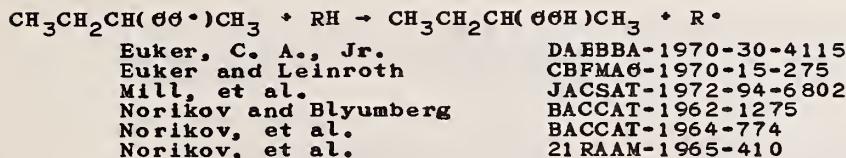
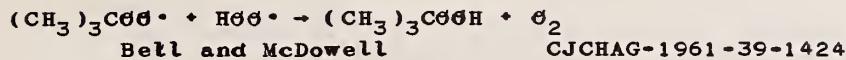
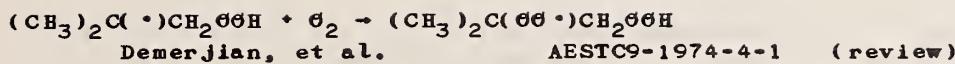


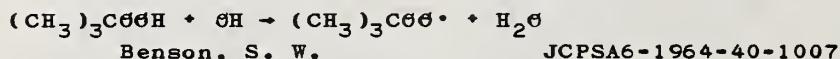
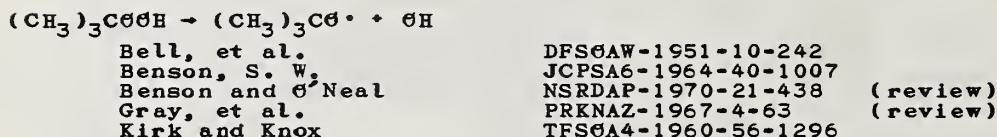
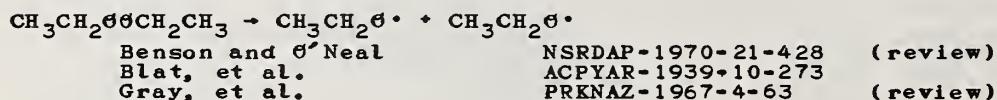
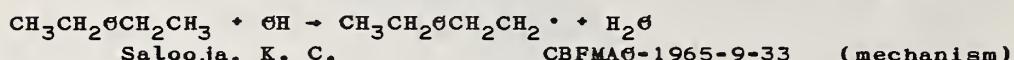
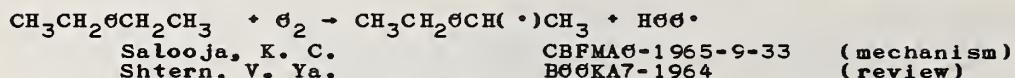
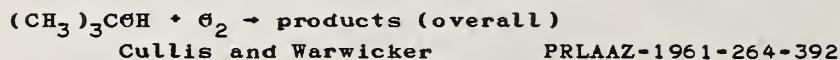
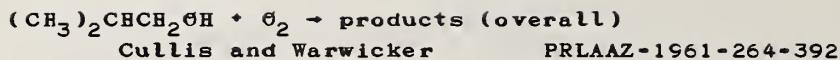
Demerjian, et al.

AESTC9-1974-4-1 (review)







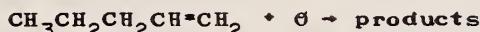


C₅ Compounds



Havel, J. J.

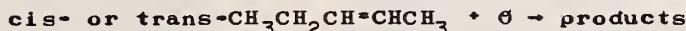
JACSAT-1974-96-530



Herron and Huie

JPCRBU-1973-2-467

(review)



Cvetanović, R. J.

JCPA6-1959-30-19

(review)

Cvetanović, R. J.

CJCHAG-1960-38-1678

(review)

Cvetanović, R. J.

ADPCA2-1963-1-115

(review)

Ford and Endow

JCPA6-1957-27-1277

(review)

Herron and Huie

JPCRBU-1973-2-467

(review)

Scheer and Klein

JPCHAX-1970-74-2732

(mechanism)



Cvetanović, R. J.

JCPA6-1960-33-1063

(review)

Cvetanović, R. J.

CJCHAG-1960-38-1678

(review)

Cvetanović, R. J.

ADPCA2-1963-1-115

(review)

Furuyama, et al.

IJCKB8-1974-6-741

(review)

Havel, J. J.

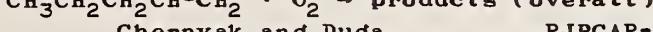
JACSAT-1974-96-530

(review)

Herron and Huie

JPCRBU-1973-2-467

(review)

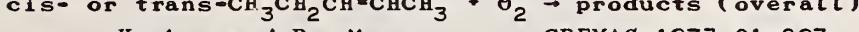


Chernyak and Duda

RJPCAR-1973-47-751

Hughes and Prodhan

CBFMA8-1973-21-297



Hughes and Prodhan

CBFMA8-1973-21-297



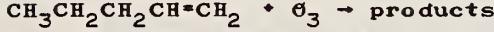
Cullis, et al.

PRLAAZ-1961-262-318

Huie and Herron

PRKNAZ-1975-8-1

(review)



Cadle and Schadt

JACSAT-1952-74-6002

Hanst, et al.

ACPCAT-1959-136-A7

Japar, et al.

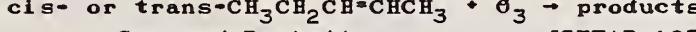
JPCHAX-1974-78-2318

Vrbaski and Cvetanović

CJCHAG-1960-38-1053

Wei and Cvetanović

CJCHAG-1963-41-913



Cox and Penkett

JCF TAR-1972-68-1735

Hanst, et al.

ACPCAT-1959-136-A7

Vrbaski and Cvetanović

CJCHAG-1960-38-1053

Wei and Cvetanović

CJCHAG-1963-41-913



Buinalini and Altshuller

CJCHAG-1965-43-2243

Cox and Penkett

JCF TAR-1972-68-1735

Huie and Herron

IJCKB8-1975-7-Sup. 1

Japar, et al.

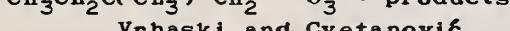
JPCHAX-1974-78-2318

Vrbaski and Cvetanović

CJCHAG-1960-38-1053

Wei and Cvetanović

CJCHAG-1963-41-913



Vrbaski and Cvetanović

CJCHAG-1960-38-1053

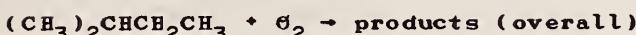
Wei and Cvetanović

CJCHAG-1963-41-913

$(CH_3)_2CHCH=CH_2 + \cdot O_3 \rightarrow$ products	
Vrbaski and Cvetanović Wei and Cvetanović	CJCHAG-1960-38-1053 CJCHAG-1963-41-913
$CH_3CH_2CH_2CH=CH_2 + \cdot OH \rightarrow$ products	
Morris and Niki	JPCHAX-1971-75-3640
cis- or trans- $CH_3CH_2CH=CHCH_3 + \cdot OH \rightarrow$ products	
Morris and Niki	JPCHAX-1971-75-3640
$CH_3CH_2C(CH_3)=CH_2 + \cdot OH \rightarrow$ products	
Morris and Niki	JPCHAX-1971-75-3640
$(CH_3)_2C=CHCH_3 + \cdot OH \rightarrow$ products	
Morris and Niki	JPCHAX-1971-75-3640
$CH_3CH_2CH_2CH(\cdot)CH_3 + \cdot O_2 \rightarrow CH_3CH_2CH_2CH(\cdot O\cdot)CH_3$	
Dahm and Verhoek Hughes and Simmons	CBFMAG-1968-12-380 (mechanism) SYMCAQ-1969-12-449 (mechanism)
$(CH_3)_2CHCH_2CH_2\cdot [$ or $(CH_3)_2CHCH(\cdot)CH_3$, or $(CH_3)_2C(\cdot)CH_2CH_3] + \cdot O_2 \rightarrow$ products	
Allara, et al. Varkey and Sandler	IJCKBQ-1972-4-345 (calculation) CBFMAG-1969-13-223 (mechanism)
$(CH_3)_3CCH_2\cdot + \cdot O_2 \rightarrow$ products	
Antonik and Lucquin Antonik and Lucquin Baker, et al. Baldwin, et al. Drysdale and Norrish Zeelenberg, A. P.	BSCFAS-1968-2796 BSCFAS-1971-3139 CBFMAG-1970-14-31 ADCSAJ-1968-76-124 PRLAAZ-1969-308-305 (mechanism) RTCPA3-1962-81-720
$(CH_3)_3CCH_2\cdot + \cdot OH \rightarrow (CH_3)_3CCH_2\cdot OH$	
Greiner, N. R.	JCPAS6-1970-53-1070
$CH_3CH_2CH_2CH_2CH_3 + \cdot O \rightarrow$ products	
Herron and Huie Herron and Huie Huie and Herron Michaud, et al.	JPCHAX-1969-73-3327 JPCRBU-1973-2-467 (review) PRKNAZ-1975-8-1 (review) JPCHAX-1974-78-1457
$(CH_3)_2CHCH_2CH_3 + \cdot O \rightarrow$ products	
Allara, et al. Herron and Huie Herron and Huie	IJCKBQ-1972-4-345 (calculation) JPCHAX-1969-73-3327 JPCRBU-1973-2-467 (review)
$(CH_3)_4C + \cdot O \rightarrow$ products	
Herron and Huie Herron and Huie Huie and Herron Michaud, et al. Paraskevopoulos and Cvetanović Paraskevopoulos and Cvetanović Wright, F. J.	JPCHAX-1969-73-3327 JPCRBU-1973-2-467 (review) PRKNAZ-1975-8-1 (review) JPCHAX-1974-78-1457 JACSAT-1969-91-7572 CHPLBC-1971-9-603 SYMCAQ-1965-10-387
$CH_3CH_2CH_2CH_2CH_3 + \cdot O_2 \rightarrow$ products (overall)	
Aivazov and Neiman Aivazov and Neiman Aivazov and Neiman	ZFKHA9-1936-8-88 ZFKHA9-1936-8-543 ACPYAR-1937-6-279



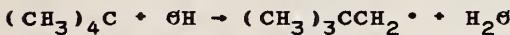
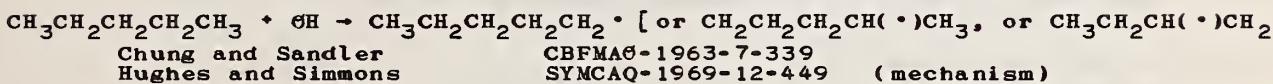
Aivazov and Neiman	ZFKHA9-1937-9-231
Bastow and Cullis	PRLAAZ-1974-338-327
Bastow and Cullis	BGKAT-1975-765
Berry, et al.	ADCSAJ-1968-76-86
Chung and Sandler	CBFMA9-1963-7-339
Crossley, et al.	CBFMA9-1972-19-373
Cullis and Hinshelwood	DFSGAW-1947-2-117
Cullis, et al.	PRLAAZ-1967-300-455
Dahm and Verhoeck	CBFMA9-1968-12-380
Hughes and Simmons	SYMCAQ-1969-12-449
Hughes and Simmons	CBFMA9-1970-14-103
Karbassian, et al.	BSCFAS-1973-3249
Knox and Kinnear	SYMCAQ-1971-13-217
Kuhn and Wellman	WSCPAB-1972-No. 72-41
Lee and Malmberg	ACSRAL-1961-139-2J
Lewis and Von Elbe	BGKAT-1961-90 (review)
Malherbe and Walsh	TFSGA4-1950-46-824
Malherbe and Walsh	TFSGA4-1950-46-835
Mulcahy, M. F. R.	DFSGAW-1947-2-128
Neiman and Aivazov	NATUAS-1935-135-655
Prettre, M.	COREAF-1936-203-561
Semenov, N.	BGKAT-1935-332 (review)
Shtern, V. Ya.	BGKAT-1964 (review)
Sochet, et al.	JCPBAN-1966-63-1555



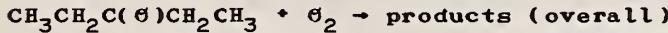
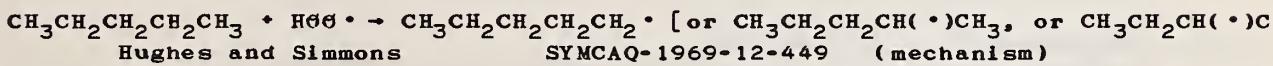
Allara and Edelson	RCTEA4-1972-45-437	(calculation)
Degtyareva, et al.	NEFTAH-1972-12-712	
Kirik, et al.	UYTIAX-1972-22-74	
Varkey and Sandler	CBFMA9-1969-13-223	



Antonik and Lucquin	BSCFAS-1968-2796
Antonik and Lucquin	BSCFAS-1968-4043
Drysdale, D. D.	CBFMA9-1971-17-261
Drysdale and Norrish	PRLAAZ-1969-308-305
Falconer and Van Tiggelen	SYMCAQ-1963-9-689
Falconer, et al.	JCSGA9-1961-782
Falconer, et al.	JCSGA9-1961-4285
Fish, A.	CBFMA9-1969-13-23
Ray and Waddington	BGKAT-1975-721
Seakins and Hinshelwood	PRLAAZ-1963-276-324
Zeelenberg, A. P.	RTCPA3-1962-81-720



Baldwin, et al.	ADCSAJ-1968-76-124
Drysdale and Norrish	PRLAAZ-1969-308-305 (mechanism)
Greiner, N. R.	JCPAA6-1970-53-1070
Greiner, N. R.	JCPAA6-1970-53-1285



Barnard, J. A.	ADCSAJ-1968-76-98
Barnard and Sheikh	PSIRAA-1973-16-93

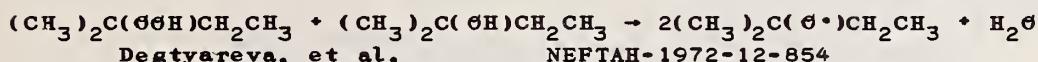
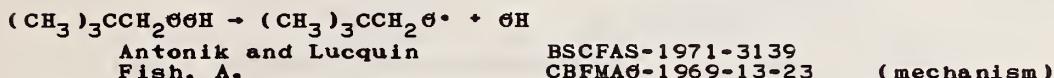
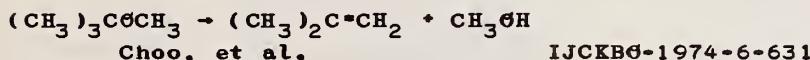
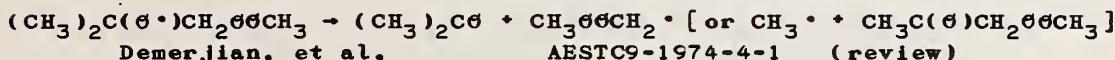
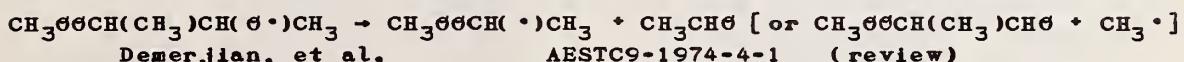
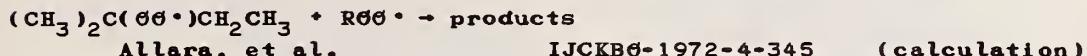
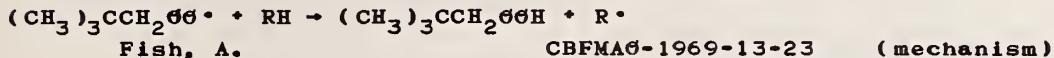
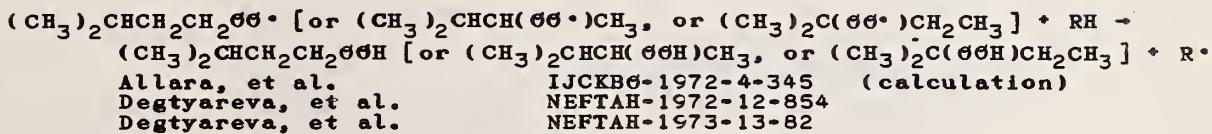
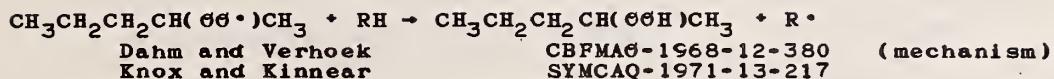
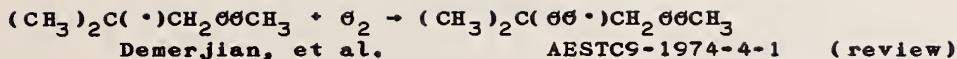


Drysdale and Norrish	PRLAAZ-1969-308-305 (mechanism)
----------------------	---------------------------------



Antonik and Lucquin	BSCFAS-1968-2796
Antonik and Lucquin	BSCFAS-1971-3139

$\text{CH}_3\text{CH}=\text{CHCH}(\text{OOH})\text{CH}_3 \rightarrow \text{CH}_3\text{CH}=\text{CHCH}\text{O} + \text{CH}_3\text{O} + \text{OH}$		
Dahm and Verhoeck	CBFMAG-1968-12-380	(mechanism)
$(\text{CH}_3)_2\text{C}(\text{O}\cdot)\text{CH}_2\text{CH}_3 \rightarrow \text{products}$		
Allara, et al.	IJCCKB0-1972-4-345	(calculation)
Gray, et al.	PRKNAZ-1967-4-63	(review)
$(\text{CH}_3)_3\text{CCH}_2\text{O}\cdot \rightarrow \text{products}$		
Fish, A.	CBFMAG-1969-13-23	(mechanism)
$(\text{CH}_3)_2\text{C}(\text{O}\cdot)\text{CH}_2\text{OCH}_3 + \text{O}_2 \rightarrow (\text{CH}_3)_2\text{C}(\text{OO}\cdot)\text{CH}_2\text{OCH}_3$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{OCH}(\text{CH}_3)\text{CH}(\cdot)\text{CH}_3 + \text{O}_2 \rightarrow \text{CH}_3\text{OCH}(\text{CH}_3)\text{CH}(\text{OO}\cdot)\text{CH}_3$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$(\text{CH}_3)_2\text{C}(\text{O}\cdot)\text{CH}_2\text{CH}_3 + \text{RH} \rightarrow (\text{CH}_3)_2\text{C}(\text{OH})\text{CH}_2\text{CH}_3 + \text{R}\cdot$		
Allara, et al.	IJCCKB0-1972-4-345	(calculation)
$(\text{CH}_3)_3\text{CCH}_2\text{O}\cdot + \text{RH} \rightarrow (\text{CH}_3)_3\text{CCH}_2\text{OH} + \text{R}\cdot$		
Antonik and Lucquin	BSCFAS-1971-3139	
Fish, A.	CBFMAG-1969-13-23	(mechanism)
Zeelenberg, A. P.	RTCPA3-1962-81-720	
$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{OO}\cdot)\text{CH}_3$ [or $\text{CH}_3\text{CH}_2\text{CH}(\text{OO}\cdot)\text{CH}_2\text{CH}_3$] $\rightarrow \text{products}$		
Burgess and Robb	TFSOA4-1958-54-1015	
Chung and Sandler	CBFMAG-1963-7-339	
Dahm and Verhoeck	CBFMAG-1968-12-380	(mechanism)
Hughes and Simmons	SYMCAQ-1969-12-449	(mechanism)
Knox and Kinnear	SYMCAQ-1971-13-217	
$(\text{CH}_3)_2\text{C}(\text{O}\cdot)\text{CH}_2\text{OCH}_3 \rightarrow (\text{CH}_3)_2\text{CO} + \text{CH}_3\text{OCH}_2\cdot$ [or $\text{CH}_3\cdot + \text{CH}_3\text{C}(\text{O})\text{CH}_2\text{OCH}_3$]		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\text{CH}_3\text{OCH}(\text{CH}_3)\text{CH}(\cdot)\text{CH}_3 \rightarrow \text{CH}_3\text{OCH}(\cdot)\text{CH}_3 + \text{CH}_3\text{CH}\text{O}$ [or $\text{CH}_3\text{OCH}(\text{CH}_3)\text{CH}\text{O} + \text{CH}_3\cdot$]		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\cdot\text{CH}_2\text{C}(\text{CH}_3)_2\text{CH}_2\text{O}\text{O}\text{H} \rightarrow \text{products}$		
Baker, et al.	CBFMAG-1970-14-31	
$(\text{CH}_3)_3\text{CCH}_2\text{OO}\cdot \rightarrow \text{products}$		
Antonik and Lucquin	BSCFAS-1968-2796	
Antonik and Lucquin	BSCFAS-1971-3139	
Fish, A.	CBFMAG-1969-13-23	(mechanism)
Zeelenberg, A. P.	RTCPA3-1962-81-720	
$\text{CH}_3\text{CH}(\cdot)\text{CH}_2\text{CH}(\text{OOH})\text{CH}_3 + \text{O}_2 \rightarrow \text{products}$		
Dahm and Verhoeck	CBFMAG-1968-12-380	(mechanism)
Hughes and Simmons	SYMCAQ-1969-12-449	(mechanism)
$\text{CH}_3\text{O}\text{OCH}(\text{CH}_3)\text{CH}(\cdot)\text{CH}_3 + \text{O}_2 \rightarrow \text{CH}_3\text{O}\text{OCH}(\text{CH}_3)\text{CH}(\text{OO}\cdot)\text{CH}_3$		
Demerjian, et al.	AESTC9-1974-4-1	(review)
$\cdot\text{CH}_2\text{C}(\text{CH}_3)_2\text{CH}_2\text{O}\text{O}\text{H} + \text{O}_2 \rightarrow \text{products}$		
Baker, et al.	CBFMAG-1970-14-31	



C₆ Compounds

CH ₃ CH=C(CH ₃) ₂ + O ₂ → products		
Havel, J. J.	JACSAT-1974-96-530	
CH ₂ =CHCH ₂ CH ₂ CH=CH ₂ + O ₂ → products		
Salooja, K. C.	CBFMAG-1968-12-597	
CH ₃ CH ₂ CH ₂ CH ₂ CH=CH ₂ + O ₂ → products		
Cvetanović, R. J.	CJCHAG-1960-38-1678	(review)
Cvetanović, R. J.	ADPCA2-1963-1-115	(review)
Herron and Huie	JPCRBU-1973-2-467	(review)
(CH ₃) ₂ C=C(CH ₃) ₂ + O ₂ → products		
Cvetanović, R. J.	JCPA6-1960-33-1063	
Cvetanović, R. J.	CJCHAG-1960-38-1678	(review)
Cvetanović, R. J.	ADPCA2-1963-1-115	(review)
Cvetanović, R. J.	JCPA6-1959-30-19	
Davis, et al.	JCPA6-1973-59-628	
Furuyama, et al.	IJCkB6-1974-6-741	
Havel, J. J.	JACSAT-1974-96-530	
Herron and Huie	JPCRBU-1973-2-467	
Huie and Herron	PRKNAZ-1975-8-1	(review)
CH ₃ CH ₂ CH ₂ CH ₂ CH=CH ₂ + O ₂ → products (overall)		
Bawn and Skirrow	SYMCAQ-1955-5-521	
Kucher, et al.	DBGGAM-1974-36-1019	
Nechitailo, et al.	JCYA9-1974-10-2035	
Salooja, K. C.	CBFMAG-1968-12-597	
Shtern, V. Ya.	BOKA7-1964	
Skirrow, G.	PRLAAZ-1958-244-345	(review)
cis- or trans-CH ₃ CH ₂ CH ₂ CH=CHCH ₃ + O ₂ → products		
Kucher, et al.	DBGGAM-1974-36-1019	
CH ₃ CH ₂ CH ₂ CH ₂ CH=CH ₂ + O ₃ → products		
Buinalini and Altshuller	CJCHAG-1965-43-2243	
Cadle and Schadt	JACSAT-1952-74-6002	
Cox and Penkett	JCF TAR-1972-68-1735	
Hanst, et al.	ACPCAT-1959-136-A7	
Japar, et al.	JPCHAX-1974-78-2318	
Saltzman, B. E.	IECHAD-1958-50-677	
Saltzman and Gilbert	IECHAD-1959-51-1415	
Stedman, et al.	JPCHAX-1973-77-2511	
Vrbaski and Cvetanović	CJCHAG-1960-38-1053	
Wei and Cvetanović	CJCHAG-1963-41-913	
cis- or trans-CH ₃ CH ₂ CH ₂ CH=CHCH ₃ + O ₃ → products		
Wei and Cvetanović	CJCHAG-1963-41-913	
CH ₃ CH ₂ CH ₂ C(CH ₃)=CH ₂ + O ₃ → products		
Cox and Penkett	JCF TAR-1972-68-1735	
Wei and Cvetanović	CJCHAG-1963-41-913	
(CH ₃) ₂ CHCH ₂ CH=CH ₂ + O ₃ → products		
Cox and Penkett	JCF TAR-1972-68-1735	
Wei and Cvetanović	CJCHAG-1963-41-913	
cis- or trans-(CH ₃) ₂ CHCH=CHCH ₃ + O ₃ → products		
Wei and Cvetanović	CJCHAG-1963-41-913	

cis- or *trans*-CH₃CH₂C(CH₃)=CHCH₃ + O₃ → products
 Japar, et al. JPCHAX-1974-78-2318
 Wei and Cvetanovic CJCHAG-1963-41-913

CH₃CH₂CH(CH₃)CH=CH₂ + O₃ → products
 Wei and Cvetanovic CJCHAG-1963-41-913

(CH₃)₂C=C(CH₃)₂ + O₃ → products
 Huie and Herron IJCKB0-1975-7-Sup. 1
 Japar, et al. JPCHAX-1974-78-2318
 Vrbaski and Cvetanovic CJCHAG-1960-38-1053
 Wei and Cvetanovic CJCHAG-1963-41-913

(CH₃)₂C=C(CH₃)₂ + OH → products
 Morris and Niki JPCHAX-1971-75-3640

CH₃CH₂CH₂C(•)(CH₃)₂ + O₂ → CH₃CH₂CH₂C(CH₃)₂O₂•
 Cullis, et al. SYMCAQ-1963-9-167 (mechanism)

(CH₃)₂CHC(•)(CH₃)₂ [or (CH₃)₂CHCH(CH₃)CH₂•] + O₂ → (CH₃)₂CHC(CH₃)₂O₂•
 Fish and Wilson SYMCAQ-1971-13-229 (mechanism)
 Trimm and Cullis JCSδA9-1963-1430 (mechanism)

(CH₃)₂CHC(•)(CH₃)₂ [or (CH₃)₂CHCH(CH₃)CH₂•] + OH → products
 Greiner, N. R. JCPSA6-1970-53-1070

CH₃(CH₂)₄CH₃ + O → products
 Herron and Huie JPCHAX-1969-73-3327
 Herron and Huie JPCRBU-1973-2-467 (review)
 Huie and Herron PRKNAZ-1975-8-1 (review)

(CH₃)₂CHCH(CH₃)₂ + O → products
 Herron and Huie JPCHAX-1969-73-3327
 Herron and Huie JPCRBU-1973-2-467 (review)
 Huie and Herron PRKNAZ-1975-8-1 (review)

CH₃(CH₂)₄CH₃ + O₂ → products (overall)
 Bailey and Norrish PRLAAZ-1952-212-311
 Berry, et al. ADCSAJ-1968-76-86
 Cullis and Hinshelwood DFSδAW-1947-2-117
 Cullis and Mulcahy RIFPA9-1949-4-283
 Cullis, et al. PRLAAZ-1966-289-402
 Johnson, et al. IECHAD-1954-46-1512
 Kende and Gal CBFMA0-1962-6-109
 Kuhn and Wellman WSCPAH-1972-No. 72-41
 Malherbe and Walsh TFSδA4-1950-46-824
 Malherbe and Walsh TFSδA4-1950-46-835
 Ohlmann, G. WZTLA3-1970-12-195
 Salooja, K. C. CBFMA0-1962-6-275
 Salooja, K. C. TFSδA4-1950-46-824
 Salooja, K. C. TFSδA4-1950-46-835
 Shtern, V. Ya. WZTLA3-1970-12-195
 Wagner, H. Gg. CBFMA0-1965-9-219
 CBFMA0-1968-12-597
 B00KA7-1964 SYMCAQ-1963-9-454 (review)
 SYMCAQ-1966-293-378

(CH₃)₂CHCH₂CH₂CH₃ + O₂ → products (overall)
 Affleck and Fish SYMCAQ-1967-11-1003
 Atherton, et al. SYMCAQ-1973-14-513
 Cullis and Hinshelwood DFSδAW-1947-2-117
 Cullis and Mulcahy RIFPA9-1949-4-283
 Cullis, et al. SYMCAQ-1963-9-167 (mechanism)
 Cullis, et al. PRLAAZ-1959-251-265
 Fish, A. PRLAAZ-1966-293-378



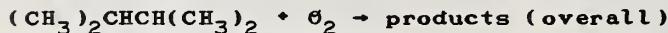
Fish, A.	PRLAAZ-1967-298-204
Fish, et al.	PRLAAZ-1969-313-261
Johnson, et al.	IECHAD-1954-46-1512
Salooja, K. C.	CBFMAO-1962-6-275
Salooja, K. C.	CBFMAO-1965-9-219
Salooja, K. C.	CBFMAO-1968-12-597



Barat, et al.	SYMCAO-1971-13-179
Burt, et al.	CBFMAO-1965-9-159
Cullis and Hinshelwood	DFSGAW-1947-2-117
Johnson, et al.	IECHAD-1954-46-1512
Salooja, K. C.	CBFMAO-1962-6-275
Salooja, K. C.	CBFMAO-1965-9-219
Salooja, K. C.	CBFMAO-1968-12-597



Cullis and Hinshelwood	DFSGAW-1947-2-117
Johnson, et al.	IECHAD-1954-46-1512
Salooja, K. C.	CBFMAO-1962-6-275
Salooja, K. C.	CBFMAO-1965-9-219
Salooja, K. C.	CBFMAO-1968-12-597



Burt, et al.	CBFMAO-1965-9-159
Cullis and Hinshelwood	DFSGAW-1947-2-117
Fish and Wilson	SYMCAQ-1971-13-229
Johnson, et al.	IECHAD-1954-46-1512
Mill and Montorsi	IJCKBQ-1973-5-119
Salooja, K. C.	CBFMAO-1962-6-275
Salooja, K. C.	CBFMAO-1965-9-219
Salooja, K. C.	CBFMAO-1968-12-597
Trimm and Cullis	JCSQA9-1963-1430



Razumovskii and Zaikov

DKPCAG-1973-212-806



Razumovskii and Zaikov

DKPCAG-1973-212-806



Fish and Wilson

Greiner, N. R.

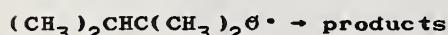
Greiner, N. R.

SYMCAQ-1971-13-229 (mechanism)
JCPSA6-1970-53-1070
JCPSA6-1970-53-1285



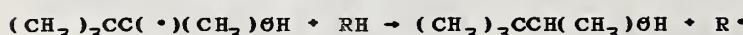
Cullis, et al.

SYMCAQ-1963-9-167 (mechanism)



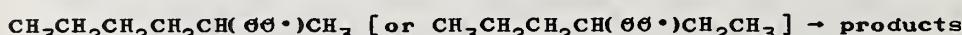
Trimm and Cullis

JCSQA9-1963-1430 (mechanism)



Trimm and Cullis

JCSQA9-1963-1430 (mechanism)

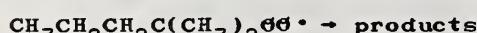


Burgess and Robb

Cullis, et al.

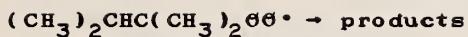
TFSGA4-1958-54-1015

PRLAAZ-1966-289-402



Cullis, et al.

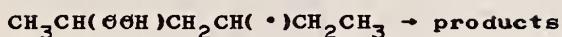
SYMCAQ-1963-9-167 (mechanism)



Fish and Wilson
Trimm and Cullis

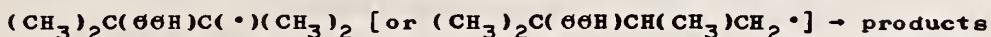
SYMCAQ-1971-13-229
JCSOA9-1963-1430

(mechanism)
(mechanism)



Cullis, et al.

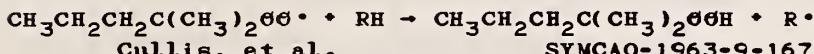
PRLAAZ-1966-289-402



Fish and Wilson
Trimm and Cullis

SYMCAQ-1971-13-229
JCSOA9-1963-1430

(mechanism)
(mechanism)



Cullis, et al.

SYMCAQ-1963-9-167

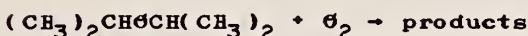
(mechanism)



Trimm and Cullis

JCSOA9-1963-1430

(mechanism)



Minkoff and Tipper
Shtern, V. Ya.

BBOKA7-1962-184
BBOKA7-1964

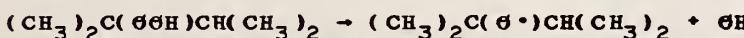
(review)
(review)



Cullis, et al.

SYMCAQ-1963-9-167

(mechanism)



Trimm and Cullis

JCSOA9-1963-1430

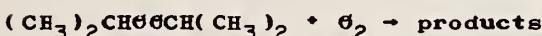
(mechanism)



Benson and O'Neal
Gray, et al.

NSRDAP-1970-21-429
PRKNAZ-1967-4-63

(review)
(review)

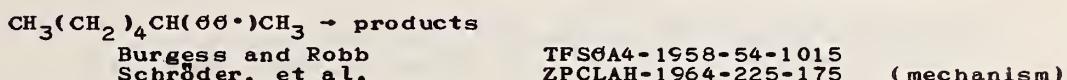
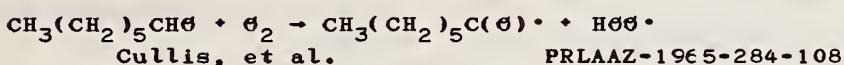
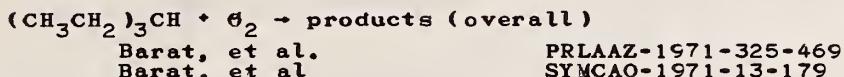
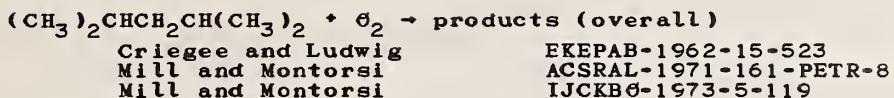
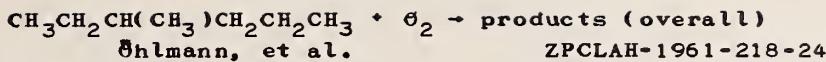


Chamberlain and Walsh

RIFPA9-1949-4-301

C₇ Compounds

CH ₃ (CH ₂) ₄ CH=CH ₂ + O ₂ → products Cullis, et al.	PRLAAZ-1969-311-253
CH ₃ (CH ₂) ₄ CH=CH ₂ + O ₃ → products Cadle and Schadt	JACSAT-1952-74-6002
cis- or trans-CH ₃ CH ₂ CH=CHCH ₂ CH ₂ CH ₃ + O ₃ → products Hanst, et al.	ACPCAT-1959-136-A7
CH ₃ (CH ₂) ₄ CH(•)CH ₃ + O ₂ → CH ₃ (CH ₂) ₄ CH(O ₂ •)CH ₃ Schröder, et al.	ZPCLAH-1964-225-175 (mechanism)
(CH ₃) ₃ CCH(CH ₃)CH ₂ • [or •CH ₂ C(CH ₃) ₂ CH(CH ₃) ₂ , or (CH ₃) ₃ CC(•)(CH ₃) ₂] + OH → product Greiner, N. R.	JCPA6-1970-53-1070
CH ₃ (CH ₂) ₅ CH ₃ + O → products Herron and Huie Herron and Huie Huie and Herron Marsh and Heicklen Öhlmann, G.	JPCHAX-1969-73-3327 JPCRBU-1973-2-467 (review) PRKNAZ-1975-8-1 (review) JPCHAX-1967-71-250 WZTLA3-1970-12-195
(CH ₃) ₃ CCH ₂ CH ₂ CH ₃ + O → products Herron and Huie Herron and Huie	JPCHAX-1969-73-3327 JPCRBU-1973-2-467 (review)
(CH ₃) ₂ CHCH ₂ CH(CH ₃) ₂ + O → products Herron and Huie Herron and Huie	JPCHAX-1969-73-3327 JPCRBU-1973-2-467 (review)
CH ₃ (CH ₂) ₅ CH ₃ + O ₂ → products (overall) Barnard and Harwood Bonner and Tipper Bonner and Tipper Burgess and Laughlin Burgess and Laughlin Chen, et al. Cullis, et al. Cullis, et al. Cullis, et al. Lischke, et al. Öhlmann, G. Öhlmann, et al. Öhlmann, et al. Orr, C. R. Pospelov and Saraeva Richter, et al. Richter, et al. Salooja, K. C. Saraeva, et al. Schröder, et al. Shtern, V. Ya. Szabo, et al. Tipper and Titchard Yantovskii, S. A. Yantovskii, S. A. Yantovskii, S. Ya. Yantovskii, S. A.	CBFMAG-1973-21-141 CBFMAG-1965-9-387 SYMCQA-1965-10-145 CCDMA8-1967-769 CBFMAG-1972-19-315 HHHPA4-1966-32-1 PRLAAZ-1966-292-575 PRLAAZ-1969-311-253 PRLAAZ-1965-284-108 SYMCQA-1971-13-195 ZPCLAH-1965-230-73 WZTLA3-1970-12-195 ZPCLAH-1961-218-24 ZPCLAH-1961-218-42 SYMCQA-1963-9-1034 NEFTAH-1968-8-543 ZPCLAH-1973-253-207 ZPCLAH-1973-253-217 CBFMAG-1968-12-597 NEFTAH-1967-7-596 ZPCLAH-1964-225-175 (mechanism) BÖÖKA7-1964 (review) ACASA2-1972-74-239 CBFMAG-1971-16-223 KICAA8-1964-5-27 KICAA8-1964-5-348 KICAA8-1966-7-16 KICAA8-1967-8-437



C₈ Compounds

- $(CH_3)_2C=CHCH=C(CH_3)_2 + O_2 \rightarrow$ products
 Salooja, K. C. CBFMAG-1968-12-597
- $CH_3(CH_2)_5CH=CH_2 + O_2 \rightarrow$ products
 Altwicker and Basila TETRAB-1973-29-1969
- $(CH_3)_2CHCH=CHCH(CH_3)_2 + O_2 \rightarrow$ products (overall)
 Criegee and Ludwig EKEPAB-1962-15-523
- $CH_3(CH_2)_5CH=CH_2 + O_3 \rightarrow$ products
 Altwicker and Basila TETRAB-1973-29-1969
 Cadle and Schadt JACSAT-1952-74-6002
- $CH_3(CH_2)_6CH_2 + [or CH_3(CH_2)_5CH(•)CH_3, or CH_3(CH_2)_4CH(•)CH_2CH_3,
 or CH_3(CH_2)_3CH(•)(CH_2)_2CH_3] + OH \rightarrow$ products
 Greiner, N. R. JCPSA6-1970-53-1070
- $(CH_3)_3CCH_2CH(CH_3)CH_2 + [or (CH_3)_3CCH_2C(•)(CH_3)_2, or (CH_3)_3CCH(•)CH(CH_3)_2,
 or •CH_2C(CH_3)_2CH_2CH(CH_3)_2] + OH \rightarrow$ products
 Greiner, N. R. JCPSA6-1970-53-1070
- $(CH_3)_3CC(CH_3)_2CH_2 + OH \rightarrow (CH_3)_3CC(CH_3)_2CH_2OH$
 Greiner, N. R. JCPSA6-1970-53-1070
- $CH_3(CH_2)_6CH_3 + O \rightarrow$ products
 Avramenko, et al. BACCAT-1967-247
 Herron and Huie JPCHAX-1969-73-3327
 Herron and Huie JPCRBU-1973-2-467 (review)
 Huie and Herron PRKNAZ-1975-8-1 (review)
- $CH_3(CH_2)_3CH(CH_3)CH_2CH_3 + O \rightarrow$ products
 Ford and Endow JCPSA6-1957-27-1277
 Herron and Huie JPCRBU-1973-2-467 (review)
- $(CH_3)_3CCH_2CH(CH_3)_2 + O \rightarrow$ products
 Herron and Huie JPCHAX-1969-73-3327
 Herron and Huie JPCRBU-1973-2-467 (review)
 Marsh and Heicklen JPCHAX-1967-71-250
 Michaud, et al. JPCHAX-1974-78-1457
- $(CH_3)_2CHCH(CH_3)CH(CH_3)_2 + O \rightarrow$ products
 Herron and Huie JPCHAX-1969-73-3327
 Herron and Huie JPCRBU-1973-2-467 (review)
- $(CH_3)_3CC(CH_3)_3 + O \rightarrow$ products
 Herron and Huie JPCHAX-1969-73-3327
 Herron and Huie JPCRBU-1973-2-467 (review)
- $CH_3(CH_2)_6CH_3 + O_2 \rightarrow$ products (overall)
 Cullis and Hinshelwood DFSGAW-1947-2-117
 Kuchta and Martindill CBFMAG-1967-11-212
 Nettleton, M. A. FUELAC-1974-53-99
 Salooja, K. C. CBFMAG-1968-12-597

$\text{CH}_3(\text{CH}_2)_6\text{CH}_3 + \text{O}_2 \rightarrow \text{products (overall)}$ (Cont'd)
 Shtern, V. Ya. B00KA7-1964 (review)
 Yoshizawa and Kawada BJSEA8-1973-16-576

$(\text{CH}_3)_2\text{CHCH}_2\text{CH}_2\text{CH}(\text{CH}_3)_2 + \text{O}_2 \rightarrow \text{products (overall)}$
 Criegee and Ludwig EKEPAB-1962-15-523
 Ohlmann, et al. ZPCLAH-1961-218-24

$(\text{CH}_3)_2\text{CHCH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2 + \text{O}_2 \rightarrow \text{products (overall)}$
 Burt, et al. CBFMA8-1965-9-159

$(\text{CH}_3)_3\text{CCH}_2\text{CH}(\text{CH}_3)_2 + \text{O}_2 \rightarrow \text{products}$
 Barnard and Harwood CBFMA8-1973-21-345
 Burt, et al. CBFMA8-1965-9-159
 Nettleton, M. A. FUELAC-1974-53-99
 Ohlmann, G. WZLTA3-1970-12-195
 Ohlmann, et al. ZPCLAH-1961-218-24
 Orr, C. R. SYMCAQ-1963-9-1034
 Polymeropoulos and Peskin CBSTBS-1972-5-165 (review)
 Salooja, K. C. CBFMA8-1968-12-597
 Shtern, V. Ya. B00KA7-1964 (review)
 Yantovskii, S. Ya. KICAA8-1966-7-16
 Yantovskii, S. A. KICAA8-1967-8-437

$\text{CH}_3(\text{CH}_2)_6\text{CH}_3 + \text{OH} \rightarrow \text{products}$
 Greiner, N. R. JCPSA6-1970-53-1070

$(\text{CH}_3)_3\text{CCH}_2\text{CH}(\text{CH}_3)_2 + \text{OH} \rightarrow \text{products}$
 Greiner, N. R. JCPSA6-1970-53-1070

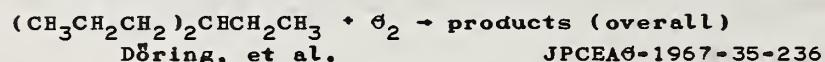
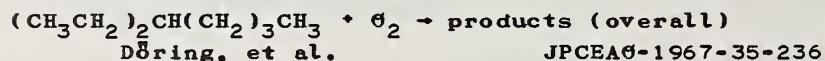
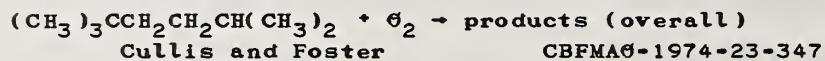
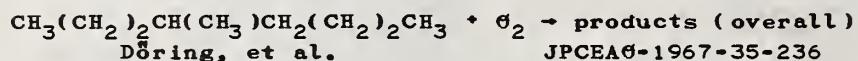
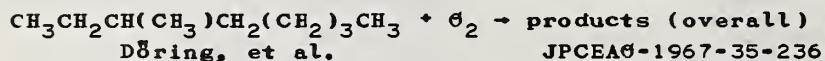
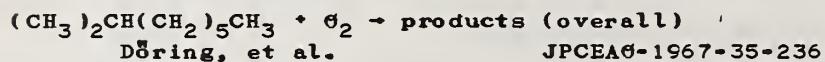
$(\text{CH}_3)_3\text{CC}(\text{CH}_3)_3 + \text{OH} \rightarrow \text{products}$
 Greiner, N. R. JCPSA6-1970-53-1070
 Greiner, N. R. JCPSA6-1970-53-1285

$(\text{CH}_3)_3\text{CCH}_2\text{C}(\text{CH}_3)_2\text{OH} \rightarrow \text{products}$
 Gray, et al. PRKNAZ-1967-4-63

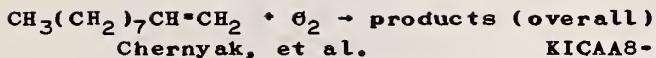
$(\text{CH}_3)_3\text{C}\text{O}\text{O}\text{C}(\text{CH}_3)_3 \rightarrow (\text{CH}_3)_3\text{C}(\text{O})^+ + (\text{CH}_3)_3\text{C}(\text{O})^-$
 Allara, et al. IJCKB8-1972-4-345 (calculation)
 Benson and O'Neal NSRDAP-1970-21-430 (review)
 Gray, et al. PRKNAZ-1967-4-63 (review)
 Raley, et al. JACSAT-1948-70-88
 Sokolova, et al. KICAA8-1973-14-977

$(\text{CH}_3)_3\text{C}\text{O}\text{O}\text{C}(\text{CH}_3)_3 + \text{O}_2 \rightarrow \text{products}$
 Blake and Kutschke CJCHAG-1961-39-278

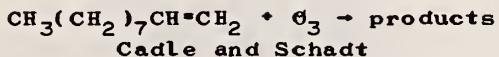
C₉ Compounds



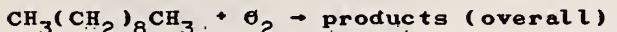
C₁₀ Compounds



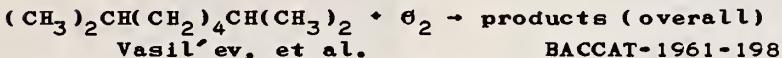
KICAA8-1973-14-685



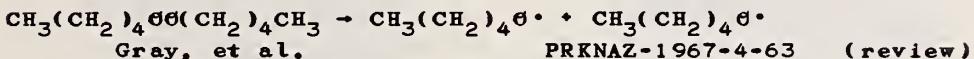
JACSAT-1952-74-6002



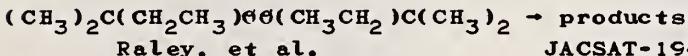
Cullis and Foster	CBFMAG-1974-23-347
Cullis and Foster	SYMCAO-1973-14-423
Cullis and Hinshelwood	DFSGAW-1947-2-117
Gol'dberg and Obukhova	NEFTAH-1963-3-223
Maizus, et al.	KICAA8-1961-2-488
Makarov, et al.	RJPCAR-1970-44-1431
Syroezhko and Potekhin	JAPUAW-1973-46-1403
Syroezhko, et al.	JAPUAW-1970-43-1803
Syroezhko, et al.	JAPUAW-1970-43-2315
Syroezhko, et al.	JAPUAW-1971-44-2082
Syroezhko, et al.	JAPUAW-1973-46-402
Vartanyan, et al.	ZFKHA9-1956-30-856
Vartanyan, et al.	ZFKHA9-1955-29-862



BACCAT-1961-198



PRKNAZ-1967-4-63 (review)



JACSAT-1948-70-88

REVIEWS

Altshuller and Bufalini	ESTHAG-1971-5-39
Avramenko and Kolesnikova	ADPCA2-1964-2-25
Baldwin and Walker	CBFMA9-1973-21-55
Baldwin and Walker	SYMCAQ-1973-14-241
Benson and S'Neal	NSRDAP-1970
Cvetanović, R. J.	CJCHAG-1960-38-1678
Cvetanović, R. J.	ADPCA2-1963-1-115
Demerjian, et al.	AESTC9-1974-4-1
Drysdale and Lloyd	GXCR4-1970-4-157
Engleman, V. S.	EPTSBD-1976-600/2:76:003-5/1
Fish, A.	QUREA7-1964-18-243
Fish, A.	ADCSAJ-1968-76-69
Fish, A.	ANCEAD-1968-80-53
Gray, et al.	PRKNAZ-1967-4-63
Hampson and Garvin	NBTNAE-1975-866
Hecht and Sienfeld	ESTHAG-1972-6-47
Heicklen, J.	ADCSAJ-1968-76-23
Herron, J. T.	IJCKB9-1969-1-527
Herron and Huie	JPCRBU-1973-2-467
Huie and Herron	PRKNAZ-1975-8-1
Knox, J. H.	ARPCAW-1962-59-18
Knox, J. H.	B66KA7-1967-250
Knox, J. H.	ADCSAJ-1968-76-1
Lewis and Von Elbe	B66KA7-1961-90
Lloyd, A. C.	IJCKB9-1974-6-169
McMillan and Calvert	GXCR4-1965-1-83
Minkoff and Tipper	B66KA7-1962
Minkoff and Tipper	B66KA7-1962-151
Nalbandyan, A. B.	B66KA7-1962-136
Niki, et al.	28KMA4-1972-140
Norrish, R. G. W.	ADCSAJ-1972-113-16
Ohlmann and Leibnitz	RIFPA9-1949-4-288
Pitts and Finlayson	ZPCLAH-1961-217-408
Schofield, K.	KADRCH-AD 763755
Semenoff, N.	PLSSAE-1967-15-643
Semenov, N. N.	B66KA7-1935
Semenov, N. N.	B66KA7-1959-2-217
Shtern, V. Ya.	B66KA7-1967-229
Steacie, E. W. R.	B66KA7-1964
Steacie, E. W. R.	ACMGAG-1954-125-1
Walker, R. W.	ACMGAG-1954-125-2
Williams and Smith	REKIDM-1975-1-161
Wilson, Wm. E., Jr.	CHREAY-1970-70-267
	JPCRBU-1972-1-535

Generalized Reaction Mechanism and Kinetics

Allara and Edelson	RCTEA4-1972-45-437
Antonik and Lucquin	BSCFAS-1971-3139
Atherton, et al.	SYMCAO-1973-14-513
Avramenko and Kolesnikova	DANKAS-1953-92-349
Avramenko and Kolesnikova	BACCAT-1955-345
Baldwin and Walker	CBFMA8-1973-21-55
Barat, et al.	PRLAAZ-1971-325-469
Barat, et al.	SYMCAO-1971-13-179
Bateman, et al.	DFSGAW-1951-10-250
Bell, et al.	DFSGAW-1951-10-242
Benson, S. W.	JACSAT-1965-87-972
Benson, S. W.	ADCSAJ-1968-76-143
Burgess and Robb	TFSGA4-1958-54-1015
Burt, et al.	CBFMA8-1965-9-159
Criegee and Ludwig	EKEPAB-1962-15-523
Cullis, et al.	PRLAAZ-1969-311-253
Cullis, et al.	SYMCAO-1971-13-195
Déchaux and Lucquin	SYMCAO-1971-13-205
Enikolopyan, et al.	ZFKHA9-1958-32-2224
Euker, C. A., Jr.	DABBBA-1970-30-4115
Euker and Leinroth	CBFMA8-1970-15-275
Fish, A.	ADCSAJ-1968-76-69
Fish, A.	ANCEAD-1968-80-53
Hecht, et al.	ESTHAG-1974-8-327
Heicklen, J.	ADCSAJ-1968-76-23
Heicklen and Johnston	JACSAT-1962-84-4394
Hermant, et al.	BSCFAS-1970-473
Hinshelwood, C. N.	DFSGAW-1951-10-266
Knox, J. H.	SYMCAO-1959-7-122
Knox, J. H.	ADCSAJ-1968-76-1
Knox, J. H.	CCOMA8-1965-108
Knox, J. H.	CBFMA8-1965-9-297
Knox, J. H.	B6KA7-1967-250
Lischke, et al.	ZPCLAH-1965-230-73
Mantashyan and Nalbandyan	RJPCAR-1972-46-1731
Minkoff and Tipper	B6KA7-1962-100
Mulcahy, M. F. R.	TFSGA4-1949-45-575
Mulcahy, M. F. R.	DFSGAW-1951-10-259
Norrish, R. G. W.	RIFPA9-1949-4-288
Norrish, R. G. W.	DFSGAW-1951-10-269
Noyes, W. A., Jr.	B6KA7-1957-64
Öhmann and Leibnitz	ZPCLAH-1961-217-408
Poroikova, et al.	KICAA8-1967-8-988
Ridge, M. J.	RPCAAW-1956-6
Sato and Cvetanović	CJCHAG-1959-37-953
Schröder, et al.	ZPCLAH-1964-225-175
Seakins and Hinshelwood	PRLAAZ-1963-276-324
Semenov, N. N.	B6KA7-1959-2
Semenov, N. N.	B6KA7-1967-229
Shtern, V. Ya.	B6KA7-1964
Subbaratnam, N. R.	ZPCFAX-1965-44-35
Vartanyan, et al.	ZFKHA9-1956-30-862
Vasil'ev, et al.	BACCAT-1961-198
Von Elbe and Lewis	JACSAT-1937-59-976
Walker, R. W.	REKIDM-1975-1-161

REFERENCES

- Abramov, V. N., and Fisak, V. I., "Temperature Dependence of the Induction Period of the Combustion of Lean Methane-Air Mixtures," *Probl. Teploenerg. Prikl. Teplofiz.* 78 (1972)
- Abramov, V. N., Leont'eva, T. P., and Fisak, V. I., "Combustion of Air-Methane Mixtures Containing Very Little Methane," *Teor. Prakt. Szhiganiya Gaza. Nauch.-Tekh. Obshchest. Energ. Prom.* 3, 245 (1967)
- Affleck, W. S., and Fish, A., "Two-Stage Ignition under Engine Conditions. Parallels that at Low Pressures," *Symp. Combust.* 11 (Combustion Institute, Pittsburgh, 1967) 1003
- Agasiev, R. A., and Shakhtakhtinskii, T. N., "Kinetics of n-Butane Oxidation to Maleic Anhydride," *Azerb. Khim. Zh.* No. 6 14 (1969)
- Aivazov, B. V., and Neiman, M. B., "The Conditions for the Inflammation of Gas Mixtures. VI. Cold Flames in Pentane-Oxygen Mixtures," *Zh. Fiz. Khim.* 8, 88 (1936)
- Aivazov, B. V., and Neiman, M. B., "Conditions for the Inflammation of Gas Mixtures. VII. Period of Induction of Cold Flames in Mixtures of Pentane with Oxygen," *Zh. Fiz. Khim.* 8, 543 (1936)
- Aivazov, B. V., and Neiman, M. B., "Inflammation of Gaseous Mixtures. VIII. Two-Stage Mechanism of Low-Temperature Self-Inflammation of Pentane," *Zh. Fiz. Khim.* 9, 231 (1937)
- Aivazov, B. V., and Neiman, M. B., "A Two-Stage Mechanism for the Low-Temperature Spontaneous Combustion of Hydrocarbons," *Acta Physicochim. URSS* 6, 279 (1937)
- Alaverdyan, G. Sh., Sachyan, G. A., and Nalbandyan, A. B., "Detection of HO_2 Radicals in the Thermal Oxidation of Propane," *Dokl. Chem.* 204, 436 (1972); tr. of *Dokl. Akad. Nauk SSSR* 204, 603 (1972)
- Aleksishvili, M. M., Molchanova, S. I., Polyak, S. S., and Shtern, V. Ya., "Propylene Formation Routes in the Propane Oxidation Reaction," *Dokl. Phys. Chem.* 318 (1972); tr. of *Dokl. Akad. Nauk SSSR* 203, 1328 (1972)
- Aleksishvili, M. M., Polyak, S. S., and Shtern, V. Ya., "Olefin Formation by Oxidation of Propane," *Vses. Konf. Kinet. Mekh. Gazofaz. Reakts.* 2nd, 8 (1971); *Ref. Zh. Khim., Abstr. No. 3N4* (1972); *Chem. Abstr.* 78:15275c (1973)
- Aleksishvili, M. M., Polyak, S. S., and Shtern, V. Ya., "Kinetics of the Slow Oxidation of Propane," *Kinet. Catal.* 15, 256 (1974); tr. of *Kinet. Katal.* 15, 290 (1974)
- Allara, D. L., and Edelson, D., "The Application of Model Reactions to the Oxidation of Polyolefins," *Rubber Chem. Technol.* 45, 437 (1972)
- Allara, D. L., Edelson, D., and Irwin, K. C., "Computational Modeling of the Mechanisms of the Free Radical-Chain Reaction of Alkanes with Oxygen. The Oxidation of Isobutane, n-Butane, and Isopentane," *Int. J. Chem. Kinet.* 4, 345 (1972)
- Allara, D. L., Mill, T., Hendry, D. G., and Mayo, F. R., "Low Temperature Gas- and Liquid-Phase Oxidations of Isobutane," *Adv. Chem. Ser.* 76, 40 (1968)
- Allara, D. L., Mill, T., Mayo, F. R., Richardson, H., and Irwin, K., "Gas- and Liquid-Phase Oxidations of n-Butane," *Am. Chem. Soc. Div. Petroleum Chem. Preprints* 16, B31 (1971)
- Altshuller, A. P., and Bufalini, J. J., "Photochemical Aspects of Air Pollution: A Review," *Environ. Sci. Technol.* 5, 39 (1971)

- Altshuller, A. P., Kopczynski, S. L., Lonneman, W. A., Recker, T. L., and Slater, R., "Chemical Aspects of the Photooxidation of the Propylene-Nitrogen Oxide System," *Environ. Sci. Technol.* **1**, 899 (1967)
- Altwicker, E. R., and Basila, J., "Contribution to the Kinetics of Ozone-Olefin Reactions," *Tetrahedron* **29**, 1969 (1973)
- Andreev, E. A., and Neiman, M. B., "Investigation of the Conditions of Ignition of Gaseous Mixtures. III. The Period of Induction and the Region of Thermal Ignition of Mixtures of Ethane with Oxygen," *Zh. Fiz. Khim.* **4**, 33 (1933); *Chem. Abstr.* **27**:3822 (1933)
- Anisyan, A. A., Beider, S. Ya., Markevich, A. M., and Nalbandyan, A. B., "Oxidation and Decomposition of Formaldehyde at High Temperatures," *Russ. J. Phys. Chem.* **33**, No. 8, 115 (1959); tr. of *Zh. Fiz. Khim.* **33**, 1695 (1959)
- Antonik, S., and Lucquin, M., "Les Mécanismes dans l'Oxydation de Basse Température des Composés Hydrocarbonés," *Bull. Soc. Chim. France* **4043** (1968)
- Antonik, S., and Lucquin, M., "Oxydation et Combustion de Basse Température du Néopentane en Présence de Bromure d'Hydrogène. I.- Existence de Deux Mécanismes de Ramification," *Bull. Soc. Chim. France* **2796** (1968)
- Antonik, S., and Lucquin, M., "Oxydation et Combustion de Basse Température du Néopentane en l'Absence et en Présence de Bromure d'Hydrogène. II.- Résultats Analytiques et Cinétiques," *Bull. Soc. Chim. France* **3139** (1971)
- Antonova, I. N., Kuzmin, V. A., Moshkina, R. I., Nalbandyan, A. B., Neiman, M. B., and Feklisov, G. I., "Study, with the Aid of Labeled Atoms, of the Reaction Mechanism of the Oxidation of Methane. Mechanism of the Formation of Carbon Monoxide," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* **711** (1955); tr. of *Izv. Akad. Nauk SSSR, Otd. Khim. Nauk* **789** (1955)
- Antonovskii, V. L., and Shtern, V. Ya., "The Negative Temperature Coefficient of the Rate of Oxidation of Propane," *Dokl. Akad. Nauk SSSR* **78**, 303 (1951)
- Arrington, C. A., Brennen, W., Glass, G. P., Michael, J. V., and Niki, H., "Reactions of Atomic Oxygen with Acetylene. I. Kinetics and Mechanisms," *J. Chem. Phys.* **43**, 525 (1965); see also G. P. Glass, "Comments," on A. Fontijn, et al., "Chemi-Ionization and Chemiluminescence in the Reaction of Atomic Oxygen with C_2H_2 , C_2D_2 and C_2H_4 ," *Symp. Combust.* **10**, (Combustion Institute, Pittsburgh, 1965) 557
- Artsis, E. S., Evzerikhin, E. I., Polyak, S. S., and Shtern, V. Ya., "Mechanism of Propylene Oxidation at Elevated Pressures," *Kinet. Catal.* **13**, 1006 (1972); tr. of *Kinet. Katal.* **13**, 1119 (1972)
- Asaba, T., Yoneda, K., Kakihara, N., and Hikita, T., "A Shock Tube Study of Ignition of Methane-Oxygen Mixtures," *Symp. Combust.* **9** (Academic Press, New York, 1963) 193
- Askey, P. J., "The Oxidation of Benzaldehyde and Formaldehyde in the Gaseous Phase," *J. Am. Chem. Soc.* **52**, 974 (1930)
- Atherton, J. G., Brown, A. J., Luckett, G. A., and Pollard, R. T., "Heterogeneity and Mechanism in Hydrocarbon Oxidation," *Symp. Combust.* **14** (Combustion Institute, Pittsburgh, 1973) 513
- Atkinson, R., and Cvitanović, R. J., "Determination of the Absolute Values of the Rate Constants of the Reactions of $O(^3P)$ Atoms with Alkenes by a Modulation Technique," *J. Chem. Phys.* **55**, 659 (1971); Erratum, *ibid.* **56**, 3733 (1972)

- Atkinson, R., and Cvetanović, R. J., "Activation Energies of the Addition of $\Theta(^3P)$ Atoms to Olefins," *J. Chem. Phys.* **56**, 432 (1972)
- Atkinson, R., Finlayson, B. J., and Pitts, J. N., Jr., "Photoionization Mass Spectrometer Studies of Gas Phase Ozone-Olefin Reactions," *J. Am. Chem. Soc.* **95**, 7592 (1973)
- Atkinson, R., and Pitts, J. N., Jr., "Temperature Dependence of the Reaction Rate Constants for $\Theta(^3P)$ Atoms with C_2H_4 , C_3H_6 and NO ($M = N_2O$), Determined by a Modulation Technique," *Chem. Phys. Lett.* **27**, 467 (1974)
- Avery, H. E., and Cvetanović, R. J., "Reaction of Oxygen Atoms with Acetaldehyde," *J. Chem. Phys.* **43**, 3727 (1965); Erratum, *ibid.*, **44**, 3150 (1966)
- Avramenko, L. I., and Kolesnikova, R. V., "The Experimental Determination of the Sequence for the Elementary Reactions of Atoms and Radicals," *Dokl. Akad. Nauk SSSR* **92**, 349 (1953)
- Avramenko, L. I., and Kolesnikova, R. V., "Experimental Determination of the Sequence of Successive Elementary Reactions of Atoms and Radicals," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 345 (1955); tr. of *Izv. Akad. Nauk SSSR, Otd. Khim. Nauk* 386 (1955)
- Avramenko, L. I., and Kolesnikova, R. V., "Kinetics and Mechanism of the Reaction of Ethyl Radicals with Molecular Oxygen. Communication 2. Dependence of Reaction Kinetics on Third Particle," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 924 (1960); tr. of *Izv. Akad. Nauk SSSR, Otd. Khim. Nauk* 989 (1960)
- Avramenko, L. I., and Kolesnikova, R. V., "Reactions of Atoms of Oxygen with Unsaturated Hydrocarbons," *Voprosy Khim. Kinetiki, Kataliza i Reaktsionnoi Sposobnosti, Akad. Nauk SSSR, Otdel. Khim. Nauk* 7 (1955) *Chem. Abstr.* **50**:7050i (1956)
- Avramenko, L. I., and Kolesnikova, R. V., "Elementary Reactions of Atomic Oxygen with Methane," *Dokl. Akad. Nauk SSSR* **91**, 107 (1953)
- Avramenko, L. I., and Kolesnikova, R. V., "Mechanisms and Rate Constants of Elementary Gas Phase Reactions Involving Hydroxyl and Oxygen Atoms," *Adv. Photochem.* **2**, 25 (1964)
- Avramenko, L. I., and Kolesnikova, R. V., "Oxygen Atom Reactions with Ethylene," *Zh. Fiz. Khim.* **30**, 581 (1956)
- Avramenko, L. I., and Kolesnikova, R. V., "Elementary Reactions of Simple Hydrocarbons with Atomic Oxygen," *Problemy Oksidirovaniya Uglevodorodov, Akad. Nauk SSSR Inst. Nefti* 51 (1954); *Chem. Abstr.* **50**:2516h (1956)
- Avramenko, L. I., and Kolesnikova, R. V., "Determination of the Elementary Reaction Rate Constants on the Basis of the Summary Values of the Rate Constants. Communication 1. Reactions of Oxygen Atoms with Saturated and Unsaturated Hydrocarbons," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* **20**, 2556 (1971); tr. of *Izv. Akad. Nauk SSSR, Ser. Khim.* 2693 (1971)
- Avramenko, L. I., and Kolesnikova, R. V., "Determination of the Elementary Reaction Rate Constants on the Basis of the Summary Values of the Rate Constants. Communication 2. Reactions of Oxygen Atoms with Oxygen-Containing Compounds," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* **20**, 2562 (1971); tr. of *Izv. Akad. Nauk SSSR, Ser. Khim.* 2700 (1971)
- Avramenko, L. I., and Kolesnikova, R. V., "Elementary Reaction of Atomic Oxygen with Ethane," *Dokl. Akad. Nauk SSSR* **89**, 1037 (1953)
- Avramenko, L. I., and Kolesnikova, R. V., "Kinetics and Mechanism of the Reaction of Ethyl Radicals with Molecular Oxygen," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 755 (1960); tr. of *Izv. Akad. Nauk SSSR, Otd. Khim. Nauk* 806 (1960)

- Avramenko, L. I., and Kolesnikova, R. V., "Kinetics and Mechanism of the Reaction of the CH_2OH Radical with O_2 Molecules," Bull. Acad. Sci. USSR, Div. Chem. Sci. 545 (1961); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 591 (1961)
- Avramenko, L. I., Kolesnikova, R. V., and Kuznetsova, N. L., "Rate Constant and Mechanism of the Reaction of Atomic Oxygen with Methyl Alcohol," Bull. Acad. Sci. USSR, Div. Chem. Sci. 552 (1961); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 599 (1961)
- Avramenko, L. I., Kolesnikova, R. V., and Kuznetsova, N. L., "Rate Constants and Mechanism of Reactions of Oxygen Atoms with Methane and Ethane," Bull. Acad. Sci. USSR, Div. Chem. Sci. 557 (1963); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 620 (1963)
- Avramenko, L. I., Kolesnikova, R. V., and Savinova, G. I., "Rate Constants of Reactions of Oxygen Atoms with *n*-Octane and *cis*- and *trans*-Butenes-2," Bull. Acad. Sci. USSR, Div. Chem. Sci. 247 (1967); tr. of Izv. Akad. Nauk SSSR, *Ser. Khim.* 253 (1967)
- Avramenko, L. I., Kolesnikova, R. V., and Savinova, G. I., "Mechanism and Rate Constant of the Reaction of Oxygen Atoms with Acetylene," Bull. Acad. Sci. USSR, Div. Chem. Sci. 396 (1965); tr. of Izv. Akad. Nauk SSSR, *Ser. Khim.* 408 (1965)
- Avramenko, L. I., Kolesnikova, R. V., and Savinova, G. I., "Rate Constants and Mechanism of Reactions of Oxygen Atoms with Ethanol and Propionaldehyde," Bull. Acad. Sci. USSR, Div. Chem. Sci. 19 (1967); tr. of Izv. Akad. Nauk SSSR, *Ser. Khim.* 22 (1967)
- Avramenko, L. I., Kolesnikova, R. V., and Savinova, G. I., "Rate Constant and Mechanism of the Reaction of Oxygen Atoms with *n*-Butane," Bull. Acad. Sci. USSR, Div. Chem. Sci. 890 (1963); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 976 (1963)
- Avramenko, L. I., Kolesnikova, R. V., and Savinova, G. I., "Rate Constants and Reaction Mechanisms of Oxygen Atoms with Ethylene, Propylene, and Isobutylene," Bull. Acad. Sci. USSR, Div. Chem. Sci. 30 (1963); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 36 (1963)
- Avramenko, L. I., Kolesnikova, R. V., and Sorokina, M. F., "Rate Constant and Mechanism of the Reaction of Atomic Oxygen with Acetaldehyde," Bull. Acad. Sci. USSR, Div. Chem. Sci. 930 (1961); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 1005 (1961)
- Avramenko, L. I., and Postnikov, L. M., "The Kinetics and Mechanism of the Interaction of Methyl Radicals with Molecular Oxygen," Bull. Acad. Sci. USSR, Div. Chem. Sci. 1796 (1960); tr. of Izv. Akad. Nauk SSSR, *Otd. Khim. Nauk* 1921 (1960)
- Avramenko, L. I., and Lorentso, R. V., "Reactions of Atomic Oxygen with Formaldehyde and Acetaldehyde," *Zh. Fiz. Khim.* 26, 1084 (1952)
- Avramenko, L. I., and Lorentso, R. V., "Reaktionen von Sauerstoffatomen mit Form- und Acetaldehyd," *Chem. Techn. (Berlin)* 5, 193 (1953)
- Axford, D. W. E., and Norrish, R. G. W., "Mechanism of the Oxidation of Gaseous Formaldehyde," *Nature* 160, 537 (1947)
- Axford, D. W. E., and Norrish, R. G. W., "The Oxidation of Gaseous Formaldehyde," *Proc. Roy. Soc. (London) A* 192, 518 (1948)
- Azatyany, V. V., "Combustion Limitation Method in the Heterogeneous Termination of Chains in Diffusion Range," *Arm. Khim. Zh.* 20, 577 (1967)
- Azatyany, V. V., Nalbandyan, A. B., and Tsui-Meng-Yuan "Determination of Rate Constants for the Reaction of Atomic Oxygen with Methane," *Kinet. Catal.* 5, 177 (1964); tr. of *Kinet. Katal.* 5, 201 (1964)

- Azatyian, V. V., Nalbandyan, A. B., and Tsui-Meng-Yuan "Determination of the Rate Constants of the Reaction of Atomic Oxygen and Ethane," *Dokl. Chem.* 147, 973 (1962); tr. of *Dokl. Akad. Nauk SSSR* 147, 361 (1962)
- Azatyian, V. V., Nalbandyan, A. B., and Tsui-Meng-Yuan "Determination of the Rate Constant for the Reaction of Atomic Oxygen with Propane and Butane," *Dokl. Akad. Nauk Arm. SSR* 36, 23 (1963)
- Azatyian, V. V., Nalbandyan, A. B., and Tsui-Meng-Yuan "Determination of the Rate Constants of the Elementary Reactions of Atomic Hydrogen and Oxygen with Ethylene," *Dokl. Phys. Chem.* 312 (1963); tr. of *Dokl. Akad. Nauk SSSR* 149, 1095 (1963)
- Azatyian, V. V., Nalbandyan, A. B., and Silakhtaryan, N. T., "Atomic Oxygen and Hydrogen Reactions with Propylene," *Izv. Akad. Nauk Arm. SSR, Khim. Nauki* 17, 117 (1964)
- Bader, R. F. W., and Gangi, R. A., "Theoretical Investigations of the Chemistry of Singlet and Triplet Species. I. Insertion and Abstraction Reactions," *J. Am. Chem. Soc.* 93, 1831 (1971)
- Badrian, A. S., Enikolopyan, N. S., and Furman, M. S., "The Influence of Pressure in the Gas-Phase Oxidation of Hydrocarbons," *Russ. J. Phys. Chem.* 33, 580 (1959); tr. of *Zh. Fiz. Khim.* 33, 2687 (1959)
- Railey, H. C., and Norrish, R. G. W., "The Oxidation of Hexane in the Cool-Flame Region," *Proc. Roy. Soc. (London) A* 212, 311 (1952)
- Baker, R. R., Baldwin, R. R., Fuller, A. R., and Walker, R. W., "Addition of n-C₄H₁₀ and C₄H₈ to Slowly Reacting Mixtures of Hydrogen and Oxygen at 480°C. Part 1.-Formation of Hydrocarbon Products," *J. Chem. Soc. Faraday Trans. I* 71, 736 (1975)
- Baker, R. R., Baldwin, R. R., and Walker, R. W., "Addition of n-Butane to Slowly Reacting Mixtures of Hydrogen and Oxygen at 480°C. Part 2.-Formation of Oxygenated Products," *J. Chem. Soc. Faraday Trans. I* 71, 756 (1975)
- Baker, R. R., Baldwin, R. R., and Walker, R. W., "The Formation of Acetone in the Oxidation of Neopentane," *Combust. Flame* 14, 31 (1970)
- Baker, R. R., Baldwin, R. R., and Walker, R. W., "The Use of the H₂ + O₂ Reaction in Determining the Velocity Constants of Elementary Reactions in Hydrocarbon Oxidation," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 291
- Baker, R. R., Baldwin, R. R., and Walker, R. W., "Addition of C₃H₈ to Slowly Reacting Mixtures of Hydrogen and oxygen at 480°C. Reactions of Propyl Radical," *Trans. Faraday Soc.* 66, 3016 (1970)
- Baldwin, R. R., Booth, D., and Walker, R. W., "Thermal and Isothermal Explosions in the Inhibition of the Hydrogen + Oxygen Reaction by Hydrocarbons," *Trans. Faraday Soc.* 58, 60 (1962)
- Baldwin, R. R., Corney, N. S., and Simmons, R. F., "The Inhibition of the Hydrogen-Oxygen Reaction by Hydrocarbons," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 502
- Baldwin, R. R., Corney, N. S., and Walker, R. W., "The Inhibition of the Hydrogen + Oxygen Reaction by Methane," *Trans. Faraday Soc.* 56, 802 (1960)
- Baldwin, R. R., and Cowe, D. W., "The Inhibition of the Hydrogen + Oxygen Reaction by Formaldehyde," *Trans. Faraday Soc.* 58, 1768 (1962)
- Baldwin, R. R., Everett, C. J., Hopkins, D. E., and Walker, R. W., "Reactions of Hydrocarbons in Slowly Reacting Hydrogen-Oxygen Mixtures," *Adv. Chem. Ser.* 76, 124 (1968)

- Baldwin, R. R., Hopkins, D. E., and Walker, R. W., "Addition of Ethane to Slowly Reacting Mixtures of Hydrogen and Oxygen at 500°C," *Trans. Faraday Soc.* 66, 189 (1970)
- Baldwin, R. R., Jackson, D., Walker, R. W., and Webster, S. J., "The Use of the Hydrogen-Oxygen Reaction in Evaluating Velocity Constants," *Symp. Combust.* 10 (Combustion Institute, Pittsburgh, 1965) 423
- Baldwin, R. R., Langford, D. H., Matchan, M. J., Walker, R. W., and Yorke, D. A., "The High-Temperature Oxidation of Aldehydes," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 251
- Baldwin, R. R., and Simmons, R. F., "The Inhibition of the Second Limit of the Hydrogen + Oxygen Reaction by Ethane," *Trans. Faraday Soc.* 51, 680 (1955)
- Baldwin, R. R., and Simmons, R. F., "The Inhibition of the First Limit of the Hydrogen + Oxygen Reaction by Ethane," *Trans. Faraday Soc.* 53, 955 (1957)
- Baldwin, R. R., and Simmons, R. F., "The Mechanism of the Inhibition of the Hydrogen + Oxygen Reaction by Ethane," *Trans. Faraday Soc.* 53, 964 (1957)
- Baldwin, R. R., and Walker, R. W., "Kinetics of Hydrogen-Oxygen and Hydrocarbon-Oxygen Reactions," AF Office Scientific Research (SREP) AFOSR 68-2666, Final Report, October 1968, U.S. NTIS Report AD 678631 (1968)
- Baldwin, R. R., and Walker, R. W., "Problems and Progress in Hydrocarbon Oxidation," *Symp. Combust.* 14 (Combustion Institute, Pittsburgh, 1973) 241
- Baldwin, R. R., and Walker, R. W., "The Role of Radical-Radical Reactions in Hydrocarbon Oxidation," *Combust. Flame* 21, 55 (1973)
- Baldwin, R. R., Walker, R. W., and Langford, D. H., "Oxidation of Propionaldehyde in Aged Boric-Acid-Coated Vessels. Part 1.-Kinetic Results," *Trans. Faraday Soc.* 65, 792 (1969)
- Baldwin, R. R., Walker, R. W., and Yorke, D. A., "Reaction of n-Propyl Radicals with Oxygen, Hydrogen and Deuterium," *J. Chem. Soc. Faraday Trans. I* 69, 826 (1973)
- Barassin, A., Lisbet, R., Combourieu, J., and Laffitte, P., "Étude de l'Influence de la Température Initiale sur la Vitesse Normale de Déflagration de Mélanges Méthane-Air en Fonction de la Concentration," *Bull. Soc. Chim. France* 2521 (1967)
- Barat, P., Cullis, C. F., and Pollard, R. T., "Studies of the Combustion of Branched-Chain Hydrocarbons," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 179
- Barat, P., Cullis, C. F., and Pollard, R. T., "The Cool-Flame Oxidation of 3-Ethylpentane," *Proc. Roy. Soc. (London) A* 325, 469 (1971)
- Bardwell, J., "The Kinetics of the Oxidation of Gaseous Methyl Ethyl Ketone. II," *Proc. Roy. Soc. (London) A* 207, 470 (1951)
- Bardwell, J., "Cool Flames in Butane Oxidation," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 529
- Bardwell, J., and Hinshelwood, C., "The Slow Oxidation of Gaseous Methyl Ethyl Ketone," *Proc. Roy. Soc. (London) A* 201, 26 (1950)
- Bardwell, J., and Hinshelwood, C., "The Cool Flame of Methyl Ethyl Ketone," *Proc. Roy. Soc. (London) A* 205, 375 (1951)
- Bardwell, J., and Hinshelwood, C., "The Kinetics of the Oxidation of Gaseous Methyl Ethyl Ketone. I," *Proc. Roy. Soc. (London) A* 207, 461 (1951)
- Barnard, J. A., "Slow Combustion of Ketones," *Adv. Chem. Ser.* 76, 98 (1968)

- Barnard, J. A., and Cohen, A., "Reaction of Methyl Radicals with Oxygen," *Trans. Faraday Soc.* 64, 396 (1968)
- Barnard, J. A., and Harwood, B. A., "Slow Combustion and Cool-Flame Behavior of Iso-Octane," *Combust. Flame* 21, 345 (1973)
- Barnard, J. A., and Harwood, B. A., "The Spontaneous Combustion of n-Heptane," *Combust. Flame* 21, 141 (1973)
- Barnard, J. A., and Sheikh, M. A., "Gas-Phase Oxidation of Aliphatic Ketones," *Pakistan J. Sci. Ind. Res.* 16, 93 (1973)
- Basco, N., James, D. G. L., and James, F. C., "A Quantitative Study of Alkyl Radical Reactions by Kinetic Spectroscopy. II. Combination of the Methyl Radical with the Oxygen Molecule," *Int. J. Chem. Kinet.* 4, 129 (1972)
- Basevich, V. Ya., Kogarko, S. M., and Furman, G. A., "The Mechanism of the Combustion of Methane," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 20, 1313 (1971); tr. of *Izv. Akad. Nauk SSSR Ser. Khim.* 1406 (1971)
- Basevich, V. Ya., Kogarko, S. M., and Furman, G. A., "Mechanism of the Combustion of Methane. Communication 2. The 'One-Dimensional' Atomic Flame," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 20, 2071 (1971); tr. of *Izv. Akad. Nauk SSSR, Ser. Khim.* 2191 (1971)
- Basevich, V. Ya., Kogarko, S. M., and Furman, G. A., "The Mechanism of the Combustion of Methane. Communication 3. O, H, OH, and Stable Products in an Atomic Flame," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 21, 2079 (1972); tr. of *Izv. Akad. Nauk SSSR, Ser. Khim.* 2139 (1972)
- Bastow, A. W., and Cullis, C. F., "Hydrocarbon Cool Flames and the Influence of Hydrogen Bromide," *Proc. Roy. Soc. (London) A* 338, 327 (1974)
- Bastow, A. W., and Cullis, C. F., "The Influence of Hydrogen Bromide on the Combustion of Hydrocarbons," in "Mechanisms of Hydrocarbon Reactions. A Symposium," Marta, F., and Kallo, D., editors (American Elsevier Publishing Co., Inc., New York, 1975) 765
- Bateman, L., Gee, G., Morris, A. L., and Watson, W. F., "The Velocity Coefficients of the Chain Propagation and Termination Reactions in Olefin Oxidations in Liquid Systems," *Discuss. Faraday Soc.* 10, 250 (1951)
- Batten, J. J., "Kinetics of the Gas-Phase Oxidation of Methanol Catalysed by Nitric Oxide," *Aust. J. Chem.* 17, 172 (1964)
- Batten, J. J., "Effect of Surface on the Gas-Phase Oxidation of Methanol Catalysed by Nitric Oxide," *Aust. J. Chem.* 17, 539 (1964)
- Bawn, C. E. H., and Skirrow, G., "The Oxidation of Olefins," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 521
- Becker, K. H., Schurath, U., and Seitz, H., "Ozone-Olefin Reactions in the Gas Phase I. Rate Constants and Activation Energies," *Int. J. Chem. Kinet.* 6, 725 (1974)
- Bell, E. R., Raley, J. H., Rust, F. F., Seubold, F. H., and Vaughan, W. E., "Reactions of Free Radicals Associated with Low Temperature Oxidation of Paraffins," *Discuss. Faraday Soc.* 10, 242 (1951)
- Bell, K. M., and McDowell, C. A., "Mercury-Photosensitized Oxidations of Hydrocarbons. Part II. The Mercury-Photosensitized Oxidation of Isobutane," *Can. J. Chem.* 39, 1424 (1961)
- Bell, K. M., and Tipper, C. F. H., "The Slow Combustion of Methyl Alcohol. A General Investigation," *Proc. Roy. Soc. (London) A* 238, 256 (1957)
- Benson, S. W., "Kinetics of Pyrolysis of Alkyl Hydroperoxides and Their O-O Bond Dissociation Energies," *J. Chem. Phys.* 40, 1007 (1964)

- Benson, S. W., "Effects of Resonance and Structure on the Thermochemistry of Organic Peroxy Radicals and the Kinetics of Combustion Reactions," *J. Am. Chem. Soc.* 87, 972 (1965)
- Benson, S. W., "Some Current Views of the Mechanism of Free Radical Oxidations," *Adv. Chem. Ser.* 76, 143 (1968)
- Benson, S. W., and O'Neal, H. E., "Kinetic Data on Gas Phase Unimolecular Reactions," *Natl. Std. Ref. Data Series NSRDS-NBS* 21 (1970), 645 pages
- Berry, T., Cullis, C. F., and Trimm, D. L., "Isotopic Tracer Studies of the Role of Butenes in the Combustion of n-Butane," *Proc. Roy. Soc. (London) A* 316, 377 (1970)
- Berry, T., Cullis, C. F., Saeed, M., and Trimm, D. L., "Formation of θ -Heterocycles as Major Products of the Gaseous Oxidation of n-Alkanes," *Adv. Chem. Ser.* 76, 86 (1968)
- Blake, A. R., and Kutschke, K. G., "The Oxidation of Di-tertiary-Butyl Peroxide," *Can. J. Chem.* 39, 278 (1961)
- Blakemore, J. E., "Pyrolysis and Partial Oxidation of n-Butane," *Diss. Abstr. Int. B* 31, 4653 (1971)
- Blat, E. J., Gerber, M. J., and Neiman, M. B., "The Influence of Organic Peroxides on the Cool Flame of Butane," *Acta Physicochim. URSS* 10, 273 (1939)
- Blundell, R. V., Cook, W. G. A., Hoare, D. E., and Milne, G. S., "Rates of Radical Reactions in Methane Oxidation," *Symp. Combust.* 10 (Combustion Institute, Pittsburgh, 1965) 445
- Blundell, A., and Skirrow, G., "Gas-Phase Oxidation of Butene-2," *Proc. Roy. Soc. (London) A* 244, 331 (1958)
- Bois d'Enghien, A.-P., Vrebosch, J., and Van Tiggelen, A., "Réactions Chimiques à Basse Pression dans une Décharge Électrique à Haute Fréquence. II. Comportement du Système Méthane-Oxygène," *Bull. Soc. Chim. France* 2321 (1968)
- Bone, W. A., and Allum, R. E., "The Slow Combustion of Methane," *Proc. Roy. Soc. (London) A* 134, 578 (1932)
- Bone, W. A., and Gardner, J. B., "Comparative Studies of the Slow Combustion of Methane, Methyl Alcohol, Formaldehyde, and Formic Acid," *Proc. Roy. Soc. (London) A* 154, 297 (1936)
- Bone, W. A., and Hill, S. G., "The Slow Combustion of Ethane," *Proc. Roy. Soc. (London) A* 129, 434 (1930)
- Bone, W. A., and Wheeler, R. V., "The Slow Oxidation of Methane at Low Temperatures," *J. Chem. Soc. (London)* 81, 535 (1902)
- Bone, W. A., and Wheeler, R. V., "The Slow Oxidation of Methane at Low Temperatures. Part II," *J. Chem. Soc. (London)* 83, 1074 (1903)
- Bonner, B. H., and Tipper, C. F. H., "The Cool Flame Combustion of Hydrocarbons. II. Propane and n-Heptane," *Combust. Flame* 9, 387 (1965)
- Bonner, B. H., and Tipper, C. F. H., "Cool-Flame Combustion of Hydrocarbons," *Symp. Combust.* 10 (Combustion Institute, Pittsburgh, 1965) 145
- Bowman, C. T., "An Experimental and Analytical Investigation of the High-Temperature Oxidation Mechanisms of Hydrocarbon Fuels," *Combust. Sci. Technol.* 2, 161 (1970)
- Bowman, C. T., and Seery, D. J., "Chemiluminescence in the High-Temperature Oxidation of Methane," *Combust. Flame* 12, 611 (1968)
- Bowman, C. T., and Seery, D. J., "Ignition Mechanisms of Hydrocarbon Fuels - Methane and Acetylene," *West. States Sect., Combust. Inst. [Pap.] No. 68-41* (1968)

- Brabbs, T. A., and Brokaw, R. S., "Shock Tube Measurements of Specific Reaction Rates in the Branched Chain CH_4 - $\text{C}_6\text{H}_5\text{O}_2$ System," Symp. Combust. 15 (Combustion Institute, Pittsburgh, 1975) 893
- Bradley, J. N., Edwards, A. D., and Gilbert, J. R., "The Gas-Phase Reactions of Singlet Oxygen Atoms with Methane," J. Chem. Soc. (London) A 326 (1971)
- Bradley, J. N., Hack, W., Hoyermann, K., and Wagner, H. G., "Kinetics of the Reaction of Hydroxyl Radicals with Ethylene and with C_3 Hydrocarbons," J. Chem. Soc. Faraday Trans. I 69, 1889 (1973)
- Bradley, J. N., and Kistiakowsky, G. B., "Shock Wave Studies by Mass Spectrometry. II. Polymerization and Oxidation of Acetylene," J. Chem. Phys. 35, 264 (1961)
- Bradley, J. N., and Tse, R. S., "Electron Spin Resonance Study of the Reaction between Oxygen Atoms and Acetylene," Trans. Faraday Soc. 65, 2685 (1969)
- Brokaw, R. S., and Jackson, J. L., "Effect of Temperature, Pressure, and Composition on Ignition Delays for Propane Flames," Symp. Combust. 5 (Reinhold Publishing Corp., New York, 1955) 563
- Brown, A. J., Burt, N. H., Luckett, C. A., and Pollard, R. T., "Thermokinetic Studies of the Cool-Flame and Multi-Stage Ignition of Hydrocarbons," in "Mechanisms of Hydrocarbon Reactions. A Symposium," Marta, F., and Kallo, D., editors (American Elsevier Publishing Co., Inc., New York, 1975) 751
- Brown, J. M., and Thrush, B. A., "E.S.R. Studies of the Reactions of Atomic Oxygen and Hydrogen with Simple Hydrocarbons," Trans. Faraday Soc. 63, 630 (1967)
- Brown, J., and Tipper, C. F. H., "Some Aspects of the Cool Flame Combustion of Propane, Cyclohexane and Their Conjugate Olefins," Combust. Flame 12, 79 (1968)
- Browne, W. G., Porter, R. P., Verlin, J. D., and Clark, A. H., "A Study of Acetylene-Oxygen Flames," Symp. Combust. 12 (Combustion Institution, Pittsburgh, 1969) 1035
- Bufalini, J. J., and Altshuller, A. P., "Kinetics of Vapor-Phase Hydrocarbon-Ozone Reactions," Can. J. Chem. 43, 2243 (1965)
- Bufalini, J. J., and Brubaker, K. L., "The Photooxidation of Formaldehyde at Low Partial Pressures," in "Chemical Reactions in Urban Atmospheres," C. S. Tuesday, editor (American Elsevier Publishing Co., Inc., New York, 1971) 225
- Bufalini, J. J., Gay, B. W., and Kopczynski, S. L., "Oxidation of n-Butane by the Photolysis of NO_2 ," Environ. Sci. Techn. 5, 333 (1971)
- Bunev, V. A., "Low Temperature Oxidation of Hydrogen-Air and Methanol-Air Mixtures," Combust. Explos. Shock Waves 8, 224 (1972); tr. of Fiz. Gorenija Vzryva 8, 279 (1972)
- Burgess, A. R., and Cullis, C. F., "The Gaseous Oxidation of Isopropyl Alcohol. Part II. Influence of the Surface on the Formation of Hydrogen Peroxide and Other Products," J. Chem. Soc. (London) 3401 (1961)
- Burgess, A. R., Cullis, C. F., and Newitt, E. J., "The Gaseous Oxidation of Isopropyl Alcohol. Part 1. The Influence of Temperature, Pressure, and Mixture Composition on the Formation of Hydrogen Peroxide and Other Products," J. Chem. Soc. (London) 1884 (1961)
- Burgess, A. R., and Laughlin, R. G. W., "The Role of Hydroperoxides as Chain-Branching Agents in the Cool-Flame Oxidation of n-Heptane," Chem. Commun. 769 (1967)

- Burgess, A. R., and Laughlin, R. G. W., "The Cool-Flame Oxidation of n-Heptane. Part I. The Kinetic Features of the Reaction," *Combust. Flame* 19, 315 (1972)
- Burgess, R. H., and Robb, J. C., "The Mercury-Photosensitized Oxidation of Hydrocarbons," *Trans. Faraday Soc.* 54, 1015 (1958)
- Burke, R., Dewael, F., and Van Tiggelen, A., "Kinetics of the Propylene-Oxygen Flame Reaction," *Combust. Flame* 7, 83 (1963)
- Burke, R., and Van Tiggelen, A., "Kinetics of Laminar Premixed Methane-Oxygen-Nitrogen Flames," *Bull. Soc. Chim. Belg.* 74, 426 (1965)
- Burt, R., Skuse, F., and Thomas, A., "Kinetic Spectroscopy of Intermediates in Reactions Leading to Ignition of Hydrocarbons," *Combust. Flame* 9, 159 (1965)
- Cadle, R. D., and Allen, E. R., "Kinetics of the Reaction of $\Theta(^3P)$ with Methane in Oxygen, Nitrogen, and Argon-Oxygen Mixtures," *J. Phys. Chem.* 69, 1611 (1965)
- Cadle, R. D., and Allen, E. R., "Reactions of $\Theta(^3P)$ with Aldehydes in Photochemical Smog," in "Chemical Reactions in Urban Atmospheres," C. S. Tuesday, editor (American Elsevier Publishing Co., Inc., New York, 1971) 63
- Cadle, R. D., and Powers, J. W., "The Reaction of $\Theta(^3P)$ with Acetaldehyde in a Fast-Flow System," *J. Phys. Chem.* 71, 1702 (1967)
- Cadle, R. D., and Schadt, C., "Kinetics of the Gas Phase Reaction of Olefins with Ozone," *J. Am. Chem. Soc.* 74, 6002 (1952)
- Cadle, R. D., Wickman, H. H., Hall, C. B., and Eberle, K. M., "The Reaction of Atomic Oxygen with Formaldehyde, Crotonaldehyde, and Dimethyl Sulfide," *Chemosphere* 3, 115 (1974)
- Callear, A. B., and Pereira, W. P. D., "Mercury-Photosensitized Reactions in Mixtures of Hydrogen, Ethylene and Oxygen," *Trans. Faraday Soc.* 59, 2774 (1963)
- Calvert, J. G., "The Decomposition Reactions of the Formyl and Acetyl Free Radicals," *J. Phys. Chem.* 61, 1206 (1957)
- Carabine, M. D., and Knox, J. H., "The Competitive Oxidation of Propene and Alkanes," *J. Chem. Soc. (London)* 862 (1963)
- Carr, R. W., Jr., Gay, I. D., Glass, G. P., and Niki, H., "Reaction of Ketene with Atomic Hydrogen and Oxygen," *J. Chem. Phys.* 49, 846 (1968)
- Carruthers, J. E., and Norrish, R. G. W., "The Photochemical Oxidation of Formaldehyde and Acetaldehyde," *J. Chem. Soc. (London)* 1036 (1936)
- Cathonet, M., and James, H., "Etude Expérimentale de l'Oxydation de Haute Température du Méthane. Émissions Lumineuses et Variations de Pression," *J. Chim. Phys. Phys.-Chim. Biol.* 70, 1171 (1973)
- Chamberlain, G. H. N., and Walsh, A. D., "L'oxydation Lente de l'Ether Di-isopropylique dans l'intervalle de températures 360°-460° C," *Rev. Inst. Fr. Pet. Ann. Combust. Liq.* 4, 301 (1949)
- Chen Shang-Xian, Xu You-Oian, Lü Xi-En, and Hu Jih-Heng, "Slow Oxidation of n-Heptane in Gas Phase," *Hua Hsueh Hsueh Pao* 32, 1 (1966)
- Cherneskey, M., and Bardwell, J., "Surface Effects in Butane Oxidation," *Can. J. Chem.* 38, 482 (1960)
- Chernyak, N. Ya., Antonovskii, V. L., Revzin, A. F., and Shtern, V. Ya., "Mechanism of the Oxidation of Hydrocarbons in the Gas Phase. IV. The High- and Low-Temperature Oxidation of Propane," *Zh. Fiz. Khim.* 28, 240 (1954)

- Chernyak, B. I., and Babii, A. P., "Kinetic Regularities of 1-Nonene Oxidation in an Open System," *Dopov. Akad. Nauk Ukr. RSR, Ser. B* 35, 750 (1973); *Chem. Abstr.* 79:145674p (1973)
- Chernyak, B. I., and Duda, Ya. V., "Kinetic Parameters of the Liquid-Phase Oxidation of Pent-1-ene," *Russ J. Phys. Chem.* 47, 751 (1973); tr. of *Zh. Fiz. Khim.* 47, 1322 (1973)
- Chernyak, B. I., Kucher, R. V., Troyan, A. A., and Nechitailo, L. G., "Kinetics of Thermal Decomposition of 1-Decene Hydroperoxide," *Kinet. Catal.* 14, 685 (1973); tr. of *Kinet. Katal.* 14, 790 (1973)
- Chernyak, N. Ya., and Shtern, V. Ya., "Upper-Temperature Oxidation of Propane," *Dokl. Akad. Nauk SSSR* 78, 91 (1951)
- Choo, K. Y., Golden, D. M., and Benson, S. W., "Very Low-Pressure Pyrolysis (VLPP) of t-Butylmethyl Ether," *Int. J. Chem. Kinet.* 6, 631 (1974)
- Christie, M. I., "Elementary Reactions in the Photochemical Oxidation of Methyl Iodide," *Proc. Roy. Soc. (London) A* 244, 411 (1958)
- Christie, M. I., and Collins, B. M., "Reaction of Oxygen Atoms (3P) with Acetaldehyde," *Nature* 218, 1245 (1968)
- Chung, Y.-H., and Sandler, S., "Kinetics of the Vapour-Phase Oxidation of n-Pentane in both Static and Flow Systems," *Combust. Flame* 7, 339 (1963)
- Cohen, A., "Explosive Reaction of Acetaldehyde with Oxygen," *Ballistic Res. Lab., Aberdeen Proving Ground, Md. BRL Report No. 1673 (Sept. 1973) U.S. NTIS Report AD 769715/4GA* (1973)
- Colket, M. B., III, Naegeli, D. W., and Glassman, I., "High-Temperature Pyrolysis of Acetaldehyde," *Int. J. Chem. Kinet.* 7, 223 (1975)
- Cooke, D. F., Dodson, M. G., and Williams, A., "A Shock-Tube Study of the Ignition of Methanol and Ethanol with Oxygen," *Combust. Flame* 16, 233 (1971)
- Cooke, D. F., and Williams, A., "Shock-Tube Studies of the Ignition and Combustion of Ethane and Slightly Rich Methane Mixtures with Oxygen," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 757
- Cox, R. A., and Penkett, S. A., "Aerosol Formation from Sulphur Dioxide in the Presence of Ozone and Olefinic Hydrocarbons," *J. Chem. Soc. Faraday Trans. I* 68, 1735 (1972)
- Crescitelli, S., Napolitano, F., Russo, G., and Tranchino, L., "Misure di Ritardi all' Autoignizione di Miscele di Propano, Ossigeno e Azoto," *Chim. Ind.* 55, 945 (1973)
- Criegee, R., and Ludwig, P., "Über den Mechanismus der Autoxydation von Kohlenwasserstoffen zu Bishydroperoxyden," *Erdoel Kohle Erdgas Petrochemie* 15, 523 (1962)
- Crossley, R. W., Dorko, E. A., Scheller, K., and Burcat, A., "The Effect of Higher Alkanes on the Ignition of Methane-Oxygen-Argon Mixtures in Shock Waves," *Combust. Flame* 19, 373 (1972)
- Cullis, C. F., Fish, A., and Gibson, J. F., "The Oxidation of Hydrocarbons: Studies of Spontaneous Ignition. I. Ignition Limits in Small Vessels," *Proc. Roy. Soc. (London) A* 284, 108 (1965)
- Cullis, C. F., Fish, A., and Gibson, J. F., "The Oxidation of Hydrocarbons: Studies of Spontaneous Ignition. II. Ignition Limits in Large Vessels," *Proc. Roy. Soc. (London) A* 292, 575 (1966)
- Cullis, C. F., Fish, A., and Gibson, J. F., "The Spontaneous Ignition of Mixtures of n-Heptane and 1-Heptene in Oxygen," *Proc. Roy. Soc. (London) A* 311, 253 (1969)

- Cullis, C. F., Fish, A., Saeed, M., and Trimm, D. L., "Alkylperoxy Radical Isomerization and Cool Flames," Proc. Roy. Soc. (London) A 289, 402 (1966)
- Cullis, C. F., Fish, A., and Trimm, D. L., "Isotopic Carbon as a Tracer in Combustion Research," Symp. Combust. 9 (Academic Press, New York, 1963) 167
- Cullis, C. F., Fish, A., and Turner, D. W., "The Gaseous Oxidation of 2-Methyl-but-2-ene. I. Kinetic and Analytical Studies," Proc. Roy. Soc. (London) A 262, 318 (1961)
- Cullis, C. F., Fish, A., and Ward, R. B., "The Influence of Bromine Compounds on Combustion Processes," Proc. Roy. Soc. (London) A 276, 527 (1963)
- Cullis, C. F., and Foster, C. D., "Studies of the Spontaneous Ignition of Hydrocarbons and the Application of Computer Techniques," Symp. Combust. 14 (Combustion Institute, Pittsburgh, 1973) 423
- Cullis, C. F., and Foster, C. D., "Studies of the Spontaneous Ignition in Air of Binary Hydrocarbon Mixtures," Combust. Flame 23, 347 (1974)
- Cullis, C. F., Hardy, F. R. F., and Turner, D. W., "The Point of Oxygen Attack in the Combustion of Hydrocarbons. II. The Formation and Origin of Ketones," Proc. Roy. Soc. (London) A 251, 265 (1959)
- Cullis, C. F., and Hinshelwood, C. N., "Part III. Low-Temperature Oxidation of Higher Paraffins in Relation to Structure," Discuss. Faraday Soc. 2, 117 (1947)
- Cullis, C. F., Holwill, J. M., and Pollard, R. T., "The Influence of Amines on the Combustion of n-Heptane," Symp. Combust. 13 (Combustion Institute, Pittsburgh, 1971) 195
- Cullis, C. F., and Mulcahy, M. F. R., "L'oxydation Lente des Hydrocarbures," Rev. Inst. Fr. Pet. Ann. Combust. Liq. 4, 283 (1949)
- Cullis, C. F., and Newitt, E. J., "The Gaseous Oxidation of Aliphatic Alcohols. I. Ethyl Alcohol: The Products Formed in the Early Stages," Proc. Roy. Soc. (London) A 237, 530 (1956)
- Cullis, C. F., and Newitt, E. J., "The Gaseous Oxidation of Aliphatic Alcohols. II. Ethyl Alcohol: The Products formed in the Later Stages of Reaction," Proc. Roy. Soc. (London) A 242, 516 (1957)
- Cullis, C. F., and Newitt, E. J., "The Gaseous Oxidation of Aliphatic Alcohols. III. n- and iso-Propyl Alcohols," Proc. Roy. Soc. (London) A 257, 402 (1960)
- Cullis, C. F., Saeed, M., and Trimm, D. L., "Quantitative Aspects of Alkylperoxy Radical Isomerization during Hydrocarbon Combustion," Proc. Roy. Soc. (London) A 300, 455 (1967)
- Cullis, C. F., and Warwicker, E. A., "The Gaseous Oxidation of Aliphatic Alcohols. IV. The Isomeric Butyl Alcohols," Proc. Roy. Soc. (London) A 264, 392 (1961)
- Cusin, F., and James, H., "Mécanisme de l'Inhibition par l'Éthane de la Combustion Explosive de l'oxyde de Carbone. I.-Inhibition du Type à Flammes à Longs Retards aux Concentrations Relativement Élevées en Éthane.-Inhibition pour les Mélanges très Faiblement Concentrés en Éthane," J. Chim. Phys. Phys.-Chim. Biol. 59, 454 (1962)
- Cvetanović, R. J., "Reaction of Oxygen Atoms with Ethylene," J. Chem. Phys. 23, 1375 (1955)
- Cvetanović, R. J., "Mechanism of the Interaction of Oxygen Atoms with Olefins," J. Chem. Phys. 25, 376 (1956)
- Cvetanović, R. J., "Reaction of Oxygen Atoms with Acetaldehyde," Can. J. Chem. 34, 775 (1956)

- Cvetanović, R. J., "Molecular Rearrangements in the Reactions of Oxygen Atoms with Olefins," *Can. J. Chem.* 36, 623 (1958)
- Cvetanović, R. J., "Relative Rates of Reactions of Oxygen Atoms with Olefins," *J. Chem. Phys.* 30, 19 (1959)
- Cvetanović, R. J., "Temperature Dependence of the Rates of Addition of Oxygen Atoms to Olefins," *J. Chem. Phys.* 33, 1063 (1960)
- Cvetanović, R. J., "Electrophilic Character of Oxygen Atoms," *Can. J. Chem.* 38, 1678 (1960)
- Cvetanović, R. J., "Addition of Atoms to Olefins in the Gas Phase," *Adv. Photochem.* 1, 115 (1963)
- Cvetanović, R. J., and Doyle, L. C., "Reaction of Oxygen Atoms with Butadiene," *Can. J. Chem.* 38, 2187 (1960)
- Dabora, E. K., "Effect of NO_2 on the Ignition Delay of CH_4 -Air Mixtures," *Combust. Flame* 24, 181 (1975)
- Daby, E. E., Stedman, D. H., and Niki, H., "Mass Spectrometric Studies of the Reactions of Formaldehyde and Acetaldehyde with Atomic Oxygen in a Discharge-Flow System," *Am. Chem. Soc., National Meeting, Abstracts of papers*, 160, PHYS-122 (1970)
- Dahm, D. B., and Verhoek, F. H., "An Investigation of the Gas-Phase Reaction of n-Pentane with Oxygen in the Low-Temperature Region using a Chemical Shock Tube," *Combust. Flame* 12, 380 (1968); see also *Diss. Abstr. B* 27, 3884 (1964)
- Dardin, V. J., Jr., and Albright, L. F., "Partial Oxidation of Propane Initiated by Ozone," *Ind. Engr. Chem., Proc. Design Develop.* 4, 61 (1965); see also *Diss. Abstr.* 23, 960 (1962)
- Davis, D. D., Fischer, S., Schiff, R., Watson, R. T., and Bollinger, W., "A Kinetics Study of the Reaction of OH Radicals with Two C_2 Hydrocarbons: C_2H_4 and C_2H_2 ," *J. Chem. Phys.* 63, 1707 (1975)
- Davis, D. D., Huie, R. E., and Herron, J. T., "Direct Rate Measurements Showing Negative Temperature Dependence for Reaction of Atomic Oxygen with cis-2-Butene and Tetramethylethylene," *J. Chem. Phys.* 59, 628 (1973)
- Davis, D. D., Huie, R. E., Herron, J. T., Kurylo, M. J., and Braun, W., "Absolute Rate Constants for the Reaction of Atomic Oxygen with Ethylene over the Temperature Range 232-500°K," *J. Chem. Phys.* 56, 4868 (1972)
- Dean, A. M., and Kistiakowsky, G. B., "Oxidation of Carbon Monoxide/Methane Mixtures in Shock Waves," *J. Chem. Phys.* 54, 1718 (1971)
- Déchaux, J.-C., and Antonik, S., "Mécanismes d'Oxydation de l'Éthane à Basse Température et dans la Zone du Coefficient Négatif," *C. R. Hebd. Séances Acad. Sci. (Paris) C* 278, 101 (1974)
- Déchaux, J.-C., and Lucquin, M., "Inhibition by Nitrogen Dioxide of the Slow Oxidation of Butane at Low Temperatures," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 205
- DeGraff, B. A., and Calvert, J. G., "A Study of the Primary Processes in CH_2O and CD_2O Photolyses," *J. Am. Chem. Soc.* 89, 2247 (1967)
- Degtyareva, T. G., Solyanikov, V. M., and Denisov, Ye. T., "Kinetics and Composition of Isopentane Liquid-Phase Oxidation Products," *Neftekhimiya* 12, 712 (1972); *Chem. Abstr.* 78:29138x (1973)
- Degtyareva, T. G., Solyanikov, V. M., and Denisov, Ye. T., "Degenerate Chain Branching Mechanism in Oxidizing Isopentane," *Neftekhimiya* 12, 854 (1972)
- Degtyareva, T. G., Solyanikov, V. M., and Denisov, Ye. T., "Initiated Liquid-Phase Oxidation of Isopentane," *Neftekhimiya* 13, 82 (1972)
- Demerjian, K. L., Kerr, J. A., and Calvert, J. G., "The Mechanism of Photochemical Smog Formation," *Adv. Environ. Sci. Techn.* 4, 1 (1974)

- DeMore, W. B., "Arrhenius Constants for the Reactions of Ozone with Ethylene and Acetylene," *Int. J. Chem. Kinet.* 1, 209 (1969)
- DeMore, W. B., "Activation Energies for Addition of O(³P) to Simple Olefins," *Chem. Phys. Lett.* 16, 608 (1972)
- DeMore, W. B., and Raper, G. F., "Reaction of O(¹D) with Methane," *J. Chem. Phys.* 46, 2500 (1967)
- Dever, D. F., and Calvert, J. G., "Rate Studies of the Oxidation of Methyl Radicals in Oxygen-Rich Media at 25°," *J. Am. Chem. Soc.* 84, 1362 (1962)
- De Wilde, E., and Van Tiggelen, A., "Burning Velocities in Mixtures of Methyl Alcohol, Formaldehyde or Formic Acid with Oxygen," *Bull. Soc. Chim. Belg.* 77, 67 (1968)
- Dillemuth, F. J., and Schubert, C. C., "The Reaction of Ozone with the Hydrocarbons - Possible Role of Ozone in Normal Combustions," *Western States Sect. Combust. Inst.*, Paper WSS/CI 63-22 (1963); *Chem. Abstr.* 60:10440b (1964)
- Dillemuth, F. J., Skidmore, D. R., and Schubert, C. C., "The Reaction of Ozone with Methane," *J. Phys. Chem.* 64, 1496 (1960)
- Dingledy, D. P., and Calvert, J. G., "A Study of the Ethyl-Oxygen Reaction by Flash Photolysis," *J. Am. Chem. Soc.* 85, 856 (1963)
- Dixon-Lewis, G., and Williams, A., "Some Observations on the Combustion of Methane in Premixed Flames," *Symp. Combust.* 11 (Combustion Institute, Pittsburgh, 1967) 951
- Döring, C.-E., Gross, H., Hahn, I., Hauthal, H. G., Pritzkow, W., and Szalajko, U., "Bestimmung der relativen Autoxydationsgeschwindigkeiten verschiedener Kohlenwasserstoffe durch Konkurrenzreaktion," *J. Prakt. Chem.* (4) 35, 236 (1967)
- Dorko, E. A., Bass, D. M., Crossley, R. W., and Scheller, K., "Shock Tube Investigation of Ignition in Methane-Oxygen-Nitrogen Dioxide-Argon Mixtures," *Combust. Flame* 24, 173 (1975)
- Drummond, L. J., "Shock Initiated Oxidation of Formaldehyde," *Combust. Sci. Technol.* 3, 47 (1971)
- Dryer, F. L., "High Temperature Oxidation of Carbon Monoxide and Methane in a Turbulent Flow Reactor," *Diss. Abstr. Int. B* 34, 1539 (1973)
see also: "High Temperature Oxidation of Carbon Monoxide and Methane in a Turbulent Flow Reactor," AFOSR Scientific Report TR-72-1109 (Mar. 1972) U.S. NTIS Report AD 746284 (1972)
- Dryer, F. L., and Glassman, I., "High-Temperature Oxidation of CO and CH₄," *Symp. Combust.* 14 (Combustion Institute, Pittsburgh, 1973) 987
- Drysdale, D. D., "The Induction Period in Low-Temperature Hydrocarbon Oxidation," *Combust. Flame* 17, 261 (1971)
- Drysdale, D. D., and Lloyd, A. C., "Gas Phase Reactions of the Hydroxyl Radical," *Oxidation Combust. Rev.* 4, 157 (1970)
- Drysdale, D. D., and Norrish, R. G. W., "The Oxidation of Neopentane," *Proc. Roy. Soc. (London) A* 308, 305 (1969)
- D'Souza, M. V., and Karim, G. A., "An Analytical Study of Methane Oxidation in a Steady Flow Reactor," *Combust. Sci. Techn.* 3, 83 (1971)
- Dzotsenidze, Z. G., Oganesyan, K. T., Sachyan, G. A., and Nalbandyan, A. B., "Mechanism of the Reaction of Atomic Oxygen with Ethyl Alcohol. Rate Constant," *Arm. Khim. Zh.* 20, 983 (1967)
- Eberius, K. H., Hoyermann, K., and Wagner, H. G., "Structure of Lean Acetylene-Oxygen Flames," *Symp. Combust.* 14 (Combustion Institute, Pittsburgh, 1973) 147

- Egerton, A. C., Minkoff, G. J., and Salooja, K. C., "The Slow Oxidation of Methane," Proc. Roy. Soc. (London) A 235, 158 (1956)
- Egerton, A. C., Minkoff, G. J., and Salooja, K. C., "The Slow Oxidation of Methane-The Role of the Surface on the Course of the Oxidation of Methane," Combust. Flame 1, 25 (1957)
- Egerton, A. C., and Roy, K. K., "The Oxidation of Weak Methane Mixtures at High Temperature," Zeit. Elektrochem. 61, 584 (1957)
- Elias, L., "Reinvestigation of Some Absolute Rate Measurements of θ -Atom Reactions with Olefins," J. Chem. Phys. 38, 989 (1963)
- Elias, L., and Schiff, H. I., "Absolute Rate Measurements of θ -Atom Reactions with Ethylene and with Butane," Can. J. Chem. 38, 1657 (1960)
- Engleman, V. S., "Survey and Evaluation of Kinetic Data on Reactions in Methane/Air Combustion," Environ. Prot. Technol. Ser. Report No. EPA-600/2-76-003; (EPA, Research Triangle Park, NC 27711, 1976)
- Enikolopyan, N. S., "Kinetics and Mechanism of Methane Oxidation," Symp. Combust. 7 (Butterworths, London, 1959) 157
- Enikolopyan, N. S., and Bel'govskii, I. M., "The Catalytic Oxidation of Methane and Methyl Alcohol," Russ. J. Phys. Chem. 34, 749 (1960); tr. of Zh. Fiz. Khim. 34, 1571 (1960)
- Enikolopyan, N. S., Kleimenov, N. A., Karmilova, L. V., Markevich, A. M., and Nalbandyan, A. B., "Production of Formaldehyde in a Flow Unit by Oxidation of Methane, Catalyzed by Nitrogen Oxides," J. Appl. Chem. USSR 32, 930 (1959); tr. of Zh. Prikl. Khim. 32, 913 (1959)
- Enikolopyan, N. S., and Konareva, G. P., "Homogeneous Catalysis in the Gas-Phase Oxidation of Hydrocarbons. Communication 1. Nature of the Two Heat-Evolution Maxima," Bull. Acad. Sci. USSR, Div. Chem. Sci. 389 (1960); tr. of Izv. Akad. Nauk SSSR, Otd. Khim. Nauk 419 (1960)
- Enikolopyan, N. S., and Konareva, G. P., "Homogeneous Catalysis in Gas-Phase Oxidation of Hydrocarbons. Communication 2. Effect of Nitromethane on the Oxidation of Methane," Bull. Acad. Sci. USSR, Div. Chem. Sci. 210 (1961); tr. of Izv. Akad. Nauk SSSR, Otd. Khim. Nauk 230 (1961)
- Enikolopyan, N. S., and Korolev, G. V., "Yields of Formaldehyde and Acetaldehyde in the High-Temperature Oxidation of Ethane," Dokl. Phys. Chem. 118, 115 (1958); tr. of Dokl. Akad. Nauk SSSR 118, 1138 (1958)
- Enikolopyan, N. S., and Korolev, G. V., "Dependence of the Yield of Formaldehyde in the Oxidation of Methane on the Concentration of Homogeneous Initiator, the Amount of Inert Gas and the Condition of the Walls of the Reaction Vessel," Dokl. Phys. Chem. 118, 95 (1958); tr. of Dokl. Akad. Nauk SSSR 118, 983 (1958)
- Enikolopyan, N. S., Korolev, G. V., and Savushkina, G. P., "The Maximum Concentration of Stable Intermediates in Complex Chain Reactions," Zh. Fiz. Khim. 31, 865 (1957)
- Enikolopyan, N. S., Polyak, S. S., and Shtern, V. Ya., "The Nature of the Cold-Flame Phenomenon," Zh. Fiz. Khim. 32, 2224 (1958)
- Euker, C. A., Jr., and Leinroth, J. P., Jr., "The Vapor-Phase Oxidation of n-Butane in a Flow Reactor," Combust. Flame 15, 275 (1970); see also Diss. Abstr. Int. B 30, 4115 (1970)
- Eusuf, M., and Wagner, H. Gg., "Stabilisierung des Additionskomplexes bei der Reaktion $\theta + C_2H_4$," Ber. Bunsenges. Phys. Chem. 76, 437 (1972)
- Evlanov, S. F., "Features of the Combustion of Rich Methane - Oxygen Mixtures," Kinet. Catal. 14, 427 (1973); tr. of Kinet. Katal. 14, 504 (1973)
- Falconer, J. W., and Knox, J. H., "The High-Temperature Oxidation of Propane," Proc. Roy. Soc. (London) A 250, 493 (1959)

- Falconer, W. E., Knox, J. H., and Trotman-Dickenson, A. F., "Competitive Oxidations. Part II. The Lower Alkanes and Cyclopropane," *J. Chem. Soc. (London)* 782 (1961)
- Falconer, W. E., Knox, J. H., and Trotman-Dickenson, A. F., "Competitive Oxidations. Part III. Oxidations at Low Temperatures Induced by Light," *J. Chem. Soc. (London)* 4285 (1961)
- Falconer, W. E., and van Tiggelen, A., "A Kinetic Study of Hydrocarbon-Oxygen-Nitrogen Flame Systems and Molecular Weights of Chain Carriers," *Symp. Combust. 9* (Academic Press, New York, 1963) 689
- Fenimore, C. P., and Jones, G. W., "Formation of Carbon Monoxide in Methane Flames by Reaction of Oxygen Atoms with Methyl Radicals," *J. Phys. Chem.* 65, 1532 (1961)
- Fenimore, C. P., and Jones, G. W., "Rate of Reaction of Methane with H Atoms and OH Radicals, in Flames," *J. Phys. Chem.* 65, 2200 (1961)
- Fenimore, C. P., and Jones, G. W., "The Decomposition of Ethylene and Ethane in Premixed Hydrocarbon-Oxygen-Hydrogen Flames," *Symp. Combust. 9* (Academic Press, New York, 1963) 597
- Fenimore, C. P., and Jones, G. W., "Destruction of Acetylene in Flames with Oxygen," *J. Chem. Phys.* 39, 1514 (1963)
- Filippova, T. V., and Blyumberg, E. A., "Comparison of the Propene Oxidation Mechanism in Gas and Liquid Phases," *Vses. Konf. Kinet. Mekh. Gazofazn. Reakts.*, 2nd, 21 (1971); *Ref. Zh. Khim., Abstr. No. 5B1154* (1972); *Chem. Abstr.* 78:15266a (1973)
- Filippova, T. V., and Blyumberg, E. A., "Epoxidation of Propylene during Gas Phase Oxidation," *Neftekhimiya* 13, 673 (1973)
- Filippova, T. V., and Blyumberg, E. A., "Comparison between Liquid and Gas Phase Mechanisms of Propylene Oxidation," *Neftekhimiya* 14, 612 (1974)
- Finkelstein, A., and Noyes, W. A., Jr., "The Reactions of Radicals from Diethyl Ketone with Oxygen. Part 1," *Discuss. Faraday Soc.* 14, 76 (1953)
- Fish, A., "Radical Rearrangement in Gas-Phase Oxidation and Related Processes," *Quarterly Rev. (London)* 18, 243 (1964)
- Fish, A., "The Non-Isothermal Oxidation of 2-Methylpentane. I. The Properties of Cool Flames," *Proc. Roy. Soc. (London) A* 293, 378 (1966)
- Fish, A., "The Non-Isothermal Oxidation of 2-Methylpentane. II. The Chemistry of Cool Flames," *Proc. Roy. Soc. (London) A* 298, 204 (1967)
- Fish, A., "Kalte Flammen von Kohlenwasserstoffen," *Angew. Chem.* 80, 53 (1968)
- Fish, A., "Chain Propagation in the Oxidation of Alkyl Radicals," *Adv. Chem. Ser. (Am. Chem. Soc. Washington)* 76, 69 (1968)
- Fish, A., "The Non-Isothermal Oxidation of Neopentane," *Combust. Flame* 13, 23 (1969)
- Fish, A., Haskell, W. W., and Read, I. A., "The Non-Isothermal Oxidation of 2-Methylpentane. III. The Reaction at High Pressure," *Proc. Roy. Soc. (London) A* 313, 261 (1969)
- Fish, A., and Waris, A., "Gaseous Oxidation of Aliphatic Esters. Part I. Slow Combustion of Ethyl Acetate," *J. Chem. Soc. (London)* 4513 (1962)
- Fish, A., and Wilson, J. P., "The Nonisothermal Oxidation of 2,3-Dimethylbutane," *Symp. Combust. 13* (Combustion Institute, Pittsburgh, 1971) 229
- Fisher, I. P., and Tipper, C. F. H., "Methylhydroperoxide and the Slow Combustion of Methane," *Nature* 195, 489 (1962)
- Fok, N. V., and Nalbandyan, A. B., "Mercury-Sensitized Photochemical Oxidation of Propane at Low Temperatures," *Dokl. Akad. Nauk SSSR* 86, 589 (1952)

- Ford, H. W., and Endow, N., "Rate Constants at Low Concentrations. IV. Reactions of Atomic Oxygen with Various Hydrocarbons," *J. Chem. Phys.* 27, 1277 (1957)
- Fort, R., and Hinshelwood, C. N., "Further Investigations on the Kinetics of Gaseous Oxidation Reactions," *Proc. Roy. Soc. (London) A* 129, 284 (1930)
- Frazier, G. C., Jr., and Kooyman, W. J., "Application of the Point Source Technique to the Study of Fast, Second-Order, Gas-Phase Reactions," *Chem. Eng. Sci.* 23, 353 (1968)
- Frear, G. L., "Kinetics of the Methane-Oxygen Reaction," *J. Am. Chem. Soc.* 56, 305 (1934)
- Fristrom, R. M., "Radical Concentrations and Reactions in a Methane-Oxygen Flame," *Symp. Combust. 9* (Academic Press, New York, 1963) 560
- Fristrom, R. M., and Westenberg, A. A., "Experimental Chemical Kinetics from Methane-Oxygen Laminar Flame Structure," *Symp. Combust. 8* (Williams and Wilkins Co., Baltimore, Maryland, 1962) 438
- Froben, F. W., "Die Reaktion von O-Atomen mit Methan, Chloroform und Tetrachlorkohlenstoff," *Ber. Bunsenges. Phys. Chem.* 72, 996 (1968)
- Furuyama, S., Atkinson, R., Colussi, A. J., and Cvetanović, R. J., "Determination by the Phase Shift Method of the Absolute Rate Constants of Reactions of O(³P) Atoms with Olefins at 25°C," *Int. J. Chem. Kinet.* 6, 741 (1974)
- Gaedtke, H., Glänzer, K., Hippeler, H., Luther, K., and Troe, J., "Addition Reactions of Oxygen Atoms at High Pressures," *Symp. Combust. 14* (Combustion Institute, Pittsburgh, 1973) 295
- Gardiner, W. C., Jr., "Observations of Induction Times in the Acetylene-Oxygen Reaction," *J. Chem. Phys.* 35, 2252 (1961)
- Garibyan, T. A., Grigoryan, R. R., Mantashyan, A. A., and Nalbandyan, A. B., "Chain Initiation Reactions," *Arm. Khim. Zh.* 25, 95 (1972)
- Garner, W. E., and Ham, A. J., "The Combustion of Methane," *Proc. Roy. Soc. (London) A* 170, 80 (1939)
- Gay, I. D., Glass, G. P., Kern, R. D., and Kistiakowsky, G. B., "Ethylene-Oxygen Reaction in Shock Waves," *J. Chem. Phys.* 47, 313 (1967)
- Gay, I. D., Glass, G. P., Kistiakowsky, G. B., and Niki, H., "Pyrolysis and Oxidation of Formaldehyde in Shock Waves," *J. Chem. Phys.* 43, 4017 (1965)
- Geisbrecht, R. A., and Daubert, T. E., "Chemical and Physical Processes of Hydrocarbon Combustion: Chemical Processes," *Ind. Eng. Chem., Process Des. Develop.* 14, 159 (1975)
- Germain, J.-E., and Sueur, R., "Craquage du Méthane dans un Réacteur Tubulaire. VI.-Effet Initiateur de l'Oxygène," *Bull. Soc. Chim. France* 1008 (1961)
- Glass, G. P., Kistiakowsky, G. B., Michael, J. V., and Niki, H., "The Oxidation Reactions of Acetylene and Methane," *Symp. Combust. 10* (Combustion Institute, Pittsburgh, 1965) 513
- Glass, G. P., Kistiakowsky, G. B., Michael, J. V., and Niki, H., "Mechanism of the Acetylene-Oxygen Reaction in Shock Waves," *J. Chem. Phys.* 42, 608 (1965)
- Gol'dberg, V. M., and Obukhova, L. K., "The Reaction Rate Constant for Oxidation of n-Decane," *Neftekhimiya* 3, 223 (1963); *Chem. Abstr.* 59:1128e (1963)
- Goldfinger, P., Huybrechts, G., Martens, G., Meyers, L., and Albregts, J., "Oxygen Effect in the Photochlorination of Ethane," *Trans. Faraday Soc.* 61, 1933 (1965)

- Gordon, R. J., and Lin, M. C., "Chemical HF Laser Emission from the $\text{CHF} + \text{O}_2$ Reaction," *Chem. Phys. Lett.* 22, 107 (1973)
- Gray, J. A., "The Mercury Photo-Sensitized Oxidation of Ethane and Methane," *J. Chem. Soc. (London)* 3150 (1952)
- Gray, P., Shaw, R., and Thynne, J. C. J., "The Rate Constants of Alkoxy Radical Reactions," *Progr. React. Kinet.* 4, 63 (1967)
- Greiner, N. R., "Hydroxyl-Radical Kinetics by Kinetic Spectroscopy. I. Reactions with H_2 , C_6 , and CH_4 at 300°K," *J. Chem. Phys.* 45, 2795 (1967)
- Greiner, N. R., "Hydroxyl-Radical Kinetics by Kinetic Spectroscopy. II. Reactions with C_2H_6 , C_3H_8 , and iso- C_4H_{10} at 300°K," *J. Chem. Phys.* 46, 3389 (1967)
- Greiner, N. R., "Hydroxyl Radical Kinetics by Kinetic Spectroscopy. IV. Some Deuterium Isotope Effects," *J. Chem. Phys.* 48, 1413 (1968)
- Greiner, N. R., "Hydroxyl Radical Kinetics by Kinetic Spectroscopy. VI. Reactions with Alkanes in the Range 300-500°K," *J. Chem. Phys.* 53, 1070 (1970)
- Greiner, N. R., "Hydroxyl Radical Kinetics by Kinetic Spectroscopy. VII. The Reaction with Ethylene in the Range 300-500°K," *J. Chem. Phys.* 53, 1284 (1970)
- Greiner, N. R., "Comparison of the Kinetics of Alkane H-Atom Abstraction by Methyl and Hydroxyl Radicals," *J. Chem. Phys.* 53, 1285 (1970)
- Griffiths, J. F., "Negative Temperature-Coefficient of Reaction Rate during Hydrocarbon Oxidation," *J. Chem. Soc. D. Chem. Commun.* 483 (1969)
- Haller, I., and Pimentel, G. C., "Reaction of Oxygen Atoms with Acetylene to Form Ketene," *J. Am. Chem. Soc.* 84, 2855 (1962)
- Hampson, R. F., Jr., and Garvin, D., "Chemical Kinetic and Photochemical Data for Modelling Atmospheric Chemistry," *NBS Techn. Note* 866 (1975)
- Hanst, P. L., and Calvert, J. G., "The Oxidation of Methyl Radicals at Room Temperature," *J. Phys. Chem.* 63, 71 (1959)
- Hanst, P. L., and Calvert, J. G., "The Thermal Decomposition of Dimethyl Peroxide: The Oxygen-Oxygen Bond Strength of Dialkyl Peroxides," *J. Phys. Chem.* 63, 104 (1959)
- Hanst, P. L., Stephens, E. R., Scott, W. E., and Doerr, R. C., "Atmospheric Ozone-Olefin Reactions," *Am. Chem. Soc., Div. Petroleum Chem., Symp. Preprints, (136th Meeting)*, A-7 (1959)
- Harding, A. J., and Norrish, R. G. W., "Role of Formaldehyde in the Oxidation of Ethylene," *Nature* 163, 797 (1949)
- Harding, A. J., and Norrish, R. G. W., "The Role of Formaldehyde in the Oxidation of Ethylene," *Proc. Roy. Soc. (London) A* 212, 291 (1952)
- Havel, J. J., "Atomic Oxygen. I. The Reactions of Allenes with Oxygen (${}^3\text{P}$) Atoms," *J. Am. Chem. Soc.* 96, 530 (1974)
- Havel, J. J., and Chan, K. H., "Atomic Oxygen. III. Reaction of 1,3-Butadiene with Oxygen (${}^3\text{P}$) Atoms," *J. Org. Chem.* 39, 2439 (1974)
- Hay, J. M., "The Competitive Oxidation of Formaldehyde and Glyoxal," *J. Chem. Soc. (London)* 7388 (1965)
- Hay, J. M., and Hessam, K., "The Oxidation of Gaseous Formaldehyde," *Combust. Flame* 16, 237 (1971)
- Hay, J., Knox, J. H., and Turner, J. M. C., "Homogeneous and Heterogeneous Processes in the Gas-Phase Oxidation of Isobutane and Isobutene," *Symp. Combust. 10* (Combustion Institute, Pittsburgh, 1965) 331
- Hecht, T. A., and Seinfeld, J. H., "Development and Validation of a Generalized Mechanism for Photochemical Smog," *Environ. Sci. Techn.* 6, 47 (1972)

- Hecht, T. A., Seinfeld, J. H., and Dodge, M. C., "Further Development of Generalized Kinetic Mechanism for Photochemical Smog," *Environ. Sci. Techn.* 8, 327 (1974)
- Heicklen, J., "Gas-Phase Reactions of Alkylperoxy and Alkoxy Radicals," *Adv. Chem. Ser.* 76, 23 (1968)
- Heicklen, J., and Johnston, H. S., "Photochemical Oxidations. I. Ethyl Iodide," *J. Am. Chem. Soc.* 84, 4394 (1962)
- Heicklen, J., and Johnston, H. S., "Photochemical Oxidations. II. Methyl Iodide," *J. Am. Chem. Soc.* 84, 4030 (1962)
- Hermant, G., Déchaux, J.-C., and Lucquin, M., "Influence du Peroxyde d'Azote sur la Réaction d'Oxydation Lente de Basse Température du Butane," *Bull. Soc. Chim. France* 473 (1970)
- Herron, J. T., "An Evaluation of Rate Data for the Reactions of Atomic Oxygen (O^3P) with Methane and Ethane," *Int. J. Chem. Kinet.* 1, 527 (1969)
- Herron, J. T., and Huie, R. E., "Rates of Reaction of Atomic Oxygen. II. Some C_2 to C_8 Alkanes," *J. Phys. Chem.* 73, 3327 (1969)
- Herron, J. T., and Huie, R. E., "Rate Constants for the Reactions of Atomic Oxygen (O^3P) with Organic Compounds in the Gas Phase," *J. Phys. Chem. Ref. Data* 2, 467 (1973)
- Herron, J. T., and Huie, R. E., "Rate Constants for the Reactions of Ozone with Ethene and Propene, from 235.0 to 362.0 K," *J. Phys. Chem.* 78, 2085 (1974)
- Herron, J. T., and Penzhorn, R. D., "Mass Spectrometric Study of the Reactions of Atomic Oxygen with Ethylene and Formaldehyde," *J. Phys. Chem.* 73, 191 (1969)
- Hidaka, Y., Kataoka, T., and Suga, M., "Shock-Tube Investigation of Ignition in Ethylene-Oxygen-Argon Mixtures," *Bull. Chem. Soc. Japan* 47, 2166 (1974)
- Higgin, R. M. R., and Williams, A., "A Shock-Tube Investigation of the Ignition of Lean Methane and n-Butane Mixtures with Oxygen," *Symp. Combust.* 12 (Combustion Institute, Pittsburgh, 1969) 579
- Hinshelwood, C. N., "The Influence of Substituents on the Oxidation of Hydrocarbons," *Discuss. Faraday Soc.* 10, 266 (1951)
- Hoare, D. E., "The Combustion of Methane," AGARDograph (Adv. Group Aero. Res. Develop.) 86, 125 (1965)
- Hoare, D. E., and Patel, M., "Role of OH and HO_2 Radicals in the Slow Combustion of Mixtures of Methane, Ethane and Ethylene," *Trans. Faraday Soc.* 65, 1325 (1969)
- Hoare, D. E., and Walsh, A. D., "The Oxidation of Methane. Part I. Kinetic Laws at ca 500°C," *Symp. Combust.* 5, (Reinhold Publishing Corp., New York, 1955) 467
- Hoare, D. E., and Walsh, A. D., "The Oxidation of Methane. Part II. Behavior at Temperatures from 500 to 750°C," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 474
- Hoare, D. E., and Walsh, A. D., "The Reaction of Methyl Radicals with Oxygen and Comparison with Other Third-Order Reactions," *Trans. Faraday Soc.* 53, 1102 (1957)
- Hoare, D. E., and Wellington, C. A., "Reactions of t-Butoxy , Methoxy and Acetonyl Radicals," *Symp. Combust.* 8 (Williams and Wilkins Co., Baltimore, MD, 1962) 472
- Hoare, D. E., and Whytock, D. A., "Photooxidation of Acetone Vapor," *Can. J. Chem.* 45, 865 (1967)
- Hoare, D. E., and Whytock, D. A., "Photooxidation of Methyl Ethyl Ketone Vapor," *Can. J. Chem.* 45, 2741 (1967)

- Hoare, D. E., and Whytock, D. A., "Photooxidation of Diethyl Ketone Vapor," *Can. J. Chem.* 45, 2841 (1967)
- Hoey, G. R., and Kutschke, K. G., "The Photo-Oxidation of Azomethane," *Can. J. Chem.* 33, 496 (1955)
- Homer, J. B., and Kistiakowsky, G. B., "Oxidation and Pyrolysis of Ethylene in Shock Waves," *J. Chem. Phys.* 47, 5290 (1967)
- Horne, D. G., and Norrish, R. G. W., "Rate of H-Abstraction by OH from Hydrocarbons," *Nature* 215, 1373 (1967)
- Horner, E. C. A., Style, D. W. G., and Summers, D., "The Oxidation of Formaldehyde. Part 2.-General Discussion and Mechanism of the Reaction," *Trans. Faraday Soc.* 50, 1201 (1954)
- Hoyermann, K., Wagner, H. Gg., and Wolfrum, J., "Untersuchung der Reaktionen von C_2H_2 mit H- und O-Atomen mittels Elektronen-Spin-Resonanz," *Z. Phys. Chem. [N.F.]* 55, 72 ([967])
- Hoyermann, K., Wagner, H. Gg., and Wolfrum, J., "Zur Reaktion O + C_2H_2 \rightarrow CO + CH_2 ," *Z. Phys. Chem. [N.F.]* 63, 193 (1969)
- Hughes, R., and Prodhan, A. S., "The Combustion of the n-Pentenes in the Cool Flame Region," *Combust. Flame* 21, 297 (1973)
- Hughes, A. N., Scheer, M. D., and Klein, R., "The Reaction between O(3P) and Condensed Olefins below 100°K," *J. Phys. Chem.* 70, 798 (1966)
- Hughes, R., and Simmons, R. F., "The Low-Temperature Combustion of n-Pentane," *Symp. Combust.* 12 (Combustion Institute, Pittsburgh, 1969) 449
- Hughes, R., and Simmons, R. F., "Cool Flame Phenomena in the Oxidation of n-Pentane," *Combust. Flame* 14, 103 (1970)
- Huie, R. E., and Herron, J. T., "Temperature Dependence of the Rate Constants for Reactions of Ozone with Some Olefins," (Proc. Symp. on Chemical Kinetics Data for the Upper and Lower Atmosphere, 1974) *Int. J. Chem. Kinet.* 7, Sup. 1, 165 (1975)
- Huie, R. R., and Herron, J. T., "Reactions of Atomic Oxygen (O(3P)) with Organic Compounds," *Prog. React. Kinet.* 8, 1 (1975)
- Huie, R. E., Herron, J. T., and Davis, D. D., "Absolute Rate Constants for the Reaction of Atomic Oxygen with 1-Butene over the Temperature Range of 259-493°K," *J. Phys. Chem.* 75, 3092 (1971)
- Huie, R. E., Herron, J. T., and Davis, D. D., "Absolute Rate Constants for the Addition and Abstraction Reactions of Atomic Oxygen with 1-Butene over the Temperature Range 190-491 K," *J. Phys. Chem.* 76, 3311 (1972)
- Ingold, K. U., and Bryce, W. A., "Mass Spectrometric Investigation of the Hydrogen-Oxygen and Methyl-Oxygen Reactions," *J. Chem. Phys.* 24, 360 (1955)
- Irvine, G. W., and Knox, J. H., "The Role of Surface in Competitive Oxidation of Alkanes Between 300 and 480°," in "Mechanisms of Hydrocarbon Reactions. A Symposium," Marta, F., and Kallo, D., editors (American Elsevier Publishing Co., Inc., New York, 1975) 733
- Jachimowski, C. J., "Kinetics of Oxygen Atom Formation During the Oxidation of Methane Behind Shock Waves," *Combust. Flame* 23, 233 (1974)
- Jacobs, N. F., "Shock Tube Induction Period Study of CH_4 and NH_3 Oxidation," *Diss. Abstr. Int. B* 30, 3121 (1970)
- Jacod, C., Locqueneux-Lefebvre, M., James, H., and Laffitte, P., "Sur l'Aspect Corrélatif de la Vitesse et de l'Emission Lumineuse des Réactions d'Oxydation en Phase Gazeuse," *C. R. Hebd. Séances Acad. Sci. (Paris) C* 269, 1601 (1969)
- Jaffe, S., and Grant, R. C. S., "Oxidation of Propylene by Photolysis in the Presence of NO_2 ," *J. Chem. Phys.* 50, 3477 (1969)

- Jaffe, S., and Keith, J., "Oxidation of Ethylene by the Photolysis of NO_2 at 25°C," *J. Chem. Phys.* 48, 2805 (1968)
- James, H., "L'Inhibition en Phase Gazeuse de la Combustion de l'Oxyde de Carbone. I. Le Phénomène des Flammes à Longs Retards et son Application à la Détermination de Constantes Cinétiques de Réactions de Combustion," *Rev. Inst. Fr. Pet. Ann. Combust. Liq.* 13, 338 (1958)
- James, G. S., and Glass, G. P., "Some Aspects of Acetylene Oxidation," *J. Chem. Phys.* 50, 2268 (1969)
- Japar, S. M., Wu, C. H., and Niki, H., "Rate Constants for the Reaction of Ozone with Olefins in the Gas Phase," *J. Phys. Chem.* 78, 2318 (1974)
- Jarvie, J. M. S., and Cvetanović, R. J., "Reactions of Oxygen Activated by Electrical Discharge with Butene-1," *Can. J. Chem.* 37, 529 (1959)
- Johnson, J. E., Crellin, J. W., and Carhart, H. W., "Ignition Behavior of the Hexanes," *Ind. Eng. Chem.* 46, 1512 (1954)
- Jolley, J. E., "The Photooxidation of Diethyl Ketone," *J. Am. Chem. Soc.* 79, 1537 (1957)
- Jones, I. T. N., and Bayes, K. D., "Detection of Steady-State Free-Radical Concentrations by Photoionization," *J. Am. Chem. Soc.* 94, 6869 (1972)
- Jones, I. T. N., and Bayes, K. D., "Free-Radical Formation in the $\text{O} + \text{C}_2\text{H}_2$ Reaction," *Symp. Combust.* 14, (Combustion Institute, Pittsburgh, 1973) 277
- Jones, I. T. N., and Bayes, K. D., "The Kinetics and Mechanism of the Reaction of Atomic Oxygen with Acetylene," *Proc. Roy. Soc. (London)* A 335, 547 (1973)
- Kanofsky, J. R., and Gutman, D., "Direct Observation of the Products Produced by the O -Atom Reactions with Ethylene and Propylene Studied in High-Intensity Molecular Beams," *Chem. Phys. Lett.* 15, 236 (1972)
- Kanofsky, J. R., Lucas, D., and Gutman, D., "Direct Identification of Free-Radical Products of O -Atom Reactions with Olefins, Using High-Intensity Molecular Beams," *Symp. Combust.* 14 (Combustion Institute, Pittsburgh 1973) 285
- Kanofsky, J. R., Lucas, D., Pruss, F., and Gutman, D., "Direct Identification of the Reactive Channels in the Reactions of Oxygen Atoms and Hydroxyl Radicals with Acetylene and Methylacetylene," *Am. Chem. Soc., 166th Natl. Meeting, Abstr. Papers* 166, PHYS-140 (1973)
- Karbassian, A., Cachet, C., and Ben-Aim, R. I., "Étude des Produits de Réaction dans l'Oxydation de Basse Température du Pentane Normal," *Bull. Soc. Chim. France* 3249 (1973)
- Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B., "The Initial Stage of the Oxidation of Methane Catalyzed with Nitric Oxide," *Zh. Fiz. Khim.* 30, 798 (1956)
- Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B., "Degenerated Chain Branching. II. The Role of Formaldehyde in Methane Oxidation," *Zh. Fiz. Khim.* 31, 851 (1957)
- Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B., "The Kinetics and Mechanism of the Oxidation of Methane. I. Fundamental Macrokinetic Laws," *Russ. J. Phys. Chem.* 34, 261 (1960); tr. of *Zh. Fiz. Khim.* 34, 550 (1960)
- Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B., "Kinetics and Mechanism of Methane Oxidation. II. Kinetics of the Accumulation of Intermediate Products," *Russ. J. Phys. Chem.* 34, 470 (1960); tr. of *Zh. Fiz. Khim.* 34, 990 (1960)
- Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B., "Kinetics and Mechanism of Methane Oxidation. IV. Effect of Hydrogen Peroxide and

- Water on the Reaction Kinetics," Russ. J. Phys. Chem. 35, 512 (1961); tr. of Zh. Fiz. Khim. 35, 1046 (1961)
- Karmilova, L. V., Enikolopyan, N. S., and Nalbandyan, A. B., "Kinetics and Mechanism of Methane Oxidation. VI. Mechanism of Formation of Carbon Dioxide and Determination of the Steady-State Concentration of Hydroxyl," Russ. J. Phys. Chem. 35, 717 (1961); tr. of Zh. Fiz. Khim. 35, 1458 (1961)
- Karmilova, L. V., Enikolopyan, N. S., Nalbandyan, A. B., and Il'in, V. T., "Kinetics and Mechanism of Methane Oxidation. V. The Constancy of the Rate of Oxidation of Methane," Russ. J. Phys. Chem. 35, 706 (1961); tr. of Zh. Fiz. Khim. 35, 1435 (1961)
- Karmilova, L. V., Enikolopyan, N. S., Nalbandyan, A. B., and Semenov, N. N., "Kinetics and Mechanism of Methane Oxidation. III. Detailed Mechanism of the Reaction," Russ. J. Phys. Chem. 34, 562 (1960); tr. of Zh. Fiz. Khim. 34, 1176 (1960)
- Karpov, V. P., "Behavior of a Flame Front and Its Interaction with a Shock Wave," Gorenje Vzryv, 382 (1972); Chem. Abstr. 79:129258a (1973)
- Karpov, V. P., "Increase in the Combustion Rate Under Shock-Wave Action on the Flame," Arch. Procesow Spalania 2, 157 (1971)
- Kashirskii, V. G., Lunkin, V. N., and Udalov, V. P., "Calculated Characteristics of the Incomplete Combustion of Methane," Izv. Vyssh. Ucheb. Zaved. Energ. 17, 71 (1974)
- Kato, A., and Cvetanović, R. J., "Reaction of Oxygen Atoms with Ethanol," Can. J. Chem. 45, 1845 (1967)
- Kato, A., and Cvetanović, R. J., "Reactions of Oxygen Atoms with 2-Propanol and Methanol," Can. J. Chem. 46, 235 (1968)
- Kende, I., and Gal, D., "Investigation of the Inhibiting Effect of Styrene on the Gas-Phase Oxidation of Hexane with Labelled Molecules," Combust. Flame 6, 109 (1962)
- Kirik, T. M., Stozhkova, G. A., Bondarenko, A. N., and Farberov, M. I., "Epoxidation of Propylene with Tert-Amyl Hydroperoxide," Sb. Nauch. Tr., Yaroslav. Tekhnol. Inst. 22, 74 (1972); Chem. Abstr. 80:36642b (1974)
- Kirk, A. D., and Knox, J. H., "The Pyrolysis of Alkyl Hydroperoxides in the Gas Phase," Trans. Faraday Soc. 56, 1296 (1960)
- Kistiakowsky, G. B., and Richards, L. W., "Emission of Vacuum Ultraviolet Radiation from the Acetylene-Oxygen and the Methane-Oxygen Reactions in Shock Waves," J. Chem. Phys. 36, 1707 (1962)
- Kleimenov, N. A., Antonova, I. N., Markevich, A. M., and Nalbandyan, A. B., "Methane Oxidation with the Oxygen Atoms Formed during the Thermal Decomposition of Ozone," Zh. Fiz. Khim. 30, 794 (1956)
- Kleimenov, N. A., and Nalbandyan, A. B., "On the Interaction of Ozone with Methyl Hydroperoxide," Dokl. Phys. Chem. 9 (1958); tr. of Dokl. Akad. Nauk SSSR 118, 125 (1958)
- Kleimenov, N. A., and Nalbandyan, A. B., "The Part Played by Ozone in the Initiation of the Oxidation of Saturated, Gaseous Hydrocarbons," Dokl. Phys. Chem. 635 (1958); tr. of Dokl. Akad. Nauk SSSR 122, 103 (1958)
- Kleimenov, N. A., and Nalbandyan, A. B., "An Investigation of the Low-Temperature Oxidation of Methane Initiated by Oxygen Atoms Formed in the Thermal Decomposition of Ozone," Dokl. Phys. Chem. 667 (1958); tr. of Dokl. Akad. Nauk SSSR 122, 420 (1958)
- Kleimenov, N. A., and Nalbandyan, A. B., "Paths for the Formation of Methyl Hydroperoxide and Formaldehyde in Low Temperature Oxidation of Methane," Dokl. Phys. Chem. 5 (1959); tr. of Dokl. Akad. Nauk SSSR 124, 119 (1959)

- Kleimenov, N. A., and Nalbandyan, A. B., "Oxidation of Methane at Low Temperatures. Use of Ozone as an Initiator," *Rev. Chim. (Bucharest)* 11, 391 (1960); *Chem. Abstr.* 57:16961i (1962)
- Klein, R., and Scheer, M. D., "Mechanism of O(³P) Addition to Condensed Films. II. Propene, 1-Butene, and Their Mixtures," *J. Phys. Chem.* 72, 616 (1968)
- Knox, J. H., "Rate Constants of Elementary Reactions in Hydrocarbon Oxidation-Low Temperature Oxidation of Lower Hydrocarbons," *Symp. Combust.* 7 (Butterworths, London, 1959) 122
- Knox, J. H., "Some Features of the Oxidation of Propane and Ethane at 318°C," *Trans. Faraday Soc.* 55, 1362 (1959)
- Knox, J. H., "The Gaseous Products from the Oxidation of Propane at 318°C," *Trans. Faraday Soc.* 56, 1225 (1960)
- Knox, J. H., "Rate Constants in the Gas-Phase Oxidation of Alkanes and Alkyl Radicals," *Adv. Chem. Ser.* 76, 1 (1968)
- Knox, J. H., "Gas-Phase Oxidation," *Ann. Rept. Prog. Chem. (London)* 59, 18 (1962)
- Knox, J. H., "The Mechanism of Oxidation of Alkanes in the Gas Phase," *Chem. Commun.* 108 (1965)
- Knox, J. H., "A New Mechanism for the Low Temperature Oxidation of Hydrocarbons in the Gas Phase," *Combust. Flame* 9, 297 (1965)
- Knox, J. H., "The Interpretation of Cool Flame and Low-Temperature Combustion Phenomena," in "Photochemistry and Reaction Kinetics," Ashmore, P. G., Dainton, F. S., and Sugden, T. M., editors (Cambridge Univ. Press, London, 1967) 250
- Knox, J. H., and Kinnear, C. G., "The Mechanism of Combustion of Pentane in the Gas Phase between 250° and 400°C," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 217
- Knox, J. H., and Norrish, R. G. W., "Low-Temperature Oxidation and Cool Flames of Propane," *Proc. Roy. Soc. (London)* A 221, 151 (1954)
- Knox, J. H., and Norrish, R. G. W., "Cool Flame Phenomena in the Oxidation of Ethane," *Trans. Faraday Soc.* 50, 928 (1954)
- Knox, J. H., Smith, R. F., and Trotman-Dickenson, A. F., "Competitive Oxidations. Part 1.-Ethane + Propane Mixtures," *Trans. Faraday Soc.* 54, 1509 (1958)
- Knox, J. H., and Turner, J. M. C., "Radical Selectivity: The Initial Stages of Alkane Oxidations," *J. Chem. Soc. (London)* 3491 (1965)
- Knox, J. H., and Wells, C. H. J., "Slow Oxidation of Ethane and Ethylene in the Gas Phase. Part 1.-General Features at 362°C," *Trans. Faraday Soc.* 59, 2786 (1963)
- Knox, J. H., and Wells, C. H. J., "Slow Oxidation of Ethane and Ethylene in the Gas Phase. Part 2.-Analytical Features," *Trans. Faraday Soc.* 59, 2801 (1963)
- Korablev, L. I., Kuznets, G. M., Bulygin, M. G., and Blyumberg, E. A., "Effect of Reaction Products on the Cooxidation of Propylene with Butane and Methyl Ethyl Ketone," *Neftekhimiya* 14, 742 (1974)
- Kordysh, Ye. I., Glikin, M. A., Zaitsev, V. G., and Kovalivnich, A. M., "Ignition of a Mixture of Saturated Hydrocarbons with Oxygen under Dynamic Conditions," *Sov. Chem. Ind.* 6, 354 (1974); tr. of *Khim. Prom.* 417 (1974)
- Kovalivnich, A. M., and Glikin, M. A., "Conditions for the Self-Ignition of Mixtures of Gaseous Saturated Hydrocarbons Containing Oxygen," *Tr. Nauch.-Issled. Proekt. Inst. Azotn. Prom. Prod. Org. Sin.* 97 (1972); *Ref. Zh. Khim., Abstr. No. 11B1055 (1973); Chem. Abstr.* 80:147515g (1974)

- Kovalivnich, A. M., Glikin, M. A., and Nuzhda, L. I., "Self-Ignition on Mixing of Hot Methane and Oxygen in Acetylene Production and Methane Conversion," *Fiz. Goreniya Vzryva* 10, 446 (1974); *Chem. Abstr.* 82:33099k (1975)
- Kovalskii, A., and Sadovnikov, P., "Mechanismus der Oberen Grenze," *Phys. Z. Sowjetunion* 1, 567 (1932); See also: *Zh. Fiz. Khim.* 3, 272 (1932)
- Kovalskii, A., Sadovnikov, P., and Chirkov, N., "Kinetik der Oxydation der Gemische von $\text{CH}_4 + \text{O}_2$ und $\text{C}_2\text{H}_6 + \text{O}_2$," *Phys. Z. Sowjetunion* 1, 451 (1932)
- Kozlov, G. I., "Over-All Kinetic Equation for High-Temperature Oxidation of Methane," *Inzhener.-Fiz. Zh.*, Akad. Nauk Belorus. SSR 1, 41 (1958)
- Kozlov, G. I., "On High-Temperature Oxidation of Methane," *Symp. Combust.* 7 (Butterworths, London, 1959) 142
- Kozorezov, Yu. I., Kamakin, N. M., Kostyleva, Z. A., and Prokhorov, G. V., "Oxidation of Mixtures of n-Butane and Isobutane," *J. Appl. Chem. USSR* 38, 1171 (1965); tr. of *Zh. Prikl. Khim.* 38, 1183 (1965)
- Ksandopulo, G. I., Kolesnikov, B. Ya., Odnorog, D. S., and Dubinin, V. V., "Oxidation of Hydrocarbons in the Preignition Zone. I. Four Temperature Oxidation of Propane Near the Flame," *Sb. Rab. Khim. Koz. Univ.*, 36 (1973); Ref. *Zh. Khim., Abstr.* No. 9B1017 (1973); *Chem. Abstr.* 81:155344m (1974)
- Kucher, R. V., Nechitailo, L. G., Chernyak, B. L., and Poklonskii, A. N., "Effect of Reactor Material on Kinetics of the Liquid-Phase Oxidation of n-Hexenes," *Dopov. Akad. Nauk Ukr. RSR, Ser. B* 36, 1019 (1974); *Chem. Abstr.* 82:57189r (1975)
- Kuchta, J. M., and Martindill, G. H., "Thermal Oxidation of n-Octane Vapour-Oxygen-Nitrogen Mixtures at Reduced Pressures," *Combust. Flame* 11, 212 (1967)
- Kuhn, L. P., and Wellman, C. R., "Cool Flame Oxidation Studies of Acyclic and Cyclic Hydrocarbons," *West. States Sect., Combust. Inst.*, Paper WSCI 72-41 (1972); *Chem. Abstr.* 78:113542g (1973)
- Kurylo, M. J., "Absolute Rate Constants for the Addition of $\text{O}(\text{^3P})$ Atoms to Propylene," *Chem. Phys. Lett.* 14, 117 (1972)
- Kurylo, M. J., and Huie, R. E., "Flash Photolysis Resonance Fluorescence Study of the Addition of $\text{O}(\text{^3P})$ Atoms to C_2H_4 and C_2D_4 at 298°K," *J. Chem. Phys.* 58, 1258 (1973)
- Laufer, A. H., and Bass, A. M., "Rate Constants for Reactions of Methylene with Carbon Monoxide, Oxygen, Nitric Oxide, and Acetylene," *J. Phys. Chem.* 78, 1344 (1974)
- Lavrov, N. V., "Methane Combustion Mechanism at High Temperatures," *Ispol'z. Gaza Nar. Khoz.* 27 (1967); *Chem. Abstr.* 71:123204t (1969)
- Lavrov, N. V., and Evlanov, S. F., "Mechanism and Kinetics of Methane Combustion at Low and High Temperatures," *Izv. Akad. Nauk Uzb. SSR, Ser. Tekh. Nauk* 13, 50 (1969); *Chem. Abstr.* 73:27277q (1970)
- Lavrov, N. V., and Grebenschchikova, G. V., "Analysis of the Multi-Stage Process of Methane Combustion under Isothermal Conditions," *Vop. Teor. Goreniya* 126 (1970); *Chem. Abstr.* 74:128597v (1971)
- Lavrov, N. V., and Grebenschchikova, G. V., "Theoretical Calculations of the Combustion of Natural Gas at Various Oxygen-Methane Ratios," *Tr. Ispol'z. Gaza Nar. Khoz. Podzem. Khraneniya Nefti, Nefteprod. Szhizh. Gazov* 4 (1973); *Chem. Abstr.* 81:138299h (1974)
- Lavrov, N. V., and Kiyani, A. F., "Calculation of the Rate Constants of a Stage Process for Methane Oxidation," *Tr. Inst. Proizvod. Gpyt. Vses.*

- Nauch.-Issled. Inst. Ispol'z. Gaza Nar. Khoz., Podzemn. Khraneniya
 Nefti. Nefteprod. Szhizhennykh Gazov 21 (1969); Chem. Abstr. 76:88137c (1972)
 Lavrov, N. V., and Pervykh, G. V., "Effect of Added Formaldehyde on the
 Normal Rate of Combustion of Lean Methane-Air Mixtures," Tr. Vses.
 Nauchno-Issled. Inst. Ispol'z. Gaza Nar. Khoz., Podzemn. Khraneniya
 Nefti, Nefteprod. Szhizh. Gazov 3 (1973); Chem. Abstr. 81:155525w (1974)
 Lee, W. E., and Malmberg, E. W., "A Study of Combustion and Other Free Radical
 Processes in the Chemical Shock Tube," Am. Chem. Soc. Natl. Meeting,
 Abstr. Papers 139, 2J (1961)
 Lefebvre, M., "Les Dernières Étapes de l'Oxydation Lente du Propane," Rev.
 Inst. Fr. Pet. Ann. Combust. Liq. 19, 1 (1964)
 Lefebvre, M., and Lucquin, M., "Les Dernières Étapes de l'Oxydation Lente
 du Propane. II.-Étude de la Réaction Lente au Maximum de Vitesse Pour
 les Concentrations Élevées en Oxygène," J. Chim. Phys. Phys.-Chim. Biol.
 62, 784 (1965)
 See also: Locqueneux-Lefebvre, M.
 LeFevre, H. F., Meagher, J. F., and Timmons, R. B., "The Kinetics of the
 Reactions of O(³P) Atoms with Dimethyl Ether and Methanol," Int. J.
 Chem. Kinet. 4, 103 (1972)
 Levy, A., "The Fast and Slow Reactions of Hydrogen-Oxygen-Propane Mixtures,"
 Symp. Combust. 5 (Reinhold Publishing Corp., New York, 1955) 495
 Levy, A., Droege, J. W., Tighe, J. J., and Foster, J. F., "The Inhibition
 of Lean Methane Flames," Symp. Combust. 8 (Williams and Wilkins Co.,
 Baltimore, MD, 1962) 524
 Lewis, B., and von Elbe, G., "The Reaction between Hydrocarbons and Oxygen,"
 in "Combustion, Flames and Explosions of Gases," 2d ed. Lewis, B.,
 and von Elbe, G., (Academic Press Inc., New York, 1961) 90
 Lifshitz, A., Scheller, K., Burcat, A., and Skinner, G. B., "Shock-Tube
 Investigation of Ignition in Methane-Oxygen-Argon Mixtures," Combust.
 Flame 16, 311 (1971)
 Lin, M. C., "Chemical Lasers Produced from O(³P) Atom Reactions. III.
 5-μm CO Laser Emission from the O + CH Reaction," Int. J. Chem. Kinet.
 6, 1 (1974)
 Lin, C.-L., and DeMore, W. B., "Reactions of O(¹D) with Methane and Ethane,"
 J. Phys. Chem. 77, 863 (1973)
 Lischke, G., Ohlmann, G., and Schirmer, W., "Studium der Kinetik und des
 Mechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase.
 VI. Mitteilung: Formalkinetische Untersuchung der langsamem Oxydation
 von n-Heptan im Tieftemperaturgebiet," Z. Physik. Chem. (Leipzig)
 230, 73 (1965)
 Lissi, E. A., Massiff, G., and Villa, A., "Addition of Methoxy Radicals to
 Olefins," Int. J. Chem. Kinet. 7, 625 (1975)
 Lloyd, A. C., "Evaluated and Estimated Kinetic Data for Gas Phase Reactions
 of the Hydroperoxyl Radical," Int. J. Chem. Kinet. 6, 169 (1974)
 Locqueneux-Lefebvre, M., "Étude de la Période d'Induction de la Réaction
 Lente de Basse Température du Propane," Bull. Soc. Chim. France 1417 (1966)
 Locqueneux-Lefebvre, M., and James, H., "Cinétique et Mécanisme de
 l'Oxydation de l'Éthane. I.-Réaction Initiée Thermiquement: Étude
 Expérimentale," Bull. Soc. Chim. France 1862 (1969)
 Luckett, G. A., and Pollard, R. T., "The Gaseous Oxidation of Isobutane
 (Part 1)," Combust. Flame 21, 265 (1973)
 Lukovnikov, A. F., and Neiman, M. B., "Study of the Oxidation of Propylene
 by Means of Radioactive Carbon," Dokl. Akad. Nauk SSSR 91, 581 (1953)

- Mack, G. P. R., and Thrush, B. A., "Reaction of Oxygen Atoms with Carbonyl Compounds. Part 1.-Formaldehyde," *J. Chem. Soc. Faraday Trans. I* 69, 208 (1973)
- Mack, G. P. R., and Thrush, B. A., "Reaction of Oxygen Atoms with Carbonyl Compounds. Part 2.-Acetaldehyde," *J. Chem. Soc. Faraday Trans. I* 70, 178 (1974)
- Mack, G. P. R., and Thrush, B. A., "Reaction of Oxygen Atoms with Carbonyl Compounds. Part 3.-Ketene," *J. Chem. Soc. Faraday Trans. I* 70, 187 (1974)
- Mahajan, S., "The Partial Oxidation of Propane in Tubular Reactors," *Diss. Abstr. Int. B* 34, 200 (1973)
- Maizus, Z. K., Skibida, I. P., and Emanuel, N. M., "Characteristics of n-Decane Oxidation Kinetics in Open Systems," *Kinet. Catal.* 2, 488 (1961); tr. of *Kinet. Katal.* 2, 538 (1961)
- Makarov, M. G., Manakov, M. N., Lebedev, N. N., and Shkundina, B. I., "The Order of Formation of the Oxidation Products of n-Decane in a Flow System," *Russ. J. Phys. Chem.* 44, 1431 (1970); tr. of *Zh. Fiz. Khim.* 44, 2525 (1970)
- Malherbe, F. E., and Walsh, A. D., "Experiments with Cool Flames. I.- Induction Periods," *Trans. Faraday Soc.* 46, 824 (1950)
- Malherbe, F. E., and Walsh, A. D., "Experiments with Cool Flames. II.- Pressure-Temperature Limits," *Trans. Faraday Soc.* 46, 835 (1950)
- Mantashyan, A. A., Beibutyan, M. A., Saakyan, A. S., and Nalbandyan, A. B., "Study of the Photochemical Methane and Ethane Oxidation by the Radical Trapping Method," *Dokl. Phys. Chem.* 17 (1972); tr. of *Dokl. Akad. Nauk SSSR* 202, 120 (1972)
- Mantashyan, A. A., Grigoryan, G. L., Saakyan, A. S., and Nalbandyan, A. B., "The Negative Temperature Coefficient of the Rate of the Reaction of Oxidation of Propane," *Dokl. Phys. Chem.* 532 (1972); tr. of *Dokl. Akad. Nauk SSSR* 204, 1392 (1972)
- Mantashyan, A. A., Moshkina, R. I., and Nalbandyan, A. B., "The Behavior of Methyl Peroxide Radical in the Oxidation of Methane at a Low Temperature," *Izv. Akad. Nauk Armyan. SSR, Khim. Nauki* 14, 185 (1961)
- Mantashyan, A. A., and Nalbandyan, A. B., "Photochemical Oxidation of Ethane Sensitized with Mercury Vapor. I. Reaction at Room Temperature," *Izv. Akad. Nauk Arm. SSR, Khim. Nauki* 14, 517 (1961)
- Mantashyan, A. A., and Nalbandyan, A. B., "Photochemical Oxidation of Ethane Sensitized with Mercury Vapor. II. Reaction at High Temperature," *Izv. Akad. Nauk Arm. SSR, Khim. Nauki* 14, 527 (1961)
- Mantashyan, A. A., and Nalbandyan, A. B., "Determination of Quantum Yield, Length of Chain, and Its Temperature Dependence in the Photochemical Oxidation of Methane and Ethane," *Izv. Akad. Nauk Arm. SSR, Khim. Nauki* 15, 3 (1962)
- Mantashyan, A. A., and Nalbandyan, A. B., "New Applications of the Electron Spin Resonance Method in the Investigation of Gas-Phase Reactions," *Russ. J. Phys. Chem.* 46, 1731 (1972); tr. of *Zh. Fiz. Khim.* 46, 3030 (1972)
- Marcotte, F. B., and Noyes, W. A., Jr., "II Hydrocarbon Reactions. B. Oxidation Reactions. The Reactions of Radicals from Acetone with Oxygen," *Discuss. Faraday Soc.* 10, 236 (1951)
- Marcotte, F. B., and Noyes, W. A., Jr., "Photochemical Studies. XLV. The Reactions of Methyl and Acetyl Radicals with Oxygen," *J. Am. Chem. Soc.* 74, 783 (1952)
- Mari, R., "L'Oxydation Lente du Methane vers 450-500°C dans des Récipients en Pyrex ou en Silice. II. Etude Expérimentale de l'Influence

- Accélérateur du Formaldéhyde," *J. Chim. Phys. Phys.-Chim. Biol.* 59, 589 (1962)
- Mari, R., Letort, M., Dzierzynski, M., and Niclause, M., "L'oxydation Lente du Méthane vers 450-500°C dans des Récipients en Pyrex ou en Silice. III. Mise en Évidence et Étude d'un Nouveau Facteur Auto-Accélérateur," *J. Chim. Phys. Phys.-Chim. Biol.* 59, 596 (1962)
- Mari, R., Letort, M., and Niclause, M., "L'oxydation Lente du Méthane vers 450-500°C dans des Récipients en Pyrex ou en Silice. I. La Représentation Symbolique d'Enikolopyan," *J. Chim. Phys. Phys.-Chim. Biol.* 59, 324 (1962)
- Markevich, A. M., and Filippova, L. F., "Effect of Heterogeneous Factors on the Oxidation of Formaldehyde," *Russ. J. Phys. Chem.* 33, 358 (1959); tr. of *Zh. Fiz. Khim.* 33, 2214 (1959)
- Markevich, A. M., and Filippova, L. F., "The Formation of Hydrogen Peroxide in the Oxidation of Formaldehyde," *Zh. Fiz. Khim.* 31, 2649 (1957)
- Markevich, A. M., Moshkina, R. I., and Filippova, L. F., "Mechanism of the Formation of Carbon Dioxide in the Oxidation of Formaldehyde," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 480 (1958); tr. of *Izv. Akad. Nauk SSSR, Œtd. Khim. Nauk* 502 (1958)
- Markevich, A. M., and Pecherskaya, Yu. I., "The Role of Hydrogen Peroxide in the Oxidation of Formaldehyde," *Russ. J. Phys. Chem.* 35, 697 (1961); tr. of *Zh. Fiz. Khim.* 35, 1416 (1961)
- Marsh, G., and Heicklen J., "Some Reactions of Oxygen Atoms. II. Ethylene Oxide, Dimethyl Ether, $n\text{-C}_4\text{H}_{10}$, $n\text{-C}_7\text{H}_{16}$, and Isooctane," *J. Phys. Chem.* 71, 250 (1967)
- Martin, R., Niclause, M., and Dzierzynski, M., "Influence Complex de Traces d'Oxygène et Effets de Parois dans la Pyrolyse du Propane," *C. R. Hebd. Séances Acad. Sci. (Paris)* 254, 1786 (1962)
- Matsuda, S., Slagle, I. R., Fife, D. J., Marquart, J. R., and Gutman, D., "Shock-Tube Study of the Acetylene-Oxygen Reaction. IV. Kinetic Study of CH , C_2 , and Continuum Chemiluminescence During the Induction Period," *J. Chem. Phys.* 57, 5277 (1972)
- Mayer, S. W., and Schieler, L., "Activation Energies and Rate Constants Computed for Reactions of Oxygen with Hydrocarbons," *J. Phys. Chem.* 72, 2628 (1968)
- McDowell, C. A., and Farmer, J. B., "The Kinetics of the Thermal and Photochemical Oxidation of Acetaldehyde," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 453
- McDowell, C. A., and Thomas, J. H., "Oxidation of Aldehydes in the Gaseous Phase. Part III. The Inhibition of the Oxidation of Acetaldehyde by Nitrogen Peroxide (Dioxide)," *J. Chem. Soc. (London)* 1462 (1950)
- McKellar, J. F., and Norrish, R. G. W., "The Combustion of Gaseous Methyl Iodide Studied by Flash Photolysis and Kinetic Spectroscopy," *Proc. Roy. Soc. (London) A* 263, 51 (1961)
- McKellar, J. F., and Norrish, R. G. W., "The Combustion of Gaseous Aldehydes Studied by Flash Photolysis and Kinetic Spectroscopy," *Proc. Roy. Soc. (London) A* 254, 147 (1960)
- McMillan, G. R., and Calvert, J. G., "Gas Phase Photo-Oxidation," *Oxid. Combust. Rev.* 1, 83 (1965)
- Michaud, P., Paraskevopoulos, G., and Cvetanović, R. J., "Relative Rates of the Reactions of $\delta(^1\text{D}_2)$ Atoms with Alkanes and Cycloalkanes," *J. Phys. Chem.* 78, 1457 (1974)

- Mill, T., Mayo, F., Richardson, R., Irwin, K., and Allara, D. L., "Gas- and Liquid-Phase Oxidations of n-Butane," *J. Am. Chem. Soc.* 94, 6802 (1972)
- Mill, T., and Montorsi, G., "The Liquid-Phase Oxidation of 2,4-Dimethylpentane," *Int. J. Chem. Kinet.* 5, 119 (1973); see also: "The Oxidation of 2,4-Dimethylpentane," *Am. Chem. Soc. 161 Natl. Meeting, Abstr. Papers, 161*, PETR-8 (1971)
- Miller, V. B., Levin, P. I., Konareva, G. P., Neiman, M. B., and Enikolopyan, N. S., "Application of the Kinetic Tracer Method for Studying the Oxidation of Methane in the Presence of Nitromethane," *Russ. J. Phys. Chem.* 34, 940 (1960); tr. of *Zh. Fiz. Khim.* 34, 1980 (1960)
- Minkoff, G. J., and Tipper, C. F. H., "Chemistry of Combustion Reactions," (Butterworths, London, 1962) 393 pages
- Miyama, H., and Takeyama, T., "Mechanism of Methane Oxidation in Shock Waves," *J. Chem. Phys.* 40, 2049 (1964)
- Morris, E. D., Jr., and Niki, H., "Reactivity of Hydroxyl Radicals with Olefins," *J. Phys. Chem.* 75, 3640 (1971)
- Morris, E. D., Jr., and Niki, H., "Mass Spectrometric Study of the Reaction of Hydroxyl Radical with Formaldehyde," *J. Chem. Phys.* 55, 1991 (1971)
- Morris, E. D., Jr., Stedman, D. H., and Niki, H., "Mass Spectrometric Study of the Reactions of the Hydroxyl Radical with Ethylene, Propylene, and Acetaldehyde in a Discharge-Flow System," *J. Am. Chem. Soc.* 93, 3570 (1971); see also: "Reactions of OH with Ethylene, Propylene, and Acetaldehyde," *Am. Chem. Soc., 160th Natl. Meeting, Abstr. Papers, 160*, PHYS-119 (1970)
- Morrissey, R. J., and Schubert, C. C., "The Reactions of Ozone with Propane and Ethane," *Combust. Flame* 7, 263 (1963) see also *Diss. Abstr.* 23, 89 (1962)
- Moshkina, R. I., Galanina, N. L., and Nalbandyan, A. B., "Study of the Reaction Mechanism of the Oxidation of Methane with the Aid of Labeled Atoms. Communication 3. Place of Methanol in the Mechanism of the Reaction," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 1654 (1959); tr. of *Izv. Akad. Nauk SSSR, Otd. Khim. Nauk* 1725 (1959)
- Moshkina, R. I., Nalbandyan, A. B., Neiman, M. B., and Feklisov, G. I., "Investigation of the Oxidation of Methane with the Aid of Labeled Atoms. Communication 2. Mechanism of the Formation of Carbon Dioxide," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 821 (1957); tr. of *Izv. Akad. Nauk SSSR, Otd. Khim. Nauk* 801 (1957)
- Moshkina, R. I., Polyak, S. S., Masterovoi, I. F., and Nalbandyan, A. B., "Kinetics of Slow Oxidation of Ethane," *Vses. Konf. Mekh. Gazofaz. Reakts.*, 2nd, 22 (1971); *Ref. Zh. Khim., Abstr. No. 5B1155* (1972); *Chem. Abstr.* 78:28906j (1973)
- Moshkina, R. I., Polyak, S. S., Masterovoi, I. F., and Nalbandyan, A. B., "Mechanism of the Ethane Oxidation II. The Effect of Intermediates and Final Products on the Slow Reaction Kinetics," *Kinet. Catal.* 15, 250 (1974); tr. of *Kinet. Katal.* 15, 282 (1974)
- Moshkina, R. I., Polyak, S. S., Sokolova, N. A., Masterovoi, I. F., and Nalbandyan, A. B., "Mechanism of Ethane Oxidation Paths of Formaldehyde and Ethylene Oxide Formation," *Dokl. Phys. Chem.* 987 (1974); tr. of *Dokl. Akad. Nauk SSSR* 218, 1147 (1974)
- Mulcahy, M. F. R., "Oxidation of Lower Paraffins," *Discuss. Faraday Soc.* 2, 128 (1947)
- Mulcahy, M. F. R., "The Oxidation of Hydrocarbons. Some Observations on the Induction Period," *Trans. Faraday Soc.* 45, 575 (1949)

- Mulcahy, M. F. R., "The Kinetics of Oxidation of Hydrocarbons in the Gas Phase. A Theory of the Low-Temperature Mechanism," *Discuss. Faraday Soc.* 10, 259 (1951)
- Mullen, J. D., and Skirrow, G. "Gas-Phase Oxidation of Propylene," *Proc. Roy. Soc. (London) A* 244, 312 (1958)
- Mullins, B. P., "Studies on the Spontaneous Ignition of Fuels Injected into a Hot Air Stream IV.-Ignition Delay Measurements on Some Gaseous Fuels at Atmospheric and Reduced Static Pressures," *Fuel* 32, 343 (1953)
- Myers, B. F., and Bartle, E. R., "Reaction and Ignition Delay Times in the Oxidation of Propane," *AIAA J.* 7, 1862 (1969)
- Nagiev, T. M., and Mamed'yarov, G. M., "Mechanism of Propane Oxidation," *Azerb. Khim. Zh.* (2) 65 (1973); *Chem. Abstr.* 80:94937n (1974)
- Nalbandyan, A. B., "Photochemical Mercury-Sensitized Oxidation of Methane. The Intermediate Products," *Dokl. Akad. Nauk SSSR* 60, 607 (1948)
- Nalbandyan, A. B., "The Mechanism of the Photochemical Oxidation of Methane," *Zh. Fiz. Khim.* 22, 1443 (1948)
- Nalbandyan, A. B., "New Ways of Studying the Kinetics and Mechanism of Complex Gas-Phase Reactions," *Probl. Kinet. Elemt. Khim. Reakts., Dokl. Konf.*, 140 (1972) (published 1973); *Chem. Abstr.* 81:12602h (1974)
- Naylor, C. A., and Wheeler, R. V., "The Ignition of Gases. Part IX. Ignition by a Heated Surface. Mixtures of Methane and Air at Reduced Pressures," *J. Chem. Soc. (London)* 1426 (1935)
- Nechitailo, L. G., Kucher, R. V., and Poklonskii, A. N., "Some Elementary Chain-Propagation Reactions in the Liquid-Phase Oxidation of Hex-1-ene," *J. Org. Chem. USSR* 10, 2035 (1974); tr. of *Zh. Org. Khim.* 10, 2017 (1974)
- Neiman, M. B., and Aivazov, B., "Critical Phenomena in the Oxidation and Self-Inflammation of Hydrocarbons," *Nature* 135, 655 (1935)
- Neiman, M. B., Efremov, V. Ya., and Serdyuk, N. K., "The Mechanism of Formation of Methyl Alcohol during the Oxidation of Hydrocarbons," *Kinet. Katal.* 1, 319 (1960); tr. of *Kinet. Katal.* 1, 345 (1960)
- Neiman, M. B., and Egorov, L. N., "Investigation of the Conditions of Ignition of Gaseous Mixtures. I. Induction Period of the Thermo-Ignition of Methane-Oxygen Mixtures," *Zh. Fiz. Khim.* 3, 61 (1932)
- Neiman, M. B., and Egorov, L. N., "Untersuchung der Induktionsperiode bei der Wärmeentzündung von Gasgemischen," *Phys. Z. Sowjetunion* 1, 700 (1932)
- Neiman, M. B., and Serbinov, A. I., "Limits of Gaseous Explosions," *Nature* 128, 1040 (1931)
- Neiman, M. B., and Serbinov, A. I., "Gebiet der Thermischen Entzündung des Gemisches von Methan und Sauerstoff," *Phys. Z. Sowjetunion* 1, 536 (1932)
- Neiman, M. B., and Serbinov, A. I., "Investigation of the Conditions of Ignition of Gaseous Mixtures. II. The Region of Thermo-ignition with Methane-Oxygen Mixtures," *Zh. Fiz. Khim.* 3, 75 (1932)
- Neiman, M. B., and Serbinov, A. I., "Investigation of the Conditions of Ignition of Gaseous Mixtures. IV. Influence of Change of Composition on the Region of Ignition of Mixtures of Methane with Oxygen," *Zh. Fiz. Khim.* 4, 41 (1933)
- Neiman, M. B., and Serbinov, A. I., "The Effect of the Change of Composition on the Ignition Region of Methane-Oxygen Mixtures," *Phys. Z. Sowjetunion* 4, 433 (1933)
- Nemeth, A., Benedek, P., and Vaczi, P., "Computing the Ignition Period of a Combustible Gas Mixture. Application of the REDI Program. I," *Magy. Kem. Lapja* 29, 100 (1974)

- Nemeth, A., and Sawyer, R. F., "The Overall Kinetics of High-Temperature Methane Oxidation in a Flow Reactor," *J. Phys. Chem.* 73, 2421 (1969)
- Nettleton, M. A., "Influence of Preflame Reactions on Combustion of Hydrocarbons in Shock-Heated Air," *Fuel* 53, 99 (1974)
- Neumann, M. G., and Jonathan, N., "Reaction of $\text{O}({}^3\text{P})$ Oxygen Atoms with Dimethyl Ether and *trans*-But-2-ene," *J. Chem. Soc. (London) B* 167 (1970)
- Newitt, D. M., and Gardner, J. B., "The Initial Formation of Alcohols During the Slow Combustion of Methane and Ethane at Atmospheric Pressure," *Proc. Roy. Soc. (London) A* 154, 329 (1936)
- Newitt, D. M., and Haffner, A. E., "The Formation of Methyl Alcohol and Formaldehyde in the Slow Combustion of Methane at High Pressures," *Proc. Roy. Soc. (London) A* 134, 591 (1932)
- Newitt, D. M., and Thornes, L. S., "The Oxidation of Propane. Part III. The Kinetics of the Oxidation," *J. Chem. Soc. (London)* 1669 (1937)
- Nguyen Van Hai, Antonik, S., Sochet, L. R., and Lucquin, M., "Rôle des Éthyléniques dans l'Oxydation et la Combustion des Hydrocarbures Saturés. I.-Étude Physico-Chimique du Couple Propane-Propylène," *Bull. Soc. Chim. France* 2150 (1970)
- Niki, H., "Reaction of $\text{O}({}^3\text{P})$ Atoms with Formaldehyde," *J. Chem. Phys.* 45, 2330 (1966); Erratum, *ibid.* 47, 3102 (1967)
- Niki, H., Daby, E. E., and Weinstock, B., "Reaction of Atomic Oxygen with Methyl Radicals," *J. Chem. Phys.* 48, 5729 (1968)
- Niki, H., Daby, E. E., and Weinstock, B., "Mass Spectrometric Study of the Kinetics and Mechanism of the Ethylene-Atomic Oxygen Reaction by the Discharge-Flow Technique at 300°K," *Symp. Combust.* 12 (Combustion Institute, Pittsburgh, 1969) 277
- Niki, H., Daby, E. E., and Weinstock, B., "Mechanisms of Smog Reactions," *Adv. Chem. Ser.* 113, 16 (1972)
- Niki, H., and Weinstock, B., "Reaction of $\text{O}({}^3\text{P})$ Atoms with Diacetylene," *J. Chem. Phys.* 45, 3468 (1966); Erratum, *ibid.* 47, 3102 (1967)
- Norikov, Yu. D., and Blyumberg, E. A., "Chain Continuation Mechanism in Gaseous Phase Oxidation of n-Butane," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 1275 (1962); tr. of *Izv. Akad. Nauk SSSR, Œtd. Khim. Nauk* 1357 (1962)
- Norikov, Yu. D., Blyumberg, E. A., and Emanuel, N. M., "Effect of the Surface of a Reactor on the Rate of Formation and Separation of Hydroperoxides during the Oxidation of n-Butane in Gas and Liquid Phases," *Usp. Khim. Œrg. Perekisnykh Soedin. Autookisleniya, Dokl. Vses. Konf.*, 3rd, 410 (1965); *Chem. Abstr.* 72:21140x (1970)
- Norikov, Yu. D., Bobolev, A. V., and Blyumberg, E. A., "Influence of the Surface on the Mechanism of Chain Continuation in the Gas-Phase Oxidation of n-Butane," *Bull. Acad. Sci. USSR, Div. Chem. Sci.* 774 (1964); tr. of *Izv. Akad. Nauk SSSR, Ser. Khim.* 826 (1964)
- Norrish, R. G. W., "Rôle des Aldéhydes dans l'Oxydation des Hydrocarbures," *Rev. Inst. Fr. Pet. Ann. Combust. Liq.* 4, 288 (1949); also published in *Colloq. Int. CNRS* 16, 16 (1948)
- Norrish, R. G. W., "A Theory of the Combustion of Hydrocarbons," *Proc. Roy. Soc. (London) A* 150, 36 (1935)
- Norrish, R. G. W., "Evidence Relating to the Combustion of Hydrocarbons," *Discuss. Faraday Soc.* 10, 269 (1951)
- Norrish, R. G. W., and Buckler, E. J., "Ignition Catalysis," in "Handbuch der Katalyse," Schwab, G.-M., editor (Wien, Springer-Verlag, 1941) 385
- Norrish, R. G. W., and Foord, S. G., "The Kinetics of the Combustion of Methane," *Proc. Roy. Soc. (London) A* 157, 503 (1936)

- Norrish, R. G. W., and Patnaik, D., "Effect of Light on the Combustion of Hydrocarbons," *Nature* 163, 883 (1949)
- Norrish, R. G. W., and Porter, K., "Some Features of the Gas Phase Oxidation of n-Butenes," *Proc. Roy. Soc. (London) A* 272, 164 (1963)
- Norrish, R. G. W., and Reagh, J. D., "The Surface as a Limiting Factor in the Slow Combustion of Hydrocarbons," *Proc. Roy. Soc. (London) A* 176, 429 (1940)
- Norrish, R. G. W., and Thomas, J. M., "Oxidation of Gaseous Formaldehyde," *Nature* 210, 728 (1966)
- Norrish, R. G. W., and Wallace, J., "The Reaction of Methane and Oxygen Sensitized by Nitrogen Peroxide. Part I-Thermal Ignition," *Proc. Roy. Soc. (London) A* 145, 307 (1934)
- Noyes, W. A., Jr., "The Photochemical Study of the Reaction of Simple Alkyl Radicals with Oxygen," in "Festschrift Prof. Dr. Arthur Stoll," (Birkhäuser, Basel, 1957) 64
- Öganesyan, E. A., Vardanyan, I. A., and Nalbandyan, A. B., "Study of the Acetaldehyde Oxidation Reaction at High Temperatures," *Dokl. Phys. Chem.* 728 (1973); tr. of *Dokl. Akad. Nauk SSSR* 212, 153 (1973)
- Öganov, K. A., Arunyants, G. G., and Mamadzhanyan, Zb. A., "Optimization of the Oxidative Thermal Pyrolysis of Methane," *Prom. Arm.* 21 (1972); *Chem. Abstr.* 78:135551m (1973)
- Ögorodnikov, I. A., Polyak, S. S., and Shtern, V. Ya., "Mechanism of the Oxidation of Propane," *Kinet. Catal.* 10, 998 (1969); tr. of *Kinet. Katal.* 10, 1210 (1969)
- Öhlmann, G., "Kinetik und Mechanismus der Gasphasenoxydation höherer, gesättigter Kohlenwasserstoffe," *Wiss. Z. Tech. Hochsch. Chem. "Carl Schorlemmer" Leuna-Merseburg*, 12, 195 (1970)
- Öhlmann, G., and Leibnitz, E., "Studium der Kinetik und des Mechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase. I. Mitteilung: Kurze Literaturübersicht über den Tieftemperaturmechanismus der Oxydation von höheren Kohlenwasserstoffen und über die Tieftemperaturoxydation von n-Heptan," *Z. Phys. Chem. (Leipzig)* 217, 408 (1961)
- Öhlmann, G., Lischke, G., Schröder, E., and Leibnitz, E., "Untersuchungen über die Reaktionskinetik und den Reaktionsmechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase. II. Mitteilung: Die Bestimmung der Entflammungsgrenzen von Äquimolekularen Sauerstoff-Kohlenwasserstoff-Gemischen," *Z. Phys. Chem. (Leipzig)* 218, 24 (1961)
- Öhlmann, G., Steinert, H., Lischke, G., and Leibnitz, E., "Untersuchungen über die Reaktionskinetik und den Reaktionsmechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase. III. Mitteilung: Über Gasphasenoxydation von n-Heptan im Tieftemperaturgebiet," *Z. Phys. Chem. (Leipzig)* 218, 42 (1961)
- Örlov, V. M., and Ponomarev, A. N., "The Reaction of Atomic Oxygen, Generated in the Gas Phase, with Solid Hydrocarbons. II. Reactions of Atomic Oxygen with Solid Propylene at 77-67°K," *Kinet. Catal.* 7, 372 (1966); tr. of *Kinet. Katal.* 7, 419 (1966)
- Örr, C. R., "Combustion of Hydrocarbons behind a Shock Wave," *Symp. Combust.* 9 (Academic Press, New York, 1963) 1034
- Panduranga, V., "Burning Velocity & Flame Speed of Methane-Air Mixtures," *Ind. J. Technol.* 11, 10 (1973)
- Papadopoulos, C., Ashmore, P. G., and Tyler, B. J., "Reactions of Oxygen Atoms with Ethane and n-Butane," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 281

- Paraskevopoulos, G., and Cvetanović, R. J., "Competitive Reactions of the Excited Oxygen Atoms, $O(^1D)$," *J. Am. Chem. Soc.* 91, 7572 (1969)
- Paraskevopoulos, G., and Cvetanović, R. J., "Relative Rate of Reaction of $O(^1D_2)$ with H_2O ," *Chem. Phys. Lett.* 2, 603 (1971)
- Parkes, D. A., "The Roles of Alkylperoxy and Alkoxy Radicals in Alkyl Radical Oxidation at Room Temperature," *Symp. Combust.* 15 (Combustion Institute, Pittsburgh, 1975) 795
- Pastrana V. A., "Kinetics of Hydroxyl Radical Reactions," *Diss. Abstr. Int. B* 34, 5448 (1974)
- Pearson, G. S., "The Photooxidation of Acetone," *J. Phys. Chem.* 67, 1686 (1963)
- Pease, R. N., "The Negative Temperature Coefficient in the Rate of Propane Oxidation," *J. Am. Chem. Soc.* 60, 2244 (1938)
- Peeters, J., "Aspects Fondamentaux des Ondes de Deflagration des Hydrocarbures," *Ind. Chim. Belge.* 38, 6 (1973)
- Peeters, J., and Mahnen, G., "Reaction Mechanisms and Rate Constants of Elementary Steps in Methane-Oxygen Flames," *Symp. Combust.* 14 (Combustion Institute, Pittsburgh, 1973) 133
- Peeters, J., and Mahnen, G., "Structure of Ethylene-Oxygen Flames. Reaction Mechanism and Rate Constants of Elementary Reactions," *Combustion Institute European Symp.* (Univ. Sheffield, 1973) Weinberg, F. J., editor, (Academic Press, London, 1973) 53
- Peeters, J., and Vinckier, C., "Production of Chemi-Ions and Formation of CH and CH_2 Radicals in Methane-Oxygen and Ethylene-Oxygen Flames," *Symp. Combust.* 15, (Combustion Institute, Pittsburgh, 1975) 969
- Pelini, N., and Antonik, S., "Oxydation de Basse Température du Méthane. Étude Analytique et Mécanisme," *Bull. Soc. Chim. France* 2735 (1974)
- Pitts, J. N., Jr. and Finlayson, B. J., "Chemiluminescent Gas Phase Reactions of Ozone with Selected Olefins," *Chemistry Dept. Inst. Geophys. Planetary Phys.*, Univ. California, Riverside, Tech. Rpt. No. 1 IGPP-UCR-73-30 (July 1973) U.S. NTIS Report AD 763755 (1973)
- Podgrenbenkov, A. L., and Kogarko, S. M., "Spherical Propagation of Combustion Processes in Fuel-Oxygen Mixtures at High Initial Temperature and Pressure," *Fiz. Gorenija Vzryva* 10, 691 (1974); *Chem. Abstr.* 82:113771p (1974)
- Poltorak, V. A., "Kinetics of Cracking Propane in the Presence of Oxygen. II. Ageing and Activation of Vessel Surface," *Russ. J. Phys. Chem.* 35, 137 (1961); tr. of *Zh. Fiz. Khim.* 35, 284 (1961)
- Poltorak, V. A., and Voevodskii, V. V., "Kinetics of Cracking of Propane in the Presence of Oxygen. I. The Effect of Treating the Vessel Walls with Hydrogen Fluoride," *Russ. J. Phys. Chem.* 35, 82 (1961); tr. of *Zh. Fiz. Khim.* 35, 176 (1961)
- Polyak, S. S., and Shtern, V. Ya., "Mechanism of Oxidation of Hydrocarbons in the Gas Phase. I. Chemism of Cool-Flame and High-Temperature Reactions of Oxidation of Propylene," *Zh. Fiz. Khim.* 27, 341 (1953)
- Polyak, S. S., and Shtern, V. Ya., "Mechanism of Oxidation of Hydrocarbons in the Gas Phase. II. Degenerate-Branched Character of the Oxidation of Propylene," *Zh. Fiz. Khim.* 27, 631 (1953)
- Polyak, S. S. and Shtern, V. Ya., "The Radical-Chain Scheme for the Oxidation of Propylene," *Dokl. Akad. Nauk SSSR* 95, 1231 (1954)
- Polymeropoulos, C. E., and Peskin, R. L., "Combustion of Fuel Vapor In a Hot, Stagnant Oxidizing Environment," *Combust. Sci. Technol.* 5, 165 (1972)
- Ponomarev, A. N., "The Reaction of Atomic Oxygen, Generated in the Gas Phase, with Solid Hydrocarbons. I. Reactions of Atomic Oxygen with Solid

- Ethylene at 65-69°K," *Kinet. Catal.* 7, 214 (1966); tr. of *Kinet. Katal.* 7, 237 (1966)
- Poroikova, A. I., "Chain Length in Oxidation of Hydrocarbons," *Vses. Konf. Kinet. Mekh. Gazofazn. Reakts.*, 2nd, 13 (1971) (Russ); *Ref. Zh. Khim. Abstr.* No. 5B1151 (1972); *Chem. Abstr.* 78:15255w (1973)
- Poroikova, A. I., Mantashyan, A. A., and Nalbandyan, A. B., "Kinetics and Mechanism of the Photochemical Oxidation of Saturated Hydrocarbons," *Kinet. Catal.* 8, 988 (1967); tr. of *Kinet. Katal.* 8, 1161 (1967)
- Poroikova, A. I., and Nalbandyan, A. B., "The Formation of Alcohols During Chlorine-Initiated Photochemical Oxidation of Propane," *Dokl. Chem.* 163, 774 (1965); tr. of *Dokl. Akad. Nauk SSSR* 163, 1165 (1965)
- Poroikova, A. I., and Nalbandyan, A. B., "Chain Termination in the Oxidation of Hydrocarbons," *Kinet. Catal.* 12, 759 (1971); tr. of *Kinet. Katal.* 12, 849 (1971)
- Pospelov, V. E., and Saraeva, V. V., "Radiation-Induced Oxidation of n-Heptane and n-Nonane in the Presence of Inhibitors," *Neftekhimiya* 8, 543 (1968); *Chem. Abstr.* 70:8094z (1969)
- Pravilov, A. M., and Vilesov, F. I., "Deactivation and Reactions of Atomic Oxygen in the ¹D State," *Russ. J. Phys. Chem.* 45, 1018 (1971); tr. of *Zh. Fiz. Khim.* 45, 1795 (1971)
- Pravilov, A. M., and Vilesov, F. I., "Reactions of Atomic Oxygen in Normal and Excited States with Simple Molecules," *Usp. Fotoniki*, No. 2 41 (1971)
- Preston, K. F., and Cvetanović, R. J., "The Photooxidation of Butene-1 by Nitrogen Dioxide at Short Wavelengths," *Ber. Bunsenges. Phys. Chem.* 72, 177 (1968)
- Prette, M., "Influence d'un Gaz Chimiquement Inerte sur la Vitesse de la Réaction en Chaines des Mélanges de Pentane Normal et d'Oxygène," *C. R. Hebd. Séances Acad. Sci. (Paris)* 203, 561 (1936)
- Puechberty, D., and Cottereau, M. J., "Étude par Spectroscopie d'Absorption des Profils de Concentration du Radical OH dans les Flammes Propane-Oxygène sous Pression Réduite," *C. R. Hebd. Séances Acad. Sci. (Paris) C* 279, 537 (1974)
- Rader, C. G., and Weller, S. W., "Ignition on Catalytic Wires: Kinetic Parameter Determination by the Heated-Wire Technique," *AIChE J.* 20, 515 (1974)
- Raley, J. H., Rust, F. F., and Vaughan, W. E., "Decompositions of Di-t-Alkyl Peroxides. I. Kinetics," *J. Am. Chem. Soc.* 70, 88 (1948)
- Ray, D. J. M., Ruiz Diaz, R., and Waddington, D. J., "Gas-Phase Oxidation of Butene-2: The Role of Acetaldehyde in the Reaction," *Symp. Combust.* 14 (Combustion Institute, Pittsburgh, 1973) 259
- Ray, D. J. M., and Waddington, D. J., "Co-Oxidation of Acetaldehyde and Alkenes in the Gas Phase," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 261
- Ray, D. J. M., and Waddington, D. J., "Gas-Phase Oxidation of 2,2-Dimethylpropane," in "Mechanisms of Hydrocarbon Reactions. A Symposium," Marta, F., and Kallo, D., editors (American Elsevier Publishing Co., Inc., New York, 1975) 721
- Razumovskii, S. D., and Zaikov, G. E., "Identification of Long-Lived Intermediate Complexes from the Effect of a Large Excess of One of the Reagents upon the Kinetics of a Bimolecular Reaction," *Dokl. Phys. Chem.* 212, 806 (1973); tr. of *Dokl. Akad. Nauk SSSR* 212, 676 (1973)
- Repa, L. A., and Shtern, V. Ya., "The Cool-Flame Oxidation of Propane," *Dokl. Akad. Nauk SSSR* 91, 309 (1953)

- Repa, L. A., and Shtern, V. Ya., "V. The Cool-Flame Oxidation of Propane," *Zh. Fiz. Khim.* 28, 414 (1954)
- Revzin, A. F., Sergeev, G. B., and Shtern, V. Ya., "Mechanism of Oxidation of Hydrocarbons in the Gas Phase. VII. Influence of Homogeneous Additions (Nitrogen Dioxide, Bromine) on the Oxidation of Propane," *Zh. Fiz. Khim.* 28, 985 (1954)
- Rezai, A. A., "Partial Oxidation of Isobutane," *Diss. Abstr.* 26, 939 (1965)
- Richter, K., Ohlmann, G., and Schirmer, W., "Studium der Kinetik und des Mechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase. VIII. Mitteilung: Der Kettenfortpflanzungs-Mechanismus bei der Gasphasenoxydation von n-Heptan im Bereich höherer Temperaturen," *Z. Phys. Chem. (Leipzig)* 253, 207 (1973)
- Richter, K., Ohlmann, G., and Schirmer, W., "Studium der Kinetik und des Mechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase. IX. Mitteilung: Der Verzweigungsmechanismus bei der Gasphasenoxydation von n-Heptan im Bereich höherer Temperaturen Die Chemische Natur der Kat-Flammen-Erscheinung," *Z. Phys. Chem. (Leipzig)* 253, 217 (1973)
- Ridge, M. J., "The Kinetics of the Low-Temperature Oxidation of Isobutane," *Trans. Faraday Soc.* 52, 858 (1956)
- Ridge, M. J., "The Slow Oxidation of Gaseous Hydrocarbons," *Rev. Pure Appl. Chem.* 6, 121 (1956)
- Rowland, F. S., Lee, P. S.-T., Montague, D. C., and Russell, R. L., "Tracer Studies of the Reactions of Singlet and Triplet Methylene in the Gas Phase," *Faraday Discuss. Chem. Soc.* 53, 111 (1972)
- Russell, R. L., and Rowland, F. S., "Reactions of Triplet Methylen with Oxygen. Formation of Molecular Hydrogen, Carbon Monoxide, and Carbon Dioxide," *J. Am. Chem. Soc.* 90, 1671 (1968)
- Sachyan, G. A., Alaverdyan, G. Sh., and Nalbandyan, A. B., "Changes in the Nature of the Propagating Radical in the Slow Oxidation of Propane," *Dokl. Chem.* 204, 482 (1972); tr. of *Dokl. Akad. Nauk SSSR* 204, 883 (1972)
- Sadovnikov, P., "Critical Conditions in the Oxidation of Ethane," *Zh. Fiz. Khim.* 9, 575 (1937)
- Salooja, K. C., "Studies of Combustion Processes Leading to Ignition of Isomeric Hexanes," *Combust. Flame* 6, 275 (1962)
- Salooja, K. C., "Mechanism of Combustion of Diethyl Ether. Comparative Studies of Diethyl Ether, Pentane and Acetaldehyde," *Combust. Flame* 9, 33 (1965)
- Salooja, K. C., "The Degenerate Chain Branching Intermediate in Hydrocarbon Combustion: Some Evidence from Studies on the Isomeric Hexanes," *Combust. Flame* 9, 219 (1965)
- Salooja, K. C., "Ignition Behaviours of Mixtures of Hydrocarbons," *Combust. Flame* 12, 597 (1968)
- Saltzman, B. E., "Kinetic Studies of Formation of Atmospheric Oxidants," *Ind. Eng. Chem.* 50, 677 (1958)
- Saltzman, B. E., and Gilbert, N., "Ozone Reaction with 1-Hexene. Clue to Smog Formation," *Ind. Eng. Chem.* 51, 1415 (1959)
- Sampson, R. J., "The Reaction Between Ethane and Oxygen at 600-630°," *J. Chem. Soc. (London)* 5095 (1963)
- Saraeva, V. V., Pospelov, V. E., and Bakh, N. A., "Mechanism of Hydroperoxide Formation in the Radiation-Initiated Oxidation of n-Heptane and n-Nonane (Effect of Temperature and Dose Rate)," *Neftekhimiya* 7, 596 (1967); *Chem. Abstr.* 68:44757k (1968)

- Sato, S., and Cvetanović, R. J., "Photooxidation of Butene-1 and Isobutene by Nitrogen Dioxide," *Can. J. Chem.* 36, 970 (1958)
- Sato, S., and Cvetanović, R. J., "Photooxidation of Butenes by Nitrogen Dioxide at Different Wave Lengths," *Can. J. Chem.* 36, 1668 (1958)
- Sato, S., and Cvetanović, R. J., "The Effect of Molecular Oxygen on the Reaction of Oxygen Atoms with *cis*-2-Pentene," *Can. J. Chem.* 37, 953 (1959)
- Satterfield, C. N., and Reid, R. C., "Note on the Kinetics of the Reactions of the Propyl Radical with Oxygen," *J. Phys. Chem.* 59, 283 (1955)
- Satterfield, C. N., and Reid, R. C., "The Role of Propylene in the Partial Oxidation of Propane," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 511
- Satterfield, C. N., and Wilson, R. E., "Partial Oxidation of Propane. The Role of Hydrogen Peroxide," *Ind. Eng. Chem.* 46, 1001 (1954)
- Saunders, D., and Heicklen, J., "Some Reactions of Oxygen Atoms. I. C_2F_4 , C_3F_6 , C_2H_2 , C_2H_4 , C_3H_6 , $1-C_4H_8$, C_2H_6 , $c-C_3H_6$, and C_3H_8 ," *J. Phys. Chem.* 70, 1950 (1966)
- Sazonov, L. A., and Ammosov, A. D., "Kinetics and Mechanism of Deep Oxidation of 1-Butene and Butadiene in Oxidative Dehydrogenation," *Partzial'n. Ókislenie Uglevodorodov, Metod. Mat. Vopr. Kinet.*, 37 (1973); *Ref. Zh. Khim., Abstr.* No. 10B906 (1974); *Chem. Abstr.* 82:16037w (1975)
- Schchemelev, G. V., Mulyava, M. P., Shevchuk, V. U., and Moin, F. B., "Measurement of Normal Combustion Rates of Rich Methane-Oxygen Mixtures," *Fiz. Gorenija Vzryva* 10, 612 (1974); *Chem. Abstr.* 82:33100d (1975)
- Scheer, M. D., "Gas Phase Oxidation of Formaldehyde," *J. Chem. Phys.* 23, 1357 (1955)
- Scheer, M. D., "Kinetics of the Gas-Phase Oxidation of Formaldehyde," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 435
- Scheer, M. D., and Klein, R., "Low-Temperature Oxygen Atom Addition to Olefins. III. Transition State and the Reaction with *cis*- and *trans*-2-Butenes," *J. Phys. Chem.* 73, 597 (1969)
- Scheer, M. D., and Klein, R., "The Addition of $O(^3P)$ to Olefins. The Nature of the Intermediate," *J. Phys. Chem.* 74, 2732 (1970)
- Schofield, K., "An Evaluation of Kinetic Rate Data for Reactions of Neutrals of Atmospheric Interest," *Planet. Space Sci.* 15, 643 (1967); *Erratum, ibid.* 15, 1336 (1967)
- Schröder, E., Ohlmann, G., and Leibnitz, E., "Studium der Kinetik und des Mechanismus der Oxydation von Benzinkohlenwasserstoffen in der Gasphase. V. Mitteilung. Die qualitative gaschromatographische Analyse der Zwischenprodukte der Oxydation des *n*-Heptans im Tieftemperaturgebiet," *Z. Phys. Chem. (Leipzig)* 225, 175 (1964)
- Schubert, C. C., and Pease, R. N., "Reaction of Paraffin Hydrocarbons with Ozonized Oxygen: Possible Role of Ozone in Normal Combustion," *J. Chem. Phys.* 24, 919 (1956)
- Schubert, C. C., and Pease, R. N., "The Oxidation of Lower Paraffin Hydrocarbons. I. Room Temperature Reaction of Methane, Propane, *n*-Butane and Isobutane with Ozonized Oxygen," *J. Am. Chem. Soc.* 78, 2044 (1956)
- Schubert, C. C., and Pease, R. N., "The Oxidation of Lower Paraffin Hydrocarbons. II. Observations on the Role of Ozone in the Slow Combustion of Isobutane," *J. Am. Chem. Soc.* 78, 5553 (1956)
- Seakins, M., "Peroxides and Peroxy Radicals in Propane Oxidation," *Proc. Roy. Soc. (London) A* 261, 281 (1961)
- Seakins, M., and Hinshelwood, C., "Some Correlations in the Kinetics of Gas-Phase Hydrocarbon Oxidations," *Proc. Roy. Soc. (London) A* 276, 324 (1963)

- Seery, D. J., and Bowman, C. T., "A Shock Tube Study of Methane Oxidation," Am. Chem. Soc., Abstr. Papers 154, L20 (1967)
- Seery, D. J., and Bowman, C. T., "An Experimental and Analytical Study of Methane Oxidation behind Shock Waves," Combust. Flame 14, 37 (1970)
- Semenov, N. N., "Die Oxydation von Kohlenwasserstoffen und die Kettentheorie," Phys. Z. Sowjetunion 1, 546 (1932)
- Semenov, N. N., "Chemical Kinetics and Chain Reactions," (Clarendon Press, Oxford, 1935)
- Semenov, N. N., "Chapter XII: Chain Reactions with Degenerate Branching," in "Some Problems in Chemical Kinetics and Reactivity," Boudart, M., editor (Princeton Univ. Press, 1959) vol. 2, p. 217
- Semenov, N. N., "Modern Concepts of the Mechanism of Hydrocarbon Oxidation in the Gas-Phase," in "Photochemistry and Reaction Kinetics," Ashmore, P. G. Dainton, F. S., and Sugden, T. M., editors, (Cambridge Univ. Press, London, 1967) 229
- Shaw, R., and Trotman-Dickenson, A. F., "The Reactions of Methoxyl Radicals with Alkanes," J. Chem. Soc. (London) 3210 (1960)
- Shtern, V. Ya., "Mechanism of Oxidation of Propane," Problemy Khimleniya Uglevodorodov, Akad. Nauk SSSR, Inst. Nefti 89 (1954); Chem. Abstr. 50:2516i (1956)
- Shtern, V. Ya., "The Gas-Phase Oxidation of Hydrocarbons," translated by M. F. Mullins, editor B. P. Mullins (Pergamon Press, Oxford, 1964)
- Shtern, V. Ya., and Polyak, S. S., "Cold-Flame and Upper-Temperature Oxidation of Propylene," Dokl. Akad. Nauk SSSR 65, 311 (1949); Chem. Abstr. 43:5268e (1949)
- Shtern, V. Ya., and Polyak, S. S., "Branched-Degenerate Nature of the Oxidation Propylene," Dokl. Akad. Nauk SSSR 66, 235 (1949); Chem. Abstr. 43:6058i (1949)
- Shtern, V. Ya., and Polyak, S. S., "Mechanism of the Oxidation of Propylene," Dokl. Akad. Nauk SSSR 85, 161 (1952)
- Shu, N. W., and Bardwell, J., "Temperature Coefficients in Hydrocarbon Oxidation," Can. J. Chem. 33, 1415 (1955)
- Shvartsman, N. A., Yantovskii, S. A., and Porsov, M. I., "Effective Activation Energy of Flames of Inhibited Propane-Air Mixtures," Mater. Soveshch. Mekh. Ingibirovaniya Tsepnykh Gazov. Reakts., 1st, 90 (1970); Chem. Abstr. 80:122941e (1974)
- Simonaitis, R., and Heicklen, J., "Reactions of CH_3 , CH_3O , and CH_3O_2 Radicals with O_3 ," J. Phys. Chem. 79, 298 (1975)
- Simonson, J. R., and Moore, N. P. W., "The Oxidation of Weak Methane-Air Mixtures at High Temperatures," Symp. Combust. 5 (Reinhold Publishing Corp., New York, 1955) 458
- Skinner, G. B., "Comment: Kinetics of Methane Oxidation," J. Chem. Phys. 58, 412 (1973)
- Skinner, G. B., and Ruehrwein, R. A., "Shock Tube Studies on the Pyrolysis and Oxidation of Methane," J. Phys. Chem. 63, 1736 (1959)
- Skinner, G. B., Lifshitz, A., Scheller, K., and Burcat, A., "Kinetics of Methane Oxidation," J. Chem. Phys. 56, 3853 (1972)
- Skirrow, G., "Gas-Phase Oxidation of Hexene-1," Proc. Roy. Soc. (London) A 244, 345 (1958)
- Skirrow, G., and Williams, A., "The Gas-Phase Oxidation of Isobutene," Proc. Roy. Soc. (London) A 268, 537 (1962)
- Skriwan, J. F., and Hoelscher, H. E., "Initiation of the Homogeneous n-Butane Oxidation," AIChE J. 5, 348 (1959)

- Skwaradowski, E., "Problems of the Theory of Combustion of Industrial Fuel Gases," *Gospod. Paliwami Energ.* 21, 17 (1973); *Chem. Abstr.* 82:88218d (1975)
- Slagle, I. R., "Shock Tube Study of the Ethylene-Oxygen Reaction," *Diss. Abstr. Int. B* 35, 766 (1974)
- Slagle, I. R., Gutman, D., and Gilbert, J. R., "Direct Identification of Products and Measurement of Branching Ratios for the Reactions of Oxygen Atoms with Vinylfluoride, Vinylchloride, and Vinylbromide," *Symp. Combust.* 15 (Combustion Institute, Pittsburgh, 1975) 785
- Slagle, I. R., Pruss, F. J., Jr., and Gutman, D., "Kinetics into the Steady State. I. Study of the Reaction of Oxygen Atoms with Methyl Radicals," *Int. J. Chem. Kinet.* 6, 111 (1974)
- Slater, D. H., and Calvert, J. G., "The Photo-Oxidation of 1,1'-Azoisobutane," *Adv. Chem. Ser.* 76, 58 (1968)
- Slavinskaya, N. A., Gribova, E. I., Demidova, G. G., Kamenetskaya, S. A., and Pshezhetskii, S. Ya., "Effect of Ozone on the Kinetics of Butane Oxidation," *Russ. J. Phys. Chem.* 37, 830 (1963); tr. of *Zh. Fiz. Khim.* 37, 1549 (1963)
- Sleppy, W. C., and Calvert, J. G., "A Study of the Methyl-Oxygen and the Methyl-Nitric Oxide Reactions by Flash Photolysis," *J. Am. Chem. Soc.* 81, 769 (1959)
- Slotin, L., and Style, D. W. G., "The Slow Oxidation of Methane," *Trans. Faraday Soc.* 35, 420 (1939)
- Smith, I. W. M., "Rate Parameters for Reactions of O(2^3P) with CS_2 , NO_2 and Olefins," *Trans. Faraday Soc.* 64, 378 (1968)
- Snowdon, F. F., and Style, D. W. G., "The Oxidation of Gaseous Formaldehyde," *Trans. Faraday Soc.* 35, 426 (1939)
- Sochet, L.-R., "Réaction en Chaines a Ramification Indirecte Différée et Dégénérée: Évolution de la Concentration des Centres Actifs Moléculaire et Radicalaire dans l'Oxydation du Méthane," *J. Chim. Phys. Phys.-Chim. Biol.* 70, 456 (1973)
- Sochet, L.-R., Egret, J., and Lucquin, M., "Le «Pic d'Arrêt» de l'Oxydation de Haute Température des Hydrocarbures Saturés," *J. Chim. Phys. Phys.-Chim. Biol.* 63, 1555 (1966)
- Sochet, L.-R., and Lucquin, M., "Combustion de Haute Température du Propane. Étude de la Morphologie," *J. Chim. Phys. Phys.-Chim. Biol.* 62, 796 (1965)
- Sochet, L.-R., Sawerysyn, J.-P., and Lucquin, M., "Radical Reactions in the Last Stages of Gas-Phase Hydrocarbon Oxidation," *Adv. Chem. Ser.* 76, 111 (1968)
- Sochet, L.-R., Sawerysyn, J.-P., and Lucquin, M., "Incidence du Mécanisme du pic d'Arrêt sur la Formation des Alcools dans l'Oxydation Lente de Haute Température du Propane," *Bull. Soc. Chim. France* 3596 (1968)
- Sokolova, N. A., Markevich, A. M., and Nalbandyan, A. B., "The Initiating Step in the Oxidation of Acetaldehyde," *Russ. J. Phys. Chem.* 35, 415 (1961); tr. of *Zh. Fiz. Khim.* 35, 850 (1961)
- Sokolova, N. A., Nikisha, L. V., Polyak, S. S., and Nalbandyan, A. B., "Reaction of Methyl Radical with Oxygen," *Vses. Konf. Kinet. Mekh. Gazofazn. Reakts.*, 2nd, 36 (1971); *Ref. Zh. Khim., Abstr. No. 5B1168* (1972); *Chem. Abstr.* 78:28943u (1973)
- Sokolova, N. A., Nikisha, L. V., Polyak, S. S., and Nalbandyan, A. B., "Reaction of the Methyl Radical with Oxygen," *Dokl. Chem.* 185, 298 (1969); tr. of *Dokl. Akad. Nauk SSSR* 185, 850 (1969)

- Sokolova, N. A., Nikisha, L. V., Polyak, S. S., and Nalbandyan, A. B., "On the Rate Constant of the Reaction between the Methyl Radical and Oxygen," *Kinet. Catal.* 14, 721 (1973); tr. of *Kinet. Katal.* 14, 830 (1973)
- Sokolova, N. A., Nikisha, L. V., Polyak, S. S., and Nalbandyan, A. B., "Mechanism for the Reaction of CH_3 with O_2 in the Presence of Additions of $\text{CH}_3\text{CH}\theta$," *Kinet. Catal.* 14, 977 (1973); tr. of *Kinet. Katal.* 14, 1111 (1973)
- Soloukhin, R. I., "Exothermic Reaction Zone in One-Dimensional Shock Waves in Gases," *Combust. Explos. Shock Waves* 2, 6 (1966); tr. of *Fiz. Gorenija Vzryva* 2, 12 (1966)
- Soloukhin, R. I., "High-Temperature Oxidation of Ammonia, Carbon Monoxide, and Methane by Nitrous Oxide in Shock Waves," *Symp. Combust.* 13 (Combustion Institute, Pittsburgh, 1971) 121
- Soroka, B. S., and Erinov, A. E., "Burning of the Homogeneous Turbulent Jet of a Methane-Air Mixture in a Direct-Flow Tunnel," *Teor. Prakt. Szhiganiya Gaza* 5, 105 (1972); *Chem. Abstr.* 77:128640r (1972)
- Spence, R., "The Slow Combustion of Formaldehyde," *J. Chem. Soc. (London)* 649 (1936)
- Spence, R., and Kistiakowsky, G. B., "Kinetics of the Acetylene-Oxygen Reaction," *J. Am. Chem. Soc.* 52, 4837 (1930)
- Steacie, E. W. R., "Atomic and Free Radical Reactions," *Am. Chem. Soc. Monograph Ser. No. 125, Vol. 1, Second Edition* (Reinhold Publishing Corp., New York, 1954)
- Steacie, E. W. R., "Atomic and Free Radical Reactions," *Am. Chem. Soc. Monograph Ser. No. 125, Vol. 2, Second Edition* (Reinhold Publishing Corp., New York, 1954)
- Stedman, D. H., and Niki, H., "Ozonolysis Rates of Some Atmospheric Gases," *Environ. Lett.* 4, 303 (1973)
- Stedman, D. H., Wu, C. H., and Niki, H., "Kinetics of Gas-Phase Reactions of Ozone with Some Olefins," *J. Phys. Chem.* 77, 2511 (1973)
- Stuhl, F., "Rate Constant for the Reaction of OH with $n\text{-C}_4\text{H}_{10}$," *Z. Naturforsch. A* 28, 1383 (1973)
- Stuhl, F., and Niki, H., "Determination of Rate Constants for Reactions of O Atoms with C_2H_2 , C_2D_2 , C_2H_4 and C_3H_6 Using a Pulsed Vacuum-uv Photolysis-Chemiluminescent Method," *J. Chem. Phys.* 55, 3954 (1971)
- Stuhl, F., and Niki, H., "Absolute Rate Constants for the Reactions of $\text{O}(\text{P}_3)$ Atoms with C_2H_4 and C_2D_4 ," *J. Chem. Phys.* 57, 5403 (1972)
- Style, D. W. G., and Summers, D., "The Photochemical Reaction between Formaldehyde and Oxygen," *Trans. Faraday Soc.* 42, 388 (1946)
- Subbaratnam, N. R., "The Possible Role of Hydroperoxide Radical in the High Pressure Oxidation Reactions of Hydrocarbons in the Gasphase," *Z. Phys. Chem. [N.F.]* 44, 35 (1965)
- Subbaratnam, N. R., and Calvert, J. G., "The Mechanism of Methyl Hydroperoxide Formation in the Photooxidation of Azomethane at 25°," *J. Am. Chem. Soc.* 84, 1113 (1962)
- Sullivan, J. O., and Warneck, P., "Rate Constant for the Reaction of Oxygen Atoms with Acetylene," *J. Phys. Chem.* 69, 1749 (1965)
- Suzuki, M., Moriwaki, T., Okazaki, S., Okuda, T., and Tanzawa, T., "Oxidation of Ethylene in Shock Tube," *Astronaut. Acta* 18, 359 (1973)
- Syroezhko, A. M., and Potekhin, V. M., "Kinetics of Formation and Conversion of Decanol-2 and Decanol-4 During Liquid-Phase Oxidation of n -Decane by Air," *J. Appl. Chem. USSR* 46, 1403 (1973); tr. of *Zh. Prikl. Khim.* 46, 1318 (1973)

- Syroezhko, A. M., Potekhin, V. M., and Proskuryakov, V. A., "Composition of the Products of Liquid-Phase Oxidation of n-Decane," *J. Appl. Chem. USSR* 43, 1803 (1970); tr. of *Zh. Prikl. Khim.* 43, 1791 (1970)
- Syroezhko, A. M., Potekhin, V. M., and Proskuryakov, V. A., "Reaction Kinetics and Conversion of Decanone-5 During Oxidation of n-Decane by Air," *J. Appl. Chem. USSR* 43, 2315 (1970); tr. of *Zh. Prikl. Khim.* 43, 2295 (1970)
- Syroezhko, A. M., Potekhin, V. M., and Proskuryakov, V. A., "Kinetics of Formation and Conversion of Decanol-5 During Liquid-Phase Oxidation of n-Decane by Air," *J. Appl. Chem. USSR* 44, 2082 (1971); tr. of *Zh. Prikl. Khim.* 44, 2047 (1971)
- Syroezhko, A. M., Potekhin, V. M., and Proskuryakov, V. A., "Sequence of Formation of the Main Products of Liquid-Phase Oxidation of n-Decane," *J. Appl. Chem. USSR* 46, 402 (1973); tr. of *Zh. Prikl. Khim.* 46, 388 (1973)
- Szabó, Z. G., Galiba, I., and Gál, D., "Study of the Oxidation of n-Heptane," *Acta Chim. (Budapest)* 74, 239 (1972); tr. from *Magy. Kemi. Foly.* 78, 97 (1972)
- Takahashi, S., "On the Reaction of Oxygen Atom with Acetylene," *Memoirs Defense Acad. (Japan)* 11, 405 (1971)
- Takezaki, Y., Mori, S., and Kawasaki, H., "The Reaction of Oxygen Atoms with Dimethyl Ether," *Bull. Chem. Soc. Japan* 39, 1643 (1966)
- Takezaki, Y., Gishi, K., and Mori, S., "Kinetic Study on the Reaction of Oxygen Atoms with Dimethyl Ether by Means of Mass Spectrometer," *Bull. Inst. Chem. Res., Kyoto Univ.* 44, 341 (1966)
- Tanaka, C., Tsuchiya, S., and Hikita, T., "Reaction of Oxygen Atoms and Ethylene," *J. Fac. Engr. Univ. Tokyo A* 5, 62 (1967)
- Taylor, J. E., and Kulich, D. M., "Homogeneous Gas-Phase Pyrolyses with a Wall-less Reactor. III. The Oxygen-Ethane Reaction. A Double Reversal in Oxygen and Surface Effects," *Int. J. Chem. Kinet.* 5, 455 (1973)
- Terao, T., Sakai, N., and Shida, S., "Reaction of Methylened Radicals with Acetylene in the Gas Phase," *J. Am. Chem. Soc.* 85, 3919 (1963)
- Thomas, S. S., and Calvert, J. G., "The Photooxidation of 2,2'-Azoisobutane at 25°," *J. Am. Chem. Soc.* 84, 4207 (1962)
- Thompson, H. W., and Hinshelwood, C. N., "The Kinetics of the Oxidation of Ethylene," *Proc. Roy. Soc. (London) A* 125, 277 (1929)
- Thrush, B. A., "The Study of Elementary Gas Reactions in Flow Systems," *Ber. Bunsenges. Phys. Chem.* 72, 966 (1968)
- Thynne, J. C. J., and Gray, P., "Methoxyl-Radical-Induced Decomposition of Methyl Formate: Kinetics of Methoxyl and Methyl Radical Reactions," *Trans. Faraday Soc.* 59, 1149 (1963)
- Tipper, C. F. H., and Titchard, A., "The Effect of Additives on the Cool Flame Combustion of n-Heptane," *Combust. Flame* 16, 223 (1971)
- Toby, S., "Chemiluminescence in the Gas-Phase Reaction between Ozone and Allene," *J. Luminescence* 8, 94 (1973)
- Toby, F. S., and Toby, S., "Reaction between Ozone and Allene in the Gas Phase," *Int. J. Chem. Kinet.* 6, 417 (1974)
- Trimm, D. L., and Cullis, C. F., "Radical Isomerisation during the Gaseous Oxidation of 2,3-Dimethylbutane," *J. Chem. Soc. (London)* 1430 (1963)
- Tsuchiya, F., Kuwa, M., and Ikawa, T., "Epoxidation of cis-2-Butene with Oxygen Atom Generated by the Photoinduced Degradation of Pyridine N-Oxide and Substituted Pyridine N-Oxides," *Kogyo Kagaku Zasshi* 73, 2655 (1970)

- Tsuji, H., Akita, K., and Asaba, T., "Fundamental Research on Combustion. III. Chemical Reactions in Combustion," *Nenryo Kyokai-Shi* 45, 684 (1966)
- Tverdokhlebov, G. N., Smirnov, I. A., and Tolok, Ya. N., "Empirical Relations for Determination of Rates and Concentration Limits of the Combustion of Some Gas Mixtures," *Automat. Usoversh. Tekhnol. Khim. Proizvod.*, 112 (1972); *Ref. Zh. Teploenerg., Abstr. No. 12T52* (1972); *Chem. Abstr.* 78:96768r (1973)
- Vandenabeele, H., Corbeels, R., and Van Tiggelen, A., "Activation Energy and Reaction Order in Methane-Oxygen Flames," *Combust. Flame* 4, 253 (1960)
- van den Bergh, H. E., and Callear, A. B., "Spectroscopic Measurement of the Rate of the Gas-phase Combination of Methyl Radicals with Nitric Oxide and Oxygen at 295 K," *Trans. Faraday Soc.* 67, 2017 (1971)
- Vanpee, M., "Le Mécanisme d'Oxydation du Formaldehyde," *Bull. Soc. Chim. Belg.* 62, 285 (1953)
- Vanpee, M., "Note Complémentaire Concernant «Le Mécanisme d'Oxydation du Formaldehyde»,," *Bull. Soc. Chim. Belg.* 62, 661 (1953)
- Vanpee, M., and Grard, F., "Formaldehyde and the Oxidation of Methane," *Fuel* 34, 433 (1955)
- Vanpee, M., and Grard, F., "The Kinetics of the Slow Combustion of Methane at High Temperature," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 484
- Van Wonterghem, J., and Van Tiggelen, A., "Chain-Branching Activation Energy in Acetylene-Oxygen Flames," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 637
- Vardanyan, I. A., and Nalbandyan, A. B., "Effect of Nature and Condition of Reaction Vessel Surface on Oxidation Kinetics of Formaldehyde," *Kinet. Catal.* 11, 927 (1970); tr. of *Kinet. Katal.* 11, 1115 (1970)
- Vardanyan, I. A., and Nalbandyan, A. B., "Effect of the Nature and State of the Reaction Vessel Surface on the Kinetics of Formaldehyde Oxidation," *Arm. Khim. Zh.* 22, 549 (1969)
- Vardanyan, I. A., Sachyan, G. A., and Nalbandyan, A. B., "Detection of HO_2 Radicals in the Slow Oxidation of Formaldehyde," *Dokl. Phys. Chem.* 210 (1970); tr. of *Dokl. Akad. Nauk SSSR* 191, 130 (1970)
- Vardanyan, I. A., Sachyan, G. A., and Nalbandyan, A. B., "Determination of the Destruction Probability of HO_2 Radicals on Different Surfaces and the Rate Constants of the Reaction $\text{HO}_2 + \text{CH}_2\text{O} \rightarrow \text{H}_2\text{O}_2 + \text{HCO}$," *Dokl. Phys. Chem.* 498 (1970); tr. of *Dokl. Akad. Nauk SSSR* 193, 123 (1970)
- Vardanyan, I. A., Sachyan, G. A., and Nalbandyan, A. B., "Mechanism of Formaldehyde Oxidation," *Arm. Khim. Zh.* 25, 281 (1972)
- Vardanyan, I. A., Sachyan, G. A., and Nalbandyan, A. B., "Kinetics and Mechanism of Formaldehyde Oxidation," *Combust. Flame* 17, 315 (1971)
- Vardanyan, I. A., Sachyan, G. A., Philiposyan, A. G., and Nalbandyan, A. B., "Kinetics and Mechanism of Formaldehyde Oxidation-II," *Combust. Flame* 22, 153 (1974)
- Varkey, T. J., and Sandler, S., "The Low-Temperature Oxidation of 2-Methylbutane in a Flow System during the 'Induction Period'," *Combust. Flame* 13, 223 (1969); see also *Diss. Abstr. Int. B* 30, 632 (1969)
- Vartanyan, L. S., Maizus, Z. K., and Emanuel, N. M., "The Kinetic Characteristics of the Intermediate Peroxide Oxidation Products of Decane," *Zh. Fiz. Khim.* 30, 856 (1956)
- Vartanyan, L. S., Maizus, Z. K., and Emanuel, N. M., "The Successive Formation of the Decane Oxidation Products," *Zh. Fiz. Khim.* 30, 862 (1956)

- Vasil'ev, R. F., Shlyapintokh, V. Ya., and Emanuel, N. M., "The Mechanism of the Initiating Action of Nitrogen Dioxide in the Oxidation of 2,7-Dimethyloctane by Molecular Oxygen," Bull. Acad. Sci. USSR, Div. Chem. Sci. 198 (1961); tr. of Izv. Akad. Nauk SSSR, Otd. Khim. Nauk 218 (1961)
- Vilesov, F. I., and Pravilov, A. M., "Reactions between Atomic Oxygen and Methane on Photolysis of a Gaseous Mixture of $O_2 + CH_4$ in the 1925-1550 Å Range," High Energy Chem. 4, 191 (1970); tr. of Khim. Vys. Energy 4, 220 (1970)
- Vilesov, F. I., and Pravilov, A. M., "Photolysis of Gaseous Oxygen - Methane Mixtures. Effects of O_2 , He, and Ar on Product Yields from the Reactions $O(^1D) + CH_4$ and $O(^3P) + CH_4$," High Energy Chem. 4, 475 (1970); tr. of Khim. Vys. Energ. 4, 526 (1970)
- Von Elbe, G., and Lewis, B., "The Combustion of Paraffin Hydrocarbons," J. Am. Chem. Soc. 59, 976 (1937)
- Vrbaski, T., and Cvetanović, R. J., "Relative Rates of Reaction of Ozone with Olefins in the Vapor Phase," Can. J. Chem. 38, 1053 (1960)
- Wagner, H. Gg., "Reaction Zone and Stability of Gaseous Detonations," Symp. Combust. 9 (Academic Press, New York, 1963) 454
- Walburn, P. G., "Activation Energies in a Baffle Stabilized Flame," Combust. Flame 12, 550 (1968)
- Walker, R. W., "A Critical Survey of Rate Constants for Reactions in Gas-Phase Hydrocarbon Oxidation," in "Reaction Kinetics," A Specialist Periodical Report (The Chemical Society, Burlington House, London, 1975) Vol. 1 pg. 161
- Washida, N., and Bayes, K. D., "The Rate of Reaction of Methyl Radicals with Atomic Oxygen," Chem. Phys. Lett. 23, 373 (1973)
- Watson, J. S., and Darwent, B. deB., "The Mercury Photosensitized Oxidation of Ethane," J. Phys. Chem. 61, 577 (1957)
- Wei, Y. K., and Cvetanović, R. J., "A Study of the Vapor Phase Reaction of Ozone with Olefins in the Presence and Absence of Molecular Oxygen," Can. J. Chem. 41, 913 (1963)
- Wenger, F., and Kutschke, K. G., "The Photooxidation of Azomethane. III," Can. J. Chem. 37, 1546 (1959)
- Westenberg, A. A., and de Haas, N., "Atom-Molecule Kinetics at High Temperature Using ESR Detection. Technique and Results for $O + H_2$, $O + CH_4$, and $O + C_2H_6$," J. Chem. Phys. 46, 490 (1967)
- Westenberg, A. A., and de Haas, N., "Reinvestigation of the Rate Coefficients for $O + H_2$ and $O + CH_4$," J. Chem. Phys. 50, 2512 (1969)
- Westenberg, A. A., and de Haas, N., "Absolute Measurements of the $O + C_2H_2$ Rate Coefficient," J. Phys. Chem. 73, 1181 (1969)
- Westenberg, A. A., and de Haas, N., "Absolute Measurements of the $O + C_2H_4$ Rate Coefficient," Symp. Combust. 12 (Combustion Institute, Pittsburgh, 1969) 289
- Westenberg, A. A., and de Haas, N., "Relative Rate Constants for $O + HC\bar{O} \rightarrow OH + CO$ and $O + HCO \rightarrow H + CO_2$," J. Phys. Chem. 76, 2215 (1972)
- Westenberg, A. A., and Fristrom, R. M., "Methane-Oxygen Flame Structure. IV. Chemical Kinetic Considerations," J. Phys. Chem. 65, 591 (1961)
- Westenberg, A. A., and Fristrom, R. M., "H and O Atom Profiles Measured by ESR in C_2 Hydrocarbon- O_2 Flames," Symp. Combust. 10 (Combustion Institute, Pittsburgh, 1965) 473
- White, D. R., "Density Induction Times in Very Lean Mixtures of D_2 , H_2 , C_2H_2 , and C_2H_4 , with O_2 ," Symp. Combust. 11, (Combustion Institute, Pittsburgh, 1967) 147

- White, D. R., "Shock Tube Studies of Nitrogen Vibrational Relaxation and Methane Oxidation," Aerospace Res. Labs. (ARC), Wright-Patterson AFB, Ohio ARL 70-0107 Final Report (June 1970) U.S. NTIS Report AD 714072 (1970)
- Williams, A., and Smith, D. B., "The Combustion and Oxidation of Acetylene," *Chem. Rev.* 70, 267 (1970)
- Williamson, D. G., "The Reaction of $\Theta(^3P)$ with Dideuteroacetylene," *J. Phys. Chem.* 75, 4053 (1971)
- Williamson, D. G., and Bayes, K. D., "Reactions of Oxygen Atoms with Acetylene," *J. Phys. Chem.* 73, 1232 (1969)
- Wilson, W. E., Jr., "Activation Energies for Hydroxyl Radical Abstraction Reactions," *J. Chem. Phys.* 53, 1300 (1970)
- Wilson, W. E., Jr., "A Critical Review of the Gas-Phase Reaction Kinetics of the Hydroxyl Radical," *J. Phys. Chem. Ref. Data* 1, 535 (1972)
- Wiser, W. H., and Hill, G. R., "A Kinetic Comparison of the Combustion of Methyl Alcohol and Methane," *Symp. Combust.* 5 (Reinhold Publishing Corp., New York, 1955) 553
- Wong, E. L., and Potter, A. E., Jr., "Reaction Rates of Hydrogen, Ammonia, and Methane with Mixtures of Atomic and Molecular Oxygen," *J. Chem. Phys.* 39, 2211 (1963)
- Wong, E. L., and Potter, A. E., Jr., "Mass-Spectrometric Investigation of Reaction of Oxygen Atoms with Methane," *Can. J. Chem.* 45, 367 (1967)
- Wright, F. J., "Reactions of Θ Atoms with Isobutane," *J. Chem. Phys.* 38, 950 (1963)
- Wright, F. J., "The Reaction of Oxygen Atoms with Neopentane and Other Alkanes: Mechanism and Rates," *Symp. Combust.* 10 (Combustion Institute, Pittsburgh, 1965) 387
- Yamazaki, H., and Cvitanović, R. J., "Collisional Deactivation of the Excited Singlet Oxygen Atoms and Their Insertion into the CH Bonds of Propane," *J. Chem. Phys.* 41, 3703 (1964)
- Yantovskii, S. A., "Two-Stage Combustion of Explosive Mixtures I. The Temperature Zones of Ignition in Heptane-Air Mixtures at Pressures over 1 Atm," *Kinet. Catal.* 5, 27 (1964); tr. of *Kinet. Katal.* 5, 34 (1964)
- Yantovskii, S. A., "Two-Stage Combustion of Explosive Mixtures. II. Intensity of the First- and Second-Phase Ignition of Heptane with Air at Pressures Higher Than Atmospheric," *Kinet. Catal.* 5, 348 (1964); tr. of *Kinet. Katal.* 5, 399 (1964)
- Yantovskii, S. A., "Two-Stage Combustion of Explosive Mixtures. III. Kinetic Zones of Autoignition of Isooctane-Air Mixtures under High Pressures," *Kinet. Catal.* 7, 16 (1966); tr. of *Kinet. Katal.* 7, 21 (1966)
- Yantovskii, S. A., "Two-Stage Combustion of Explosive Mixtures. IV. Rate of Pressure Rise during the Cold-Flame Stage of Combustion of Binary Isooctane-n-Heptane Mixtures in Air," *Kinet. Catal.* 8, 437 (1967); tr. of *Kinet. Katal.* 8, 506 (1967)
- Young, R. A., Black, G., and Slanger, T. G., "Reaction and Deactivation of $\Theta(^1D)$," *J. Chem. Phys.* 49, 4758 (1968)
- Yoshizawa, Y., and Kawada, H., "A Shock-Tube Study on the Ignition Lag of Gaseous Fuels," *Bull. JSME* 16, 576 (1973)
- Zallen, D. M., "Spectroscopic and Langmuir Probe Studies of Intermediate Species in Shock Induced Methane Combustion," *Diss. Abstr. Int. B* 34, 3809 (1974)
- Zeelenberg, A. P., "Slow Oxidation of Hydrocarbons in the Gas Phase. II. Neopentane," *Rec. Trav. Chim. Pays-Bas* 81, 720 (1962)

- Zeelenberg, A. P., and Bickel, A. F., "Slow Oxidation of Hydrocarbons in the Gas Phase. Part I. Reactions during the Induction Period of Isobutane Oxidation," J. Chem. Soc. (London) 4014 (1961)
- Zimont, V. L., and Trushin, Yu. M., "Ignition Lag of Hydrocarbon Fuels at High Temperatures," Combust., Explos., Shock Waves 3, 51 (1967); tr. of Fiz. Gorenija i Vzryva 3, 86 (1967)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET		1. PUBLICATION OR REPORT NO. NBS SP-449	2. Gov't Accession No.	3. Recipient's Accession No.
4. TITLE AND SUBTITLE Chemical Kinetics of the Gas Phase Combustion of Fuels (A Bibliography on the Rates and Mechanisms of Oxidation of Aliphatic C ₁ to C ₁₀ Hydrocarbons and of Their Oxygenated Derivatives)		5. Publication Date October 1976		
7. AUTHOR(S) Francis Westley		6. Performing Organization Code		
9. PERFORMING ORGANIZATION NAME AND ADDRESS NATIONAL BUREAU OF STANDARDS DEPARTMENT OF COMMERCE WASHINGTON, D.C. 20234		8. Performing Organ. Report No. 10. Project/Task/Work Unit No. 3165520 3162425 3165150		
12. Sponsoring Organization Name and Complete Address (Street, City, State, ZIP) Office of Standard Reference Data, NBS, Washington D.C. 20234 Naval Sea System Command, Dept. of the Navy, Washington, D.C. 20360 Div. of Conservation, Research & Technology, Energy Research and Development Administration, Washington, D. C. 20545		11. Contract/Grant No. N0002475WR52286 E-(49-1)-3800		
15. SUPPLEMENTARY NOTES Library of Congress Catalog Card Number: 76-608282		13. Type of Report & Period Covered Final 1902-1975		
16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.) A reaction oriented list of references is provided for papers and reports containing rate data for gas phase reactions of combustion and oxidation of aliphatic saturated or unsaturated C ₁ to C ₁₀ hydrocarbons, alcohols, aldehydes, ketones, ethers, peroxides and their free radicals. The list also includes decomposition, disproportionation, atom transfer and recombination reactions of the oxygen containing species noted above. Pyrolytic reactions of hydrocarbons and their radicals are excluded. All the processes listed here have been reported to occur in the gas phase combustion of fuels. In addition, a list of critical reviews dealing with the reaction kinetics of the above processes and a list of papers dealing with generalized mechanisms of the same reactions are also included. More than 800 papers covering 540 reactions are listed. The period covered extends from 1902 through June 1975.				
17. KEY WORDS (six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons) Bibliography; chemical kinetics; combustion; free radicals; gas phase; hydrocarbons; oxidation; oxygen; oxygenated organic compounds; ozone.				
18. AVAILABILITY <input checked="" type="checkbox"/> Unlimited <input type="checkbox"/> For Official Distribution. Do Not Release to NTIS <input checked="" type="checkbox"/> Order From Sup. of Doc., U.S. Government Printing Office Washington, D.C. 20402, SD Cat. No. C13.10-449 <input type="checkbox"/> Order From National Technical Information Service (NTIS) Springfield, Virginia 22151		19. SECURITY CLASS (THIS REPORT) UNCL ASSIFIED	21. NO. OF PAGES 138	
		20. SECURITY CLASS (THIS PAGE) UNCLASSIFIED	22. Price \$2.00 Stock No. 003-003-	

get
a line on
science and
technology.
Subscribe to
DIMENSIONS

NBS

Whether you're in business, or a teacher, scientist, or consumer, you'll want to keep up with the latest developments in science and technology. DIMENSIONS/NBS, the monthly magazine from the Commerce Department's National Bureau of Standards, can help keep you informed. Every day at NBS, one of the nation's largest research laboratories, scientists seek new answers to a host of national problems, including energy conservation, product safety, metric conversion, and pollution abatement. Their findings, reported each month in DIMENSIONS/NBS, have a direct impact on our daily lives.

Subscription price: \$9.45 per year.
Order prepaid from the
Superintendent of Documents,
U.S. Government Printing Office,
Washington, D.C. 20402
SD Catalog No. C13.13

Important Additions

TO THE JOURNAL OF PHYSICAL AND CHEMICAL REFERENCE DATA

Two comprehensive reference volumes, each, like the Journal itself, published by The American Institute of Physics, The National Bureau of Standards and The American Chemical Society . . . your triple assurance of their accuracy, immediacy, and usefulness.

SUPPLEMENT NO. 1 TO VOLUME 2

"Physical and Thermodynamic Properties of Aliphatic Alcohols"

by R. C. Wilhoit and B. J. Zwolinski, *Thermodynamics Research Center, Department of Chemistry, Texas A&M University.*

The most exhaustive review and critical analysis of selected physical and thermodynamic properties of aliphatic alcohols that has been published. Coverage of the important properties of the liquid, vapor, and ideal gaseous states as well as pertinent solid state data necessary for equilibrium calculations ordinarily encountered in chemical and chemical engineering applications. All available quantitative data on each property for each aliphatic alcohol are fully documented and critically analyzed providing a "data bank" for the 640 monohydroxy alcohols in the carbon range of C₁ to C₅₀. Internally consistent tables of critical, standard, or selected "best" values are tabulated for each compound. Index included.

SUPPLEMENT NO. 1 TO VOLUME 3

"Thermal Conductivity of the Elements: A Comprehensive Review"

by C. Y. Ho, R. W. Powell, and P. E. Lilly, *1974 Thermophysical Properties Research Center, Purdue University.*

Comprehensive review of the world's thermal conductivity data presents recommended or estimated values for all 105 elements. Reliable thermal conductivity data for those elements which can

be used as standard reference materials to calibrate or check apparatus. Original data, specimen characterization and measurement information for 5200 sets of raw data. Detailed discussions for each element, review of the available experimental data and considerations by which the authors arrived at final assessments. Complete bibliographic citations for 1658 references. Only original sources have been used. All cited documents are available at TPRC in standard microfiche.

Special Issue Sales
American Chemical Society
1155 16th St., N.W., Washington, D.C. 20036

Please send _____ copies of the 420 page supplement to the Journal of Physical and Chemical Reference Data, Volume 2, "Physical and Thermodynamic Properties of Aliphatic Alcohols," at the prices checked below.

Members: Hard cover edition: \$33.00
Nonmembers: Hard cover edition: \$33.00
Members: Soft cover edition: \$10.00
Nonmembers: Soft cover edition: \$30.00

Check or money order must accompany order. \$1.00 extra for foreign postage and handling.

Name _____

Address _____

City _____ State _____ Zip _____

Please send _____ copies of the 796 page supplement to the Journal of Physical and Chemical Reference Data, Volume 3, "Thermal Conductivity of the Elements: A Comprehensive Review," at the prices checked below.

Members: Hard cover edition: \$60.00
Nonmembers: Hard cover edition: \$60.00
Members: Soft cover edition: \$25.00
Nonmembers: Soft cover edition: \$55.00



American Chemical Society

NBS TECHNICAL PUBLICATIONS

PERIODICALS

JOURNAL OF RESEARCH reports National Bureau of Standards research and development in physics, mathematics, and chemistry. It is published in two sections, available separately:

• Physics and Chemistry (Section A)

Papers of interest primarily to scientists working in these fields. This section covers a broad range of physical and chemical research, with major emphasis on standards of physical measurement, fundamental constants, and properties of matter. Issued six times a year. Annual subscription: Domestic, \$17.00; Foreign, \$21.25.

• Mathematical Sciences (Section B)

Studies and compilations designed mainly for the mathematician and theoretical physicist. Topics in mathematical statistics, theory of experiment design, numerical analysis, theoretical physics and chemistry, logical design and programming of computers and computer systems. Short numerical tables. Issued quarterly. Annual subscription: Domestic, \$9.00; Foreign, \$11.25.

DIMENSIONS/NBS (formerly *Technical News Bulletin*)—This monthly magazine is published to inform scientists, engineers, businessmen, industry, teachers, students, and consumers of the latest advances in science and technology, with primary emphasis on the work at NBS. The magazine highlights and reviews such issues as energy research, fire protection, building technology, metric conversion, pollution abatement, health and safety, and consumer product performance. In addition, it reports the results of Bureau programs in measurement standards and techniques, properties of matter and materials, engineering standards and services, instrumentation, and automatic data processing.

Annual subscription: Domestic, \$9.45; Foreign, \$11.85.

NONPERIODICALS

Monographs—Major contributions to the technical literature on various subjects related to the Bureau's scientific and technical activities.

Handbooks—Recommended codes of engineering and industrial practice (including safety codes) developed in cooperation with interested industries, professional organizations, and regulatory bodies.

Special Publications—Include proceedings of conferences sponsored by NBS, NBS annual reports, and other special publications appropriate to this grouping such as wall charts, pocket cards, and bibliographies.

Applied Mathematics Series—Mathematical tables, manuals, and studies of special interest to physicists, engineers, chemists, biologists, mathematicians, computer programmers, and others engaged in scientific and technical work.

National Standard Reference Data Series—Provides quantitative data on the physical and chemical properties of materials, compiled from the world's literature and critically evaluated. Developed under a world-wide program coordinated by NBS. Program under authority of National Standard Data Act (Public Law 90-396).

NOTE: At present the principal publication outlet for these data is the *Journal of Physical and Chemical Reference Data* (JPCRD) published quarterly for NBS by the American Chemical Society (ACS) and the American Institute of Physics (AIP). Subscriptions, reprints, and supplements available from ACS, 1155 Sixteenth St. N.W., Wash. D. C. 20056.

Building Science Series—Disseminates technical information developed at the Bureau on building materials, components, systems, and whole structures. The series presents research results, test methods, and performance criteria related to the structural and environmental functions and the durability and safety characteristics of building elements and systems.

Technical Notes—Studies or reports which are complete in themselves but restrictive in their treatment of a subject. Analogous to monographs but not so comprehensive in scope or definitive in treatment of the subject area. Often serve as a vehicle for final reports of work performed at NBS under the sponsorship of other government agencies.

Voluntary Product Standards—Developed under procedures published by the Department of Commerce in Part 10, Title 15, of the Code of Federal Regulations. The purpose of the standards is to establish nationally recognized requirements for products, and to provide all concerned interests with a basis for common understanding of the characteristics of the products. NBS administers this program as a supplement to the activities of the private sector standardizing organizations.

Consumer Information Series—Practical information, based on NBS research and experience, covering areas of interest to the consumer. Easily understandable language and illustrations provide useful background knowledge for shopping in today's technological marketplace.

Order above NBS publications from: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Order following NBS publications—NBSIR's and FIPS from the National Technical Information Services, Springfield, Va. 22161.

Federal Information Processing Standards Publications (FIPS PUBS)—Publications in this series collectively constitute the Federal Information Processing Standards Register. Register serves as the official source of information in the Federal Government regarding standards issued by NBS pursuant to the Federal Property and Administrative Services Act of 1949 as amended, Public Law 89-306 (79 Stat. 1127), and as implemented by Executive Order 11717 (38 FR 12315, dated May 11, 1973) and Part 6 of Title 15 CFR (Code of Federal Regulations).

NBS Interagency Reports (NBSIR)—A special series of interim or final reports on work performed by NBS for outside sponsors (both government and non-government). In general, initial distribution is handled by the sponsor; public distribution is by the National Technical Information Services (Springfield, Va. 22161) in paper copy or microfiche form.

BIBLIOGRAPHIC SUBSCRIPTION SERVICES

The following current-awareness and literature-survey bibliographies are issued periodically by the Bureau: **Cryogenic Data Center Current Awareness Service**. A literature survey issued biweekly. Annual subscription: Domestic, \$20.00; Foreign, \$25.00.

Liquified Natural Gas. A literature survey issued quarterly. Annual subscription: \$20.00.

Superconducting Devices and Materials. A literature survey issued quarterly. Annual subscription: \$20.00. Send subscription orders and remittances for the preceding bibliographic services to National Bureau of Standards, Cryogenic Data Center (275.02) Boulder, Colorado 80302.

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Washington, D.C. 20234

OFFICIAL BUSINESS

Penalty for Private Use, \$300

POLSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-215



SPECIAL FOURTH-CLASS RATE
BOOK



75 YEARS
NBS
1901-1976