[illegible]

Dr. [illegible]
[illegible]
Oxford [illegible]
Oxford [illegible], Massachusetts 02142

March 1970

Dear Contributor:

This is the thirteenth microwave spectroscopy information letter and is being sent to those who contributed:

1. ALIGARH MUSLIM UNIVERSITY
Department of Physics
Aligarh (U.P.), India
V.M. Rao

C_3H_3N (CH_2CHCN)	Vinyl cyanide	V.M. Rao Y. Kumar	Excited states.

2. UNIVERSITY OF ALLAHABAD
Department of Physics
Allahabad, India
Prof. Krishnaji

CH_2Br_2	Methylene Bromide	A.S. Rajput	Spectrum assigned χ's evaluated, tentative structure proposed Paper communicated
CF_2:CFCl	Chlorotrifluoro-ethylene	S. Chandra	Spectrum assigned, χ's evaluated, tentative structure proposed Paper communicated
$C_2H_5NO_2$	Nitroethane	G.K. Pandey	Spectrum assigned Paper communicated
m-C_6H_4FCl	meta-chlorofluoro-benzene	Srivastava and Kirty	Quadrupole HFS resolved, Cl^{37} spectrum assigned

3. UNIVERSITY OF BOLOGNA
Instituto Chimico "G. Ciamician"
Bologna, Italy
P.G. Favero

$COCl_2$	Carbonyl chloride	Note in preparation

HClO	Hypochlorous acid		Millimeter wave spectrum of isotopic species.
PF_2Cl	Phosphorus monochloro-difluoride		Assignment in progress.

4. UNIVERSITY OF BRISTOL
School of Chemistry
Bristol, England
A. Peter Cox

CH_3NO_2	Nitromethane	S. Waring	Isotopic work in progress.
CH_3NO_3	Methyl nitrate	S. Waring	Structure complete.
$C_4H_9NSSi[(CH_3)_3SiNCS]$	Trimethyl silicon isothiocyanate		Assigned
$C_4H_9NOSi[(CH_3)_3SiNCO]$	Trimethyl silicon isocyanate		Assigned
C_5H_5In	Cyclopentadienyl Indium	P.N. Wardle	Work in progress.
C_5H_5NNiO $[C_5H_5NiNO]$	Cyclopentadienyl nitrosyl nickel		Structure published. Vibrational paper in press (see M.J. Whittle, Manchester).
C_5H_5NOPt $[C_5H_5PtNO]$	Cyclopentadienyl nitrosyl platinum	C. Roberts	Note prepared.
C_5H_5Tl	Cyclopentadienyl thallium	C. Roberts	Structure complete. Vibrational paper in manuscript.
HNO_2	Nitrous acid	(A.H. Brittain (D.J. Finnigan	Structure in manuscript. Centrifugal distortion nearly complete.
N_2O_3	Dinitrogen trioxide	(D.J. Finnigan (A.C. Morris	Quadrupole and Stark analysis in progress.

5a. UNIVERSITY OF CALIFORNIA
Chemistry Department
Berkeley, California
W.I. Gwinn

OCS	Carbonyl sulfide	S. Brown	Energy transfer and relaxation coherence experiments. Rise time and oscillation of the density matrix during pumping experiments.

5b. UNIVERSITY OF CALIFORNIA
Chemistry Department
Santa Barbara, California
David Harris

$C_3H_4O_2$ (H_2C-CO-CH_2-O)	Oxetanone	J. Gibson	Nearly assigned.
C_4H_8SO ($CH_2(CH_2)_3$-S-O)	Tetramethylene sulfoxide	P. Baron	Assigned.

6. UNIVERSITY OF COPENHAGEN
Chemical Physics Department
Copenhagen, Denmark
Børge Bak/Lise Nygaard

C_3H_3NS	Thiazole		Writing up.
$C_3H_4N_2$	Pyrazole		3(5)-D species assigned
C_6H_5ClO	4-chlorophenol	N. Wessel Larsen	Assigned.
C_6H_5FO	4-fluorophenol	N. Wessel Larsen	Assigned.
$C_6H_5NO_2$	Nitrobenzene	Jens H. Høg	Force field calc. of centrif. dist. const. Writing up.
C_6H_6O	Phenol-OD	N. Wessel Larsen	Dipole moment. 1 exc. tors. state assigned.
	3(5)-D-phenol	N. Wessel Larsen	Dipole moment.
C_7H_5N	Benzonitrile	J. Casado G.O. Sørensen	Revised r_s-structure. Force field calc. of centrif. dist. const. Writing up.

7. UNIVERSITY OF FREIBURG
Physikalisches Institut
Freiburg, West Germany
H.D. Rudolph

C_2H_3NS (CH_3SCN)	Methyl-thiocyanate	H. Schleser	r_s-structure, EQUFS dipole moment, paper in preparation.

C_2H_3NS (CH_3SCN)	d_3-methyl-thiocyanate	H. Heimburger	Work completed
C_2H_6S ($(CH_3)_2S$	Dimethyl-sulfide	A. Trinkaus	Excited torsional state enlarged report in preparation
C_2H_8Si ($(CH_3)_2SiH_2$	Dimethyl-silane	"	"
C_7H_8 ($CD_3C_6H_5$)	d_3-toluene	W.A. Kreiner	Excited internal rotati states, barrier potentia
C_7H_8 ($CH_3C_6H_4D$)	d_1-toluene	W.A. Kreiner B. Tan	Work commenced.
$C_7H_6F_2$ ($CH_3C_6H_3F_2$)	Difluoro-toluene	I. Botskor	Lines measured, work in progress.
C_8H_{10} ($CH_3CH_2DC_6H_4$)	d_1-ortho-xylene	K. Walzer I. Krutzik	Spectra assigned CH_3 conformation
C_8H_7N ($CH_3C_6H_4CN$)	p-methyl-benzonitrile	M. Römheld	m = 0 spectrum, band heads.

8. FREI UNIVERSITÄT BERLIN
II. Physikalisches Institut
Berlin, Germany
R. Honerjäger

FIn (InF)	Indium-monofluoride	F. Lovas T. Törring	Rotational spectrum, hyperfine structure. Z. Naturforsch. 24a, 63 (1969).
PbTe	Lead-monotelluride	E. Tieman J. Hoeft B. Schenk	Rotational spectrum. Z. Naturforsch. 24a, 78 (1969).
InI	Indium-monoiodide	B. Schenk	Quadrupole coupling nearly complete.
GeO	Germanium-monoxide	J. Hoeft F. Lovas E. Tiemann	Rotational spectrum, dipole moments. Z. Naturforsch. 24a, 1217 (1969).
GeS	Germanium-monosulfide		
OSn (SnO)	Tin-monoxide	R. Tischer T. Törring	Rotational spectrum, dipole moments. Z. Naturforsch. 24a, 1222 (1969).
SSn (SnS	Tin-monosulfide		
OPb (PbO)	Lead-monoxide		
PbS	Lead-monosulfide		

SiS (?)	Silicium-monosulfide		Rotational spectrum, dipole moment. Z. Naturforsch. 24a, 1820 (1969).
SeSn (SnSe) SnTe	Tin-monoselenide Tin-monotelluride		Dipole moments. Z. Naturforsch. 24a, 1843 (1969).
GeSe GeTe PbSe PbTe	Germanium-monoselenide Germanium-monotelluride Lead-monoselenide Lead monotelluride		Dipole moments, to be in Z. Naturforsch.
AgF CuF	Silver-monofluoride Copper-monofluoride	J. Hoeft F. Lovas E. Tiemann T. Torring	Rotational spectrum, hyperfine structure, dipole moments. Z. Naturforsch. 25a, 35 (1970).
AgI	Silver-monoiodide		Rotational spectrum, hyperfine structure.
AlF FGa (GaF) FIn (InF)	Aluminium-monofluoride Gallium-monofluoride Indium-monofluoride		Rotational spectrum, hyperfine structure, dipole moments.
BaO	Barium-oxide		Rotational spectrum.

9. GEORGIA INSTITUTE OF TECHNOLOGY
School of Physics
Atlanta, Georgia
T.L. Weatherly/Q. Williams

SCl_2	Sulfur Dichloride	W.A. Little	Manuscript in preparation.

10. UNIVERSITY OF GLASGOW
Department of Chemistry
Glasgow, Scotland
J.K. Tyler

C_6H_8O	Cyclohex-2-en-1-one	S.A. Manley	In press.
$C_3H_6N_2$	Dimethylcyanamide	S.A. Manley	Ground state assigned for normal and fully deuterated species. Dipole moment measured. Barrier in progress.

C_6H_6FN	p-Fluoroaniline	R.L. Mc Neil A. Bertie	Note in press
C_6H_6ClN	p-chloroaniline	V. Scorle	^{35}Cl and ^{37}Cl species assigned.
C_6H_6BrN	p-bromoaniline	R.G. Cameron	^{79}Br and ^{81}Br species assigned.
$C_5H_4O_2$	Pyran-4-one	J.N. MacDonald	r_s structure complete.
C_5H_4OS	Pyran-4-thione	S.A. Manley	^{34}S, ^{18}O and ring. deuterated species complete.
C_3H_3NO	Oxazole and Isoxazole	A. Wardley	^{14}N principal quadrupol tensor components found
C_3H_3NS	Isothiazole	A. Wardley	^{14}N principal quadrupol tensor components in progress.
$C_4H_3NO_2$	Maleimide	A. Wardley	In progress.

11. GOVERNMENT CHEMICAL INDUSTRIAL RESEARCH INSTITUTE
2nd Division
Tokyo, Japan
C. Matsumura

$C_3H_6S_3$	Trithian	C. Matsumura	Vibrational states D-, C-, ^{34}S- species assigned.
Cl_3Sb ($SbCl_3$)	Antimony Trichloride	C. Matsumura	Several isotopic combinations being investigated. Studying quadrupole interaction.
F_3Sb (SbF_3)	Antimony Trifluoride	H. Takeo	Manuscript in preparation.

12. HARVARD UNIVERSITY
Department of Chemistry
Cambridge, Mass.
E. B. Wilson

C_5H_8 ($CH_3CH_2CH_2CCH$)	1-Pentyne	F. Wodarczyk	Ground state and satellites assigned for two rotamers.
CH_4Se	Methane selenol	C. Thomas	Writing up.

C_3H_6O (CH_3CH_2CHO)	Propanal (Propionaldehyde)	D. Rao	Excited state satellites assigned.
$C_2H_5NO_3$ ($HOCH_2CH_2NO_2$)	2-Nitroethanol	M. Fuller	In progress.
$C_2H_4F_3R$ (CF_3CH_2I, Br_2)	2,2,2-Trifluoroethyl-	I. Weeren	Ground state lines assigned.
$C_7H_6O_2$	6-Hydroxy-6-methyl-Fulvene	U. Pickett	Ground state lines assigned.
C_2H_3ClO	Chloroacetaldehyde	R. Ford	Two rotamers assigned.
CHN CIN	Hydrogen cyanide cyanogen iodide	J. Cohen	Energy transfer experiment

13. HEWLETT-PACKARD COMPANY
Scientific Instruments Group
Palo Alto, Calif.
L.H. Scharpen/T.W. Harrington

C_7H_7F ($C_6H_5CH_2F$)	Benzyl fluoride	L. Scharpen	Search for second rotamer.
$C_4H_6O_2$ ($CH_3CH{=}CHCOOH$)	Crotonic acid	"	-COOH and -COOD low resolution; two conformers identified; search in progress.
$C_5H_6O_2$	Cyclopent-2-ene-1-one	L. Scharpen with A. Legon	Out-of plane bending satellite intensities; almost complete
$C_6H_{11}F$	Cyclohexyl fluoride	L. Scharpen	Axial-equatorial energy; manuscript prepared.
C_6H_9Br	3-bromocyclohexene	L. Scharpen	Low-resolution: two conformers identified.
C_6H_7I	Benzyl iodide	L. Scharpen	Low-resolution; two conformers; manuscript in preparation.
C_6H_7Br	Benzyl bromide	L. Scharpen	Low-resolution; two conformers; manuscript in preparation.
C_4H_9I	1-iodobutane	L. Scharpen	Low-resolution; 3 rotamers identified.

$C_5H_{11}I$	1-Iodopentane	L. Schwegler	Manuscript in preparation.

14. UNIVERSITY OF KANSAS
Department of Chemistry
Lawrence, Kansas
Marlin D. Harmony

C_5H_7Cl	1-chlorobicyclo [1.1.1]pentane		Manuscript in preparation.
$CH_6N_2(NH_2\text{-}NHCH_3)$	Methyl hydrazine		Most stable rotamer completed
C_2H_5NO	N-methyl formamide		Temporarily abandoned.
$C_4H_9N(C_4H_7NH_2)$	Cyclobutylamine		Temporarily abandoned.

15. UNIVERSITY OF KIEL
Institut für Physikalische Chemie
23 Kiel, Germany
Helmut Dreizler

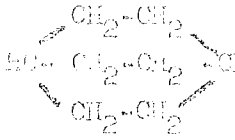
C_3H_5N (CH_3CH_2CN)	Ethyl Cyanide	Mäder	Torsion-vibration interaction.
$C_2H_6S_2$ $(CH_3SS\ CD_3)$	Dimethyldisulfide-d_3	Kuhler	Torsion-vibration interaction.
CH_3SCl	Methanesulfenylchloride	Guarnieri	In Press, torsion vibration interaction.
C_2H_3SN (CH_3SCN)	Methylthiocyanate	Dreizler	Torsion-vibration interaction.
$C_2H_6O_2$ (CH_3OOCH_3)	Dimethylperoxide Dimethylperoxide-d6	Schwarz Sutter	In work.
$C_2H_4O_2(CH_3OCHO)$	Methylformate	Müller	Torsional excited state.
$C_2H_6O((CH_3)_2O)$	Dimethyl ether	Legell	Torsion-torsion-interaction.
$C_3H_6O((CD_3)_2CO)$	Acetone - d6	Legell	Torsion-torsion-interaction.
$C_2H_6N_2O((CH_3)_2NNO$	Dimethylnitrosamine	Andresen	In work.
C_5H_6S $(CH_3C(CH)_2S$	2-Methylthiophene	Andresen	Dipole moment.

15. [illegible]

HCNO	Fulminic acid	L. Winnewisser B. P. Winnewisser	Millimeter- and submillimeter wave measurements of excited vibrational states. Spectra assigned. Isotopic Species.
DCNO	Deutero-fulminic acid	M. Winnewisser F. Mie	Millimeter- and sub-Millimeter wave spectrum in progress.
HCNO and DCNO		F. Mie	Precision dipole moments of excited vibrational states.

16. KYUSHU UNIVERSITY
Department of Chemistry
Fukuoka, Japan
Eizi Hirota

CH_2F_2, CD_2F_2	Methylene fluoride	E. Hirota T. Tanaka	Centrifugal distortion; In press (J.Mol. Spectr.
C_3H_5Cl	Allyl chloride	E. Hirota	Paper submitted to J.Mol. Spectry.
C_3H_8O $[(CH_3)_2CHOH]$	Isopropyl alcohol	E. Hirota	In press (J. Mol. Spectry.).
C_4H_8	Cis-butene-2	E. Hirota	In press (J. Mol. Spectry.).
C_5H_8 [CH =CHCH CH=CH]	1, 4-Pentadiene	E. Hirota	One rotamer assigned.
ClNS (NSCl)		S. Mizumoto	Stark effect and centrifugal distortion; work in progress.
FNO_2	Nitryl fluoride	T. Tanaka	In press (J. Mol. Spectr.
F_3P (PF_3)	Phosphorus trifluoride	E. Hirota	In press (J.Mol.Spectry. ℓ-type resonance, work in progress.

O_2	Oxygen	T. Amano	Manuscript in preparation.
O_3	Ozone	T. Tanaka	In press (J.Mol.Spectr.
C_3H_6 ($CH_3CH{=}CH_2$)	Propylene	E. Hirota	In press (J.Mol.Spectr.
$C_8H_{13}F$ 	1-Fluoro-bicyclo [2,2,2] octane	E. Hirota	Assigned.

17. UNIVERSITÉ LAVAL
Chemistry Department
Quebec, Canada
P. Buckley

C_3H_5NO ($NCCH_2CH_2OH$)	2-cyanoethanol		Temporarily abandoned.
$C_3H_8O_2$ ($CH_3OCH_2CH_2OH$)	2-methoxyethanol	M. Brocher	In progress.
OCS	rare gas mixtures	J. Weber	Line shape studies.

18. UNIVERSITY COLLEGE LONDON
Department of Chemistry
London, England
D.J. Millen

NOBr	Nitrosyl bromide	D. Mitra	Manuscript prepared.
TeF_5Cl	Tellurium chloride pentafluoride	A.C. Legon	Spectrum interpreted.
HOCl	Hypochlorous acid	D. Lister	Isotopic species being studied.
C_5H_6O	2-cyclo-pentene-one	D. Chadwick A.C. Legon	Vibrational states analysed and planarity established.
CH_2Br_2	Methylene bromide	D. Chadwick	Spectrum assigned Manuscript in preparation.
$C_{10}H_{15}CH$	Adamantyl cyanide	D. Chadwick A. Legon	Spectrum of isotopic species studied.

NH_2Cl	Chloramine	D. Lister	Spectrum assigned.

19. LOUISIANA STATE UNIVERSITY
Physics Department
New Orleans, La.
E.L. Beeson, Jr.

$C^{35}Cl_2F_2$	Dichlorodifluoro-methane	Shu-Ming Hu Chun-Chung Chan	Manuscript in preparation. Centrifugal distortion nearly complete.
C_3H_7N	Cis-propylene imine	R. Schmidt	Manuscript in preparation.

20. UNIVERSITY OF LOUVAIN
Héverlé-Louvain
Belgium
M. de Hemptinne

$SO_2(^{32}S^{16}O^{18}O)$	Sulfur Dioxide	R. Van Riet G. Steenbeckeliers	Spectrum assigned for ground- and excited states.
$SO_2(^{x}S^{y}O^{z}O)$	Sulfur Dioxide	R.Van Riet G. Steenbeckeliers	Spectrum assigned. Distortion up to second order.
H_2O (HDO, D_2O)	Heavy Water	G. Steenbeckeliers	Spectrum assigned. Distortion up to 3d order.
$C_2H_3Br(CH_2{=}CHBr)$	Vinyl bromide	D. deKerckhove	Ground state assigned (a and b transitions) r_s structure. Quadrupole coupling up to second order.
$C_2H_3Br(CH_2{=}CHBr)$	Vinyl bromide	J. Maroor	Excited states investigated for dipole moment along a- and b- axes.
C_2H_6O (CH_3-CH_2-OH)	Ethyl alcohol	J.P. Culot	Spectrum assigned for different isotopic species. V_3 barrier, from ground state A/E splittings. r_s structure nearly complete (TRANS isomer).

21. UNIVERSITY OF MANCHESTER
The Physical Laboratories
Manchester, England
J.G. Baker

SiH_3NCO	Silyl isocyanate	J.G. Baker	Excited vibration.
CH_2DOH	Methanol - dl	J.G. Baker	Mm. Spectrum.
F_3P	Phosphorus trifluoride	R.J. Bradley	Excited vibrations.
C_5H_5In	Cyclopentadienyl indium	M.J. Whittle	Excited vibrations.
C_5H_5Tl	Cyclopentadienyl thallium	M.J. Whittle	" "
Br_3P	Phosphorus tribromide	B. Weiss	Assignment in progress
$C_{12}H_{10}O$	Diphenyl ether	B. Weiss	Assignment in progress.

22. UNIVERSITY OF MARYLAND
Institute for Molecular Physics
College Park, Maryland
L.C. Krisher

$C_2H_4O_2(CH_3COOH)$	Acetic acid	E. Saegebarth L. Krisher	E spectrum assigned.
C_2H_5NO	Acetamide	L. Krisher	Temporarily abandoned.
$C_5H_4O_3$	Citraconic anhydride	S. Wolf	In progress.
$C_3H_4N_2O$	Methylfurazan	E. Saegebarth	In press.
C_3H_5FO	Fluoroacetone	E. Saegebarth L. Krisher	In press.

23. [illegible]
McDonnell Nuclear Laboratory
St. Louis, Missouri
J.E. Wollrab

$C_2H_2BrN_2$ (CH_2BrCN_2)	Methylbromodiazirine		Complete.
$BrFO_2S$ (SO_2FBr)	Sulfurylfluoridebromide	J.E. Wollrab R.Reed R. Lovejoy	Assigned.

24. MICHIGAN STATE UNIVERSITY
Chemistry Department
East Lansing, Michigan
R.H. Schwendeman

C_4H_6O (CH_2CH_2CHCHO)	Cyclopropyl carboxaldehyde	H. Volltrauer	Manuscript in preparation.
C_4H_5FO (CH_2CH_2CHCOF)	Cyclopropylcarboxylic acid fluoride	H. Volltrauer	Manuscript in preparation.
C_5H_8O ($CH_2CH_2CHCOCH_3$)	Methylcyclopropyl ketone	P. Lee	Nearly complete.
C_5H_8 ($CH_2CH_2CHCHCH_2$)	Vinylcyclopropane	E. Codding	Nearly complete.
$C_3H_4O_2$ ($CH_2OCHCHO$)	Glycidaldehyde	P. Manor	Nearly complete.
C_3H_7NO ($HCON(CH_3)_2$)	Dimethylformamide	A. Brittain	Assigned.
ClF_2P (PF_2Cl)	Chlorodifluorophosphine	A. Brittain	Complete.
BrF_2P (PF_2Br)	Bromodifluorophosphine	A. Brittain	In progress.

25. UNIVERSITY OF MICHIGAN
Chemistry Department
Ann Arbor, Michigan
R.L. Kuczkowski

BF_2H_4P (F_2HPBH_3)	Difluorophosphine Borane	J. Pasinski	6 isotopic species assigned.
CH_3BP	Methylphosphine Borane	P. Bryan	8 isotopic species assigned.

$C_3H_{12}BP$	Trimethylphosphine boron	P. Bryan	Stark and Zeeman [illegible]
$C_3H_9BF_3N$	Trimethylamine boron trifluoride	P. Bryan	4 isotopic species assigned.
N_2O_3	Dinitrogen trioxide	R. Kuczkowski	Internal rotation analysis.

26. MONASH UNIVERSITY
Chemistry Department
Clayton, Victoria
R.D. Brown

C_2H_3NO	Acetonitrile-N-oxide	I. Gillard	Paper submitted
$C_4H_4N_2$	Pyrimidine	G. Blackman	Quadrupole hyperfine and dipole moment; paper submitted
$C_3H_4N_2$	Pyrazole	" "	Quadrupole hyperfine
NO_2	Nitrogen dioxide	P Godfrey	Zeeman spectrum measured
ClO_2	Chlorine dioxide	" "	Zeeman spectrum measured
$C_6H_5N_2O$	Benzoxadrazole	G. Mohay	Paper in preparation
C_6H_6	3,4-dimethylene-cyclobutene	B. Hart	Isotopic studies continuing
C_6H_6	Fulvene	J. Kent	Isotopic studies continuing
S_2Cl_2	Sulphur monochloride	P. Blackburn	Lines measured
C_8H_8	Styrene	M. Fuller	Work temporarily discontinued
C_8H_7F	Fluorostyrene		
C_5H_5NO	Pyridine-N-oxide	W. Garland	Work started.

27. UNIVERSITY OF NANCY
Laboratoire de Chimie Theorique
Nancy, France
J. Barriol/G. Roussy

C_3H_7N ($CH_2=CHCH_2NH_2$)	Allylamine	G. Roussy	-Cis isomer assigned -Gauche in progress

C_4H_3N (CH_2=C=CHCN)	Cyanoallene	J. Morrison	[illegible]
C_3H_3Cl (CH_2=C=CHCl)	Chloroallene	J. Dennison	Work continued
C_3H_3F (CH_2=C=CHF)	Fluoroallene	J. Dennison	Work continued

28. NATIONAL BUREAU OF STANDARDS
Molecular Spectroscopy Section
Washington, D.C.
W. H. Kirchhoff

C_2HBF_2 (F_2B-C≡C-H)	Ethynyl difluoro borane	Lafferty	D, B^{10}, B^{11} species assigned.
C_4H_6O	Cyclopentene oxide	Lafferty	Manuscript in preparation.
$C_4H_{10}Si$	Silacyclopentane	Lafferty, Durig	All heavy atom substitution, Si hydrogen substitution manuscript in preparation.
C_3H_8Si	Silacyclobutane	Lafferty Pringle	Manuscript in preparation
FCN	Cyanogen fluoride	Lafferty	Waiting for high resolution IR before publication.
C_4H_6S	2,5 dihydrothiophene	Lafferty Greenhouse	Manuscript in preparation.
C_4H_6S	1,2 dihydrothiophene	Lafferty Greenhouse	Manuscript in preparation.
H_2O^{18}	Water	Johnson	$5_{2,3} \rightarrow 6_{1,6}$ transition observed. In press.
SF_2	Sulfur difluoride	Johnson Kirchhoff	Centrifugal distortion Manuscript in preparation
CF_2	Carbon difluoride	Powell Kirchhoff	Centrifugal distortion Manuscript in preparation
ClF_5	Chlorine pentafluoride	Kirchhoff	Manuscript in preparation.
OCS	Carbonyl sulfide	Maki	$O^{18}C^{13}S$ excited vibrational states.

29. STATE UNIVERSITY OF NEW YORK
Physics Department
Buffalo, New York
T.D. Somers

C_3H_7Br	Normal propyl bromide		Paper in preparation.
C_3H_7I	Normal propyl Iodide		Paper in preparation.

30. UNIVERSITY COLLEGE OF NORTH WALES
Chemistry Department
Bangor, Caerns
J. Sheridan

C_3H_5FO	Propionyl fluoride	O.L. Stiefvater	Double-resonance assignments of C^{13}-species and additional vibration state of cis-form. Gauche-form: Internal rotation of CH_3-group and uc - transitions of excited states.
$C_3H_6O_2$	Propionic acid	O. L. Stiefvater	Manuscript in preparation.
C_4H_8O	Isobutyr-aldehyde	O.L. Stiefvater	Analysis of gauche satellite spectra continuing. Search for trans-form in progress.
C_4H_7FO	Isobutyryl fluoride	O.L. Stiefvater T.D. Summers	Analysis of gauche spectrum continuing.
$C_2H\ Br$	Bromo-acetylene	H. Jones O.L. Stiefvater	Work completed Manuscript in preparation.
$C_2H_2N_2S$	2,4-thiadiazole	D. Norbury	Assignment: nuclear coupling constants.
C_3H_4S	Propargyl mercaptan	K. Bolton	Two states assigned; tunnelling splittings and direct tunnelling transition observed: note in press (Spectrochim.Acta) refinement continuing.

[illegible]	[illegible]	N.L. Owen	Search for second rotamer in progress.
[illegible]	Dimethyl carbonate	N.L. Owen	Work continuing; many lines measured.
C_7H_7FO	p-Fluoroanisole	N.L. Owen	Tentative assignment.
C_3H_4O C_3H_5OH	Propargyl alcohol	R. Penn	mm wave spectra. Refinement of constants
C_3H_6O	Cyclopropanol	J.N. Macdonald	Assignment of ground state: lines of low-lying vibrational state being investigated.
C_4H_5NO	5-Methyl isoxazole	J.N. Macdonald	Many lines measured: internal rotor splittings.

31. UNIVERSITY OF OSLO
Chemistry Department
Oslo, Norway
K.M. Marstokk/H. Møllendal

C_3BrN (BrCCCN)	Bromocyanoacetylene	T. Bjorvatten	Manuscript in preparation.
C_3ClN (ClCCCN)	Chlorocyanoacetylene	T. Bjorvatten	
C_3IN (ICCCN)	Iodocyanoacetylene	T. Bjorvatten	
C_4HCl (HCCCCCl)	Monochlorodiacetylene	A. Bjørseth	In press.
C_2BrCl (BrCCCl)	Chlorobromoacetylene	A. Bjørseth	
C_2ClI (ICCCl)	Chloroiodoacetylene	A. Bjørseth	
C_4H_5N ($H_2C{=}C(CN)CH_3$)	2-cyanopropene	A. Bjørseth	Spectrum assigned.
$C_2H_4O_2$ ($H_2C(OH)CHO$)	Glycolaldehyde	H. Møllendal	In press.

$C_2H_3O_2$ ($CH_2C(=O)OH$)	[illegible]	R. Kewley	4 isotopic species now submitted.
$C_2H_4O_2$ ($HCOCH_2OH$)	Glycolaldehyde	R. Kewley	One gauche form assigned.

32. PENNSYLVANIA STATE UNIVERSITY
Chemistry Department
University Park, Pa.
L. Peter Gold

$C_2H_2N_2Se$ (CH-N-N=CH-Se)	1,2,4-selenodiazole	W. Krugh D. Levine	Isotopic species in progress
CH_5As (CH_3AsH_2)	Methyl arsine	D. Levine	Normal species assigned quadrupole and internal rotation analysis almost complete. Isotopes in progress.
C_2H_7As ($(CH_3)_2AsH$)	Dimethyl arsine	D. Levine	Assigned; quadrupole and internal rotation analysis in progress.
CH_2N_4 (CH=N-N=N-NH)	Tetrazole	W. Krugh	In progress.

33. PRINCETON UNIVERSITY
Chemistry Department
Princeton, New Jersey
V. W. Laurie

C_2H_7N	Ethylamine	Y.S. Li	Two conformers assigned.
SiH_3F	Fluorosilane	B. Ravid	New assignment.
C_7H_9Cl	Chloro nor-tricyclene	W. Stigliani	Assigned.

34. QUEEN'S UNIVERSITY
Chemistry Department
Kingston, Ontario
R. Kewley

$C_8H_{15}N$ ($C_7H_{15}CN$)	n-heptyl cyanide	R. Kewley	Search in progress.

C_2H_3NO	Methyl isocyanate	R.F. Curl M. Jones	Internal rotation analysis progressing.
C_3ClH_3O	Acryloyl chloride	D. Mc Naught	Trans conformer nearly completed.
C_4H_6O	Divinyl ether	C. Hirose	G_g conformer Q branch assignment resolved stark of another conformer.
F_2Ge	Germanium difluoride	H. Takeo	Resolved stark line.

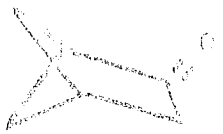
36. SAGAMI CHEMICAL RESEARCH CENTER
Kanagawa-Ken
Japan
Y. Morino

$C_2H_4O_2S$ ($CH_2CH_2SO_2$)	Ethylene episulfone	Y. Nakano	In press (Bull. Chem. Soc. Japan).
CNO	NCO radical	S. Saito	In press (J. Mol. Spectry).
$C_3H_3F_3$ ($CF_3CH=CH_2$)	3,3,3-trifluoro-propene	S. Saito	3 isotopes done.
ClNS (NSCl)	Thionitrosyl chloride	T. Beppu	Manuscript in preparation.

37. SAHA INSTITUTE OF NUCLEAR PHYSICS
Microwave Spectroscopy Department
Calcutta, India
D.K. Ghosh

C_3H_7NO [$(CH_3)_2$ N CHO]	Dimethyl formamide	A. Chatterjee R. Nandy D.K. Ghosh	Spectrum recorded and initial assignment made.

[illegible]
[illegible]
[illegible]
[illegible]

$CH_3SS_2(CH_2SSO_2CF)$	[illegible]	F. Hooker	Search initiated.
C_6H_8O 	Norcadie [2.2.1] [illegible]	M. Hershberger	Search initiated.

[illegible]. SWISS FEDERAL INSTITUTE OF TECHNOLOGY
Laboratory of Physical Chemistry
Zurich, Switzerland
Dr. H. Günthard

$C_2H_3NO_2$ (CH_2=$CHNO_2$)	Nitroethylene	P. Nösberger	Excited states of deuterated species.
C_3H_5I (CH_2=$CICH_3$)	2-Iodopropene	A. Bauder	First excited torsional state.
$C_3H_4N_2O_2$ ($CH_2CNCH_2NO_2$)	Nitroacetonitrile	M. Ribeaud	Spectrum measured.
C_3H_7N (CH_3CH=NCH_3)	N-Methylethylidenimine	J. Meier	Normal and one deuterated species assigned.
C_6H_6O (C_6H_5OH)	Phenol	E. Mathier	X-band spectrum, assigned.
$C_{10}H_8$	Azulene	P. Christen	Excited states.

40. TATA INSTITUTE OF FUNDAMENTAL RESEARCH
Chemical Physics
Bombay, India
S.D. Sharma/S. Doraiswamy

$C_6H_4N_2$	2-Cyanopyridine	S.D. Sharma S. Doraiswamy	Spectrum observed tentative assignment made.
C_5H_4FN	2-Fluoropyridine	S.D. Sharma S. Doraiswamy	Spectrum observed work in progress.
$VOCl_3$	Vanadium oxytrichloride	S.D. Sharma S. Doraiswamy	Preliminary work done.

41. UNIVERSITY OF TEXAS AT AUSTIN
Chemistry Department
Austin, Texas
J.E. Boggs

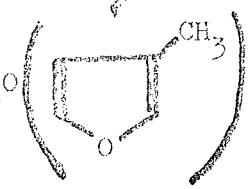
C_5H_6 (CH_2-CH_2-CH-C≡C-H)	Cyclopropyl acetylene	M. Collins	Normal and deuterated species assigned.
C_4H_4O (O-CH_2-CH-C≡C-H)	Epoxybutyne	M. Collins	Normal and deuterated species assigned.
C_3H_7P (CH_2-CH_2-CH-PH_2)	Cyclopropyl phosphine	L. Dinsmore	Normal and deuterated species assigned; paper in preparation.

42. TEXAS WOMAN'S UNIVERSITY
Chemistry Department
Denton, Texas
L.C. Sams

F_3SiI (SiF_3I)	Trifluoroiodosilane	Centrifugal effects and force constants.
F_2BCl (BF_2Cl)	Difluorochloroborane	Lines observed.

43. TOKYO INSTITUTE OF TECHNOLOGY
Laboratory of Molecular Spectroscopy
Tokyo, Japan
K. Kozima

C_4H_5N (CH_3>C=CH-C≡N)	Trans-crotononitrile	M. Suzuki	Paper in press. Internal rotor.
$C_6H_4F_2$	o-Difluorobenzene	A. Hatta	Paper in press. Vibrational satellites assigned.
C_4H_6O (H_2C=C(-CH_3)-CHO)	Methacrolein	M. Suzuki	Internal rotor. Manuscript in preparation.

[illegible]	[illegible]	A. Hobia	Int. rotor. Manuscript in preparation.
C_4H_5N ($CH_2=C(CH_3)-C\equiv N$)	Methacrylonitrile	M. Suzuki	Internal rotor. Manuscript in preparation.
C_5H_6 ($CH_3-C(CH_3)-C\equiv CH$)	2-Methyl-1-butene-3-yne	M. Suzuki	Internal rotor. Manuscript in preparation.
C_5H_8 ($CH_3-CH=CH-CH=CH_2$)	1,3-Pentadiene	M. Suzuki	Internal rotor Manuscript in preparation.
C_6H_5NO 	Pyridine-2-aldehyde	M. Suzuki	Spectrum assigned for s-trans isomer.
C_4H_4 and C_4H_3D ($CH_2=CH-C\equiv CD$ / $CH_2=CH-C\equiv CCl$)	Vinyl acetylene	C. Hirose	Vib.-rotation interacti Manuscript in preparation.
C_5H_6O 	3-Methyl furan	T. Ogata	Work in progress.

44. TOYAMA UNIVERSITY
Physics Department
Toyama, Japan
T. Kojima

CH_5N (CH_3NH_2)	Methyl amine	K. Takagi T. Kojima	Manuscript in preparation.
CH_5N (CH_3NHD)	Methyl amine	K. Takagi T. Kojima	Manuscript in preparation.
CH_5N (CH_3ND_2)	Methyl amine	K. Takagi T. Kojima	Manuscript in preparation.
NOH_3 (NH_2OH)	Hydroxylamine	S. Tsunekawa	Dipole and Quadrupole coupling consts. determined. Spectra of five deuterated species measured. Manuscript in preparation.

45. ACADEMY OF SCIENCE
Institute of Chemistry
Ufa-22, USSR
N.M. Kozlov

C_5H_6Se	3-methylselenophen		Spectrum assigned.
$C_3H_4N_2^{15}$	Pyrazole		In press.
$C_4H_4N_2^{14}$	Pyrazole		Quadrupole coupling, in press.
C_4H_8Se	Tetrahydroselenophen		Excited vibrational states, in press.

46. UNIVERSITY OF ULM
Zentrum Chemie-Physik-Mathematik
75 Karlsruhe 21, Hertzstrasse 16 Bau 35 II
W. Zeil/K. Morgenstern

CH_3SiH_2Cl	Methyl chloro silane	R. Gegenheimer S. Pferrer W. Zeil Robert Ronchi	Spectra assigned. Structure and quadrupole coupling constants and torsional potential determined. Centrifugal distortion constants, work in progress.
$(CH_3)_2SiCl$	Dimethyl chloro silane	H. Jetter W. Zeil	Work nearly completed.
$C_2H_5SiH_2Cl$	Ethyl chloro silane	V. Typke W. Zeil	Work in progress.
CH_3NO_2	Nitro methane	K. Morgenstern	Quadrupole fine Structure resolved and assigned.

47. UNIVERSITY OF WISCONSIN
Chemistry Department
Madison, Wisconsin
C.D. Cornwell

F_5I (IF_5)	Iodine pentafluoride	J. Grow	In progress.

R.C. Woods

$C_2H_4O_2$(CH_2OHCHO)	Glycolaldehyde	T. Dixon M. Simons	In progress.
$C_4H_{10}O$ ($(CH_3)_3COH$)	t-butyl alcohol	E. Valenzuela	In progress.

A. & M. Texas A&M University
Department of Physics
College Station, Texas
C.R. Quade

CH_3OH CHD_2OH CH_2DOH CD_3OH	Methanol (isotopes)	R. Test	Well underway.
CH_2DSH CHD_2SH	Methyl mercaptan	D. Daniel	Well underway.
$CH_2C_6H_4OH$(para)	Benzyl Alcohol	T. Pedersen	Just started.

FORMULA INDEX

AgF Silver-monofluoride - 8

AgI Silver-monoiodide - 8

AlF Aluminium-monofluoride - 8

BF_2H_4P (H_2BPF_2H) Difluorophosphine borane - 25

BaO Barium-oxide - 8

$BrFO_2S$ (SO_2FBr) Sulfurylfluoridebromide - 23

BrF_2P (PF_2Br) Bromodifluorophosphine - 24

BrNO (NOBr) Nitrosyl bromide - 18

Br_3P Phosphorus tribromide - 21

$C^{35}Cl_2F_2$ Dichlorodifluoromethane - 19

CCl_2O ($COCl_2$) Carbonyl chloride - 3

CFN (FCN) Cyanogenfluoride - 28

CF_2 Carbon difluoride - 28

CHN (HCN) Hydrogen Cyanide - 12

CHNO (HCNO) Fulminic acid - 15a

CH_2Br_2 Methylene bromide - 2, 18

CH_2F_2(CD_2F_2) Methylene fluoride - 16

CH_2N_4 (CH=N-N=N-NH) Tetrazole - 32

CH_3ClS Methanesulfenylchloride - 15

CH_3NOSi (SiH_3NCO) Silyl isocyanate - 21

CH_3NO_2 Nitromethane - 4, 46

CH_3NO_3 Methyl nitrate - 4

CH_4O (CH_2DOH) Methanol - dl - 21, 48

CH_4Se Methane selenol - 11

CH_5As (CH_3AsH_2) Methyl arsine - 32

CH_5ClSi (CH_3SiH_2Cl) Methyl chlorosilane - 46

CH_5N(CH_3NH_2) Methyl amine - 44

CH_6N_2 (NH_2-$NHCH_3$) Methyl hydrazine - 14

CH_8BP Methylphosphine borane - 25

CIN (ICN) Cyanogen iodide - 12

CNO NCO radical - 36

COS (OCS) Carbonyl sulfide - 5a, 17, 28

C_2BrCl(BrCCCl) Chlorobromoacetylene - 31

C_2ClF_3(CF_2:CFCl) Chlorotrifluoroethylene - 2

C_2ClI(ICCCl) Chloroiodoacetylene - 31

C_2HBF_2(HC≡C-BF_2) Ethynyldifluoro borane - 28

C_2HBr Bromo acetylene - 30

$C_2H_2N_2S$ 2,4-thiadiazole - 30

$C_2H_2N_2Se$(CH=N-N=CH-Se) 1,3,4-Selenadiazole - 32

C_2H_3Br(CH_2CHBr) Vinyl bromide - 20

$C_2H_3BrN_2$(CH_3BrCN_2) Methylbromodiazirine - 23

C_2H_3ClO(CH_2ClCHO) Chloroacetaldehyde - 12

C_2H_3NO Methyl isocyanate - 35

C_2H_3NO Acetonitrile-N-oxide - 26

$C_2H_3NO_2$(CH_2=$CHNO_2$) Nitroethylene - 39

C_2H_3NS(CH_3SCN) Methyl-thiocyanate - 7, 15

$C_2H_4F_3N$($CF_3CH_2NH_2$) 2,2,2-Trifluoroethylamine - 12

$C_2H_4O_2$(CH_2OHCHO) Glycolaldehyde - 31,47

$C_2H_4O_2$(CH_3OCHO) Methylformate - 15

$C_2H_4O_2S$($CH_2CH_2SO_2$) Ethylene episulfone - 36

C_2H_5NO N-methyl formamide - 14

C_2H_5NO Acetamide - 22

$C_2H_5NO_2$ Nitroethane - 2

$C_2H_5NO_3$($HOCH_2CH_2NO_2$) 2-Nitroethanol - 12

C_2H_6ClSi($(CH_3)_2SiCl$) Dimethyl chlorosilane - 46

$C_2H_6N_2O$ ($(CH_3)_2NNO$) Dimethylnitrosamine - 15

C_2H_6O($(CH_3)_2O$) Dimethyl ether - 15

C_2H_6O(CH_3CH_2OH) Ethyl alcohol - 20

$C_2H_6O_2$(CH_3OOCH) Dimethylperoxide - 15

$C_2H_6O_2$ ($HOCH_2$-CH_2OH) Ethylene glycol -31

C_2H_6S ($(CH_3)_2S$) Dimethyl sulfide - 7

$C_2H_6S_2$(CH_3SSCD) Dimethyldisulfide-d_3 -15

C_2H_7As($(CH_3)_2AsH$) Dimethyl arsine - 32

C_2H_7ClSi Ethyl chlorosilane -46

C_2H_7N ($CH_3CH_2NH_2$) Ethylamine - 33

C_2H_8Si ($(CH_3)_2SiH_2$) Dimethyl silane - 7

C_3BrN(BrCCCN) Bromocyanoacetylene - 31

C_3ClN(ClCCCN) Chlorocyanoacetylene - 31

C_3IN(ICCCN) Iodocyanoacetylene - 31

C_3H_3Cl ($CH=C=CHCl$) Chloroallene - 27

C_3H_3ClO Acryloyl chloride - 35

C_3H_3F ($CH_2=C=CHF$) Fluoroallene - 27

$C_3H_3F_3$($CF_3CH=CH_2$) 3,3,3-trifluoropropene -36

C_3H_3N (CH_2CHCN) Vinyl cyanide - 1

C_3H_3NO Oxazole and Isoxazole - 10

C_3H_3NS Thiazole - 6

C_3H_3NS Isothiazole - 10

$C_3H_4N_2$ Pyrazole - 6, 26

$C_3H_4N_2O$ Methylfurazan -22

$C_3H_4N_2O_2$($CH_2CNCH_2NO_2$) Nitroacetonitrile - 39

C_3H_4O (C_3H_3OD) Propargyl alcohol - 30

$C_3H_4O_2$($CH_2OCHCHO$) Glycidaldehyde - 24

$C_3H_4O_2$(H_2C-CO-CH_2O) Oxetanone - 5b

C_3H_4S Propargyl mercaptan - 30

C_3H_5Cl Allyl chloride - 16

C_3H_5FO Propionyl fluoride - 30

C_3H_5FO Fluoroacetone - 22

C_3H_5I ($CH_2=CICH_3$) 2-Iodopropene -39

C_3H_5N (C_2H_5CN) Ethyl cyanide -15

C_3H_5NO($NCCH_2CH_2OH$) 2-cyanoethanol -17

C_3H_6($CH_2DCH=CH_2$) Propylene - 16

C_3H_6O (CH_3CH_2CHO) Propanal - 12

C_3H_6O ($(CD_3)_2CO$) Acetone-d6 - 15

C_3H_6O Cyclopropanol - 30

$C_3H_6O_2$ Propionic acid - 30

$C_3H_6O_3$ Dimethyl carbonate - 30

$C_3H_6N_2$ Dimethylcyanamide - 10

$C_3H_6S_3$ Trithian - 11

C_3H_7Br ($CH_3CH_2CH_2Br$) Normal Propyl bromide - 29

C_3H_7I($CH_3CH_2CH_2I$) Normal Propyl Iodide - 29

C_3H_7N (CH_2=$CHCH_2NH_2$) Allylamine - 27

C_3H_7N (CH_3CH=NCH_3) N-Methylethylidenimine - 39

C_3H_7N Cis-propylene imine - 19

C_3H_7NO ($(CH_3)_2NCHO$) Dimethyl formamide - 24, 37

C_3H_7P Cyclopropyl phosphine - 41

C_3H_8O ($(CH_3)_2CHOH$) Isopropyl alcohol - 16

$C_3H_8O_2$ ($CH_3OCH_2CH_2OH$) 2-methoxethanol - 17

C_3H_8Si Silacyclobutane - 28

$C_3H_9BF_3N$ ($(CH_3)_3NBF_3$) Trimethylamine-borontrifluoride - 25

C_3H_9P (CH_2-CH_2-CH-PH_2) Cyclopropyl phosphine - 41

$C_3H_{12}BP$ ($(CH_3)_3PBH_3$) Trimethyl phosphine borane - 25

C_4HCl (HCCCCCl) Monochlorodiacetylene -31

C_4H_3N (CH_2=C=CHCN) Cyanoallene - 27

$C_4H_3NO_2$ Maleimide - 10

C_4H_4 (CH_2CHCCH)) Vinylacetylene - 43

$C_4H_4N_2$ Pyrimidine - 26

$C_4H_4N_2$ 15 Pyrazole - 45

C_4H_4O (O-CH_2-C-C=C-H) Epoxybutyne - 41

C_4H_5 (H_2C=$C(CN)CH_3$) 2-Cyanopropene -31

C_4H_5FO (CH_2CH_2CHCOF) Cyclopropylcarboxylic acid fluoride - 24

C_4H_5N($CH_2C(CH_3)CN$) Methacrylonitrile -43

C_4H_5N ($CH_3CHCHCN$) trans crotononitrile -43

C_4H_5NO 5-Methyl isoxazole - 30

C_4H_6O ($CH_2C(CH_3)CHO$) Methacrolein - 43

C_4H_6O (CH_2CH_2CHCHO) Cyclopropylcarboxaldehyde - 24

C_4H_6O Cyclopentene oxide - 28

C_4H_6O Divinyl ether - 35

$C_4H_6O_2$ (CH_3CH=$CHCOOH$) Crotonic acid - 13

C_4H_6S 1,2 Dihydrothiophene - 28

C_4H_6S ($SCH_2CHCHCH_2$) 2,5 Dihydrothiophene - 28

C_4H_7FO Isobutyryl fluoride - 30

C_4H_8 Cis 2-butene

C_4H_8O Ethyl vinyl ether - 30

C_4H_8O Isobutyraldehyde - 30

C_4H_8Se Tetrahydroselenophen - 45

C_4H_8OS ($CH_2(CH_2)_3$-S-O) Tetramethylene sulfoxide - 5b

C_4H_9I 1-iodobutane - 13

C_4H_9N ($C_4H_7NH_2$) Cyclobutylamine - 14

C_4H_9NOSi[$(CH_3)_3SiNCO$] Trimethyl silicon isocyanate - 4

C_4H_9NSSi [$(CH_3)SiNCS$] Trimethyl silicon isothiocyanate - 4

$C_4H_{10}O$ t-butyl alcohol - 47

$C_4H_{10}Si$ Silacyclopentane -28

C_5H_4FN 2-Fluoropyridine - 40

C_5H_4OS Pyran-4-thione - 10

$C_5H_4O_2$ Pyran-4-one - 10

$C_5H_4O_3$ Citraconic anhydride - 22

C_5H_5In Cyclopentadienyl indium - 4, 21

C_5H_5NNiO (C_5H_5NiNO) Cyclopentadienyl nitrosyl nickel - 4

C_5H_5O Pyridine-N-oxide - 26

$C_5H_5NOPt(C_5H_5PtNO)$ Cyclopentadienyl nitrosyl platinum - 4

C_5H_5Tl Cyclopentadienyl thallium - 4, 21

$C_5H_6(CH_2\text{-}CH_2\text{-}CH\text{-}C\equiv C\text{-}H)$ Cyclopropyl acetylene - 41

$C_5H_6(CH_2C(CH_3)CCH)$ 2-methyl-1-butene-3-yne - 43

C_5H_6O 2-cyclo-pentene-one - 18

C_5H_6O $(CHCHOCHC(CH_3))$ 3-methylfuran - 43

$C_5H_6O_2$ Cyclopent-2-ene-1-one - 13

$C_5H_6S(CH_3C(CH)_3S)$ 2-methylthiophene -15

C_5H_6Se 3-methylselenophen - 45

C_5H_7Cl 1-chloro bicyclo[1.1.1] pentane -14

$C_5H_8(CH_3CH_2CH_2CCH)$ 1-pentyne - 12

$C_5H_8(CH_3CHCHCHCH_2)$ 1,3-pentadiene - 43

$C_5H_8(CH_2{=}CHCH_2CH{=}CH_2)$ 1,4-pentadiene -16

C_5H_8 $(CH_2CH_2CHCHCH_2)$ Vinylcyclopropane -24

C_5H_8O $(CH_2CH_2CHCOCH_3)$ Methylcyclopropyl ketone - 24

$C_5H_{11}I$ 1-iodopentane - 13

m-C_6H_4ClF meta-chlorofluoro-benzene -2

$C_6H_4F_2$ o-Difluorobenzene - 43

$C_6H_4N_2$ 2-Cyanopyridine - 40

C_6H_5ClO 4-chlorophenol - 6

C_6H_5FO 4-fluorophenol - 6

C_6H_5NO Pyridine--aldehyde - 43

$C_6H_5NO_2$ Nitrobenzene - 6

$C_6H_5N_2O$ Benzoxadrazole - 26

C_6H_6 Fulvene - 26

C_6H_6 3,4-dimethylene-cyclobutene - 26

C_6H_6BrN p-bromoaniline - 10

C_6H_6ClN p-chloroaniline - 10

C_6H_6FN $(FC_6H_4NH_2)$ p-fluoroaniline - 10

C_6H_6O (C_6H_5OH) Phenol - 6, 39

C_6H_7Br Benzyl bromide - 13

C_6H_7I Benzyl iodide - 13

C_6H_7N $(C_6H_5NH_2)$ Aniline - 43

C_6H_8O Bicyclo [2.1.1] hex-2-one - 38

C_6H_8O Cyclohex-2-en-1-one - 10

C_6H_9Br 3-bromocyclohexene - 13

$C_6H_{11}F$ Cyclohexyl fluoride - 13

$C_6H_{13}F$ n-hexyl fluoride - 11

$C_6H_{13}I$ n-hexyl iodide - 11

C_7H_5N Benzonitrile - 6

$C_7H_6F_2(CH_3C_6H_3F_2)$ Difluoro-toluene -7

$C_7H_6O_2$ 6-hydroxy-2-formyl-fulvene - 12

C_7H_7F $(C_6H_5CH_2F)$ Benzyl fluoride - 13

C_7H_7FO p-fluoroanisole - 30

$C_7H_8(CH_3C_6H_4D)$ d_1-toluenes - 7

C_7H_8O Benzyl alcohol - 48

C_7H_9Cl Chloro nor tricyclene - 33

C_8H_7F Fluorostyrene - 26

C_8H_7N $(CH_3C_6H_4CN)$ p-methyl-benzonitrile - 7

C_8H_8 Styrene - 26

C_8H_{10} $(CH_3CH_2DC_6H_4)$ d_1-ortho-xylene - 7

$C_8H_{13}F$ 1-fluoro-bicyclo[2,2,2] octane - 16

$C_8H_{15}N(C_7H_{15}CN)$ n-heptyl cyanide - 34

$C_{10}H_8$ Azulene - 39

$C_{11}H_{15}N$ Adamantyl cyanide - 18

$C_{12}H_{10}O$ Diphenyl ether - 21

$ClF_2P(PF_2Cl)$ Chlorodifluorophosphine - 3, 24

ClF_5 Chlorine pentafluoride - 28

ClF_5Te Tellurium chloride pentafluride - 18

ClHO Hypochlorous acid - 3, 18

ClH_2N Chloramine - 18

$ClH_5Si_2(SiH_3SiH_2Cl)$ Monochlorodisilane - 38

ClNS (NSCl) Thionitrosyl chloride - 36

ClO_2 Chlorine dioxide - 26

Cl_2S (SCl_2) Sulfur Dichloride - 9

Cl_2S_2 Sulphur monochloride - 26

Cl_3OV ($VOCl_3$) Vanadium oxytrichloride - 40

Cl_3Sb ($SbCl_3$) Antimony trichloride - 11

CuF Copper-monofluoride - 8

FGa(GaF) Gallium-monofluoride - 8

$FH_3Si(SiH_3F)$ Fluorosilane - 33

FIN Indium-monofluoride -8

FNO_2 Nitryl fluoride - 16

F_2BCl (BF_2Cl) Difluorochloroborane - 42

F_2Ge Germanium difluoride - 35

F_2S (SF_2) Sulfurdifluoride - 28

F_3P (PF_3) Phosphorous trifluoride - 16, 21

F_3Sb (SbF_3) Antimony trifluoride - 11

$F_3SiI(SiF_3I)$ Trifluoroiodosilane - 42

F_5I (IF_5) Iodine pentafluoride - 47

GeO Germanium-monoxide - 8

GeS Germanium-monosulfide - 8

GeSe Germanium-monoselenide - 8

GeTe Germanium-monotelluride - 8

HNO_2 Nitrous acid - 4

H_2O (HDO, D_2O) Heavy water - 20, 28

H_3NO Hydroxylamine - 44

InI Indium-monoidide - 8

NO_2 Nitrogen dioxide - 26

N_2O_3 Dinitrogen trioxide - 4, 25

OPb(PbO) Lead-monoxide - 8

OSn(SnO) Tin-monoxide - 8

O_2 Oxygen - 16

O_2S (SO_2) Sulfur dioxide - 20

O_3 Ozone - 16

PbS Lead-monosulfide - 8

PbSe Lead-monoselenide - 8

PbTe Lead-monotelluride - 8

SSi(SiS) Silicium-monosulfide -8

SSn(SnS) Tin-monosulfide - 8

SeSn(SnSe) Tin-monoselenide - 8

SnTe Tin-monotelluride - 8