MICROWAVE SPECTROSCOPY INFORMATION LETTER

No. XXXII

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Compiled by:

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MICROWAVE SPECTROSCOPY NEWSLETTER XXXII

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_8O_2$	α-Methil-γ-Butyrolactone	J.C.López J.L.Alonso F.J.Peláez	J.Mol.Spectrosc. 131, 9 (1988)
$C_3H_6O_2S$	Trimethylene sulphone	J.C.López J.L.Alonso	J.Chem.Phys. 89, 678 (1988)
$C_4H_6O_3$	Propylene Carbonate	E.González J.L.Alonso[1] W.Caminati[1]	Spectrum assigned Work in progress.
$C_4H_8O_2S$	Butadiene Sulphone	J.L.Alonso D.G.Lister J.C.López R.M.Villamañán	Paper in preparation.
$C_4H_6O_2$	β-Butyrolactone	J.L.Alonso E.González	Paper in preparation.
$C_4H_8O_2$	3-Methyl oxetane	J.C.López J.L.Alonso H.Wieser[2]	Paper in preparation.
$C_4H_8O_2$	2-Methyl oxetane	J.C.López J.L.Alonso H.Wieser[2]	Spectrum assigned. Work in progress.
C_7H_5OF	o-Fluorobenzaldehyde	R.M.Villamañán J.L.Alonso	J.Chem.Soc.Far.II (in press)
C_7H_5OF	m-Fluorobenzaldehyde		
C_7H_5OF	p-Fluorobenzaldehyde	S.R.González R.M.Villamañán J.L.Alonso	J.Mol.Struct. 190, 79 (1988)
C_8H_7F	o-Fluorostyrene	R.M.Villamañán J.C.López J.L.Alonso	Submitted

C_8H_7F	m-Fluorostyrene	R.M.Villamañán J.L.Alonso	Submitted
$C_6H_9NO_2$	1-Nitrocyclohexene	S.R.González R.Mulas J.L.Alonso	J.Mol.Spectrosc. (in press)
$C_5H_4N_2O_2$	p-Nitropyridine	R.Mulas S.R.González J.L.Alonso	J.Mol.Struct. (in press)
C_4H_7OF	Butyryl Fluoride	S.R.González J.L.Alonso	Syn-Anti and Syn-Gauche Conformers assigned.
C_7H_4NOF	m-Fluorophenyl isocyanate	M.E.Charro J.L.Alonso	"cis" Conformer assigned.
C_4H_6OS	Tetrahydrothiophene-3-one	R.M.Villamañan J.C.López J.L.Alonso	Spectrum assigned. Work in progress.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CNS	NCS radical	T. Amano	Assigned
NS_2	Nitrogen disulfide	T. Amano	Spectrum recorded
$C_2H_6(CH_3CD_3)$	Ethane-d_3	N. Moazzen-Ahmadi	mm-wave spectrum in torsional excited state

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_4O	acetaldehyde	W Liang	far IR torsion spectrum
$C_2H_4O_2$	methyl formate	H Nadgaran	mmwave torsional states
CF_3SF_5	trifluoromethyl sulfur hexafluoride	P N Brier	mmwave supersonic jet high resolution spectrum

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_3F_3Si (CH_3SiF_3)	Methyl trifluoro-silane	I. Ozier C. Styger	$\Delta K=\pm 3$ transitions started
CH_4O_2 (CH_3OOH)	Methyl hydroperoxide	A. Bauder in collab. with C. E. Blom (Giessen)	manuscript in preparation
$C_2H_3F_3$ (CH_3CF_3)	1,1,1-Trifluoro-ethane	I. Ozier B. Vogelsanger	$\Delta K=\pm 3$ transitions assigned
$C_2H_5NO_2$ ($HCONHOCH_3$)	Methoxyformamid	C. Styger	assigned
C_3H_6	Cyclopropane	T. Brupbacher	centrifugal distort. spectrum measured
C_3D_4 ($CD_2=C=CD_2$)	Allene-d_4	B. Vogelsanger	υ_{10} and υ_{11} excited states measured
C_4H_7N	Pyrroline	J. Dommen W. Caminati R. Meyer	manuscript in preparation
C_6H_{12}	Cyclohexane	J. Dommen T. Brupbacher	substitution structure
C_7H_8	Quadric lane	B. Vogelsanger	manuscript submitted to J. Mol. Spectr.
$C_2DF_3O_2$ (CF_3COOD)	Trifluoroacetic acid-d_1	L. Martinache M. Wegener	deuterium quadrupole splittings
C_2H_3DO (CH_3CDO)	Acetaldehyde-d_1	L. Martinache	deuterium quadrupole splittings
$C_2H_3DO_2$ (CH_3COOD)	Acetic acid-d_1	L. Martinache M. Wegener	deuterium quadrupole splittings
C_6H_4DF	Fluorobenzene-d_1	S. Jans-Bürli	deuterium quadrupole splittings of ortho, meta and para isomer
C_6H_5D	Benzene-d_1	S. Jans-Bürli	deuterium quadrupole splittings remeasur.
$C_3H_3F_3O_4$ ($HCOOH..CF_3COOH$)	Formic acid - trifluoroacetic acid dimer	W. Kresa L. Martinache M. Wegener	D, ^{13}C, ^{18}O species assigned
$C_4H_5F_3O_4$ ($CH_3COOH..$ CF_3COOH)	Acetic acid - trifluoroacetic acid dimer	W. Kresa	assigned
F_3OP (OPF_3)	Phosphoryl trifluoride	C. Styger	$\Delta K=\pm 3$ transitions measured

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CHFO_2$	carbon dioxide-hydrogen fluoride cluster	Steven Sharpe, Yongping Zeng	Spectra taken and assigned at 2350 cm^{-1}
$CHClO_2$	carbon dioxide-hydrogen chloride cluster	Steven Sharpe, Yongping Zeng	Spectra taken and assigned at 2350 cm^{-1}
$CHBrO_2$	carbon dioxide-hydrogen bromide cluster	Steven Sharpe, Yongping Zeng	Spectra taken at 2350 cm^{1}
HFN_2O	hydrogen fluoride-nitrous oxide cluster	Steven Sharpe, Yongping Zeng	Spectra taken and assigned

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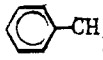
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ArF_3P (PF_3-Ar)	Argon-PF_3 Complex	U. of Michigan collaboration.	Submitted
F_3KrP (PF_3-Kr)	Krypton-PF_3 Complex		
$C_3H_5NO_2$ (CH_2=$CHCH_2ONO$)	Allyl Nitrite	K. W. Hwang	4 conformers, 2 are assigned.
C_4H_5ArN 	Pyrrole-Ar	U. of Michigan collaboration.	J. Phys. Chem. In press.
$C_4H_8N_2O$ 	Nitrosopyrrolidine	K. W. Hwang	r_o structure, ^{14}N quad. coupling. Also, d_4 species.
$C_5H_{10}N_2O$ 	Nitrosopiperidine	X. Z. Liu K. W. Hwang	r_o structure.
$C_6H_{11}NO$ 	1-Formylpiperidine	C. Sahi	Assigned.
C_8H_7N 	Benzyl Cyanide	U. of Calif.(Davis) collaboration.	Ground state, ^{14}N quad. coupling assigned.
$C_8H_8O_2$ (OHC-  -OCH_3)	p-Anisaldehyde	U. of Calif.(Davis) collaboration.	2 conformers assigned.
$C_{10}H_{12}O$ (OHC-  -$CH(CH_3)_2$)	p-Isopropyl Benzaldehyde	R. Bohn	2 conformers assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2HFO ($HFC{=}C{=}O$)	Fluoroketene	K. Wiedenmann	Vibrational satellites analysed. Manuscript in press, J. Mol. Spec.
$C_4H_4N_2O_2$	Uracil	A. Pierlot	J. Am. Chem. Soc., 1988, **110**, 2239.
$C_5H_6N_2O_2$	Thymine	A. Pierlot	J. Chem. Soc., Chem. Comm., 1988, in Press.
$C_4H_5N_3O$	Cytosine	A. Pierlot	J. Am. Chem. Soc., 1988, in press.
$C_5H_5N_5$	Adenine	A. Pierlot	Chem. Phys. Letts., 1988, in press.
$C_3H_6O_3$	Glyceraldehyde	S. Mandragona	Analysis in progress.
C_2H_5N ($H_2C{=}CH\text{-}NH_2$)	Vinylamine	D. McNaughton	0^+, 0^- mm wave spectrum analysed. Manuscript in preparation.
C_2HClO	Chloroketene	G. Burns	Vibrational satellites assigned. Manuscript in preparation.
CH_3NO ($HCONH_2$)	Formamide	F. Trollope	Vibrational satellite analysis in progress.
$C_4H_6N_2O_2$	2,5-Piperazinedione (glycine anhydride)	F. Trollope	Analysis in progress.
C_2H_2O ($H_2C{=}C{=}O$)	Ketene	W. Taylor	mm wave spectrum of ^{13}C and ^{18}O species assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ClF_3Si	Chlorotrifluorosilane	J.H.Carpenter	mm-wave spectrum of ground & excited states
$CDCl_3$	Chloroform-d	J.H.Carpenter	mm-wave spectrum of excited states
CH_3Cl_3Si	Methyltrichlorosilane	J.G.Smith	manuscipt sent to J. Mol. Spectrosc.
CH_3F_3Si	Methyltrifluorosilane	J.G.Smith	mm-wave spectrum of excited states
C_4H_9CCl $[(CH_3)_3Cl]$	2-chloro-2-methylpropane (tert-butyl chloride)	J.G. Smith	mm-wave spectrum of excited states

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2F_3N	(CF_3NH_2) Trifluoromethylamine	P. Zylka	Normal + Deuteriated species
$C_2H_6O_2$	(CH_3OOCH_3) Dimethylperoxide	P. Zylka	Combination with RFMWDR and FIR
$C_2F_3N_2S_2$	($CF_3C\overset{N\text{-}S^{\bullet}}{\underset{N\text{-}S}{}}$) 4-(Trifluoromethyl)-1,2,3,5 dithiadiazole	E. Jaudas	Broad band and HR spectra
F_6OS	(SF_5OF) Fluoroxysulphurpentafluoride	E. Jaudas	RFMWDR
C_2FH_6N	($(CH_3)_2NF$) Dimethylfluoramine	J. Kadel	Structure with ED
C_2F_3NO	(CF_3NCO) Trifluoromethylisocyanate	D. Christen	LAM analysis with J. Koput, Poznan
$C_2H_8O_2$	($(CH_2OH)_2$) Ethylene glycol	D. Christen	MWMWDR, LAM analysis with H. Møllendal, Oslo

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_3N_3$	1H- and 2H-1,2,3-triazole		Acta Chem. Scand. A42 (1988) 500-514.
$C_3H_2O_4$	1,3-dioxolane-4,5-dione	*)N.W.Larsen	Vibr. states assigned.
C_5H_7NO	furfurylamine and five D species	*)T.Pedersen I.Hedgecock N.W.Larsen L.Nygaard G.O.Sørensen	Nearly finished.
$C_7H_4F_2O$	3-fluorobenzoyl fluoride		J. Mol. Spectrosc. 129 (1988) 223-231.
$C_7H_4F_2O$	4-fluorobenzoyl fluoride		J. Mol. Spectrosc. 128 (1988) 370-383.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CClF_2NO$	chlorodifluoronitrosomethane	A.C. Fettis	In progress.
CF_3NO_2	trifluoronitromethane	P.R.R.Langridge-Smith	In manuscript.
CHF_3S) CDF_3S)	trifluoromethylmercaptan	R. Stevens/C.A. Rego	Manuscript prepared for J.Mol.Struct.
$CH_5BO_2[CH_3B(OH)_2]$	methylborondihydroxide	C.A. Rego	In thesis.
C_2HClF_2O	chlorodifluoroacetaldehyde	D.W. Knight	Manuscript in preparation.
C_2H_5NO	nitrosoethane	J.A. Hardy	Extended study. (see Sussex)
$C_3H_2N_2[CH_2(CN)_2]$	malononitrile	J. Randell	Structure/quadrupole complete.
$C_4H_9BF_2$	t-butylborondifluoride	S.D. Hubbard	Barrier/dipole complete.
C_4H_9NO	t-butylnitrosomethane	M.J. Corkill	In thesis.
C_4H_9NO	t-butylnitrite	M.J. Corkill	Manuscript in preparation.
$C_5H_{10}O$	pivalaldehyde (t-butyl formaldehyde)	A.D. Couch	Isotopes assigned.
CF_3NSi	trifluorosilylisocyanide)	A.D. Couch/S. Clement	In Chem.Phys.Letters 1989.
CH_3NSi	trifluorosilylcyanide)		
N_2O_3	dinitrogentroioxide	J. Randell	Vibrational satellites and Force field.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_3Br	methyl bromide	F. Scappini H. Mäder G. Di Lonardo	collision induced transitions
CH_3I	methyl iodide		
SbH_3	stibine	B.M. Dinelli F. Scappini G. Di Lonardo	RF-IR double resonance
$C_4O_2Br_2$	1,2-dibromo cyclobuten-3,4-dione	G. Corbelli B. Lunelli F. Scappini	MW-spectrum
C_2HF_3ClBr	halothane		

13 H.Dreizler, A.Guarnieri, H.Mäder, D.Sutter

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Formula	Name of Compound	Name of Investigator	Present Stage of Progress
BF_2OH BF_2OD	hydroxodifluoroboron	Vormann	B-hfs complete
BF_3	trifluoroboron	Vormann Stahl	hfs in progress
BH_4N:			
BH_2NH_2	aminoborane	Vormann	N,B-hfs in progress
$FC^{14}N$ $FC^{15}N$	cyanogen fluoride	Zerbe-Foese Hinze	dipole moments of exited states
OCS	carbonyl sulfide	Wolf	relaxation studies
CD_2I_2	diiodomethane-d_2	Stahl	assignment in progress
HCN DCN	hydrogen cyanide	Heineking	l-type spectra, N-hfs reanalysed
$HNC^{17}O$ DNCO	isocyanic acid	Gerry Heineking in coop. with Howard,Vancouver	N,O-hfs in progress N,D-hfs complete
$CHClF_2$	chlorodifluoromethane	Spiehl	mmw spectrum
CH_2Br_2	dibromomethane	Merke Heineking	Br-hfs in progress
CH_2I_2	diiodomethane	Stahl in coop. with Vogelsanger,Zürich	assignment in progress
CH_3N:			
CH_2NH	methanimine	Krause	rotational Zeeman effect in progress
CH_3NO_3	methyl nitrate	Spieckermann	rotational Zeeman effect in progress
CH_3N_3	methyl azide	Gerry Heineking	incl. ^{15}N-species,N-hfs ms. submitted
CH_4	methane	Stahl Wolf	hfs, ms. submitted linewidth studies, ms. in prep.

CH_5N:			
CH_3NH_2	methylamine	Jäger in coop. with Kreglewski, Poznan	incl. deuterated species hfs- and rot.-vib.-interaction
CNCN	cyanogen isocyanide	Gerry in coop. with Stroh and Winnewisser, Giessen	hfs complete, isotopes
HCCBr DCCBr	bromoacetylene	Harder Heineking	l-type spectra:Br-hfs D-hfs:published Stark effect:ms.in prep.
HCCCl DCCCl	chloroacetylene	Heineking	l-type spectra:Cl-hfs Stark effect:ms.in prep.
HCCF DCCF	fluoroacetylene	Haekel Heineking	relaxation studies D-hfs:published
HCCI DCCI	iodoacetylene	Andresen Heineking	structure:ms. submitted D-hfs:published Stark effect:ms.in prep.
C_2H_2O C_2D_2O	ketene ketene-d_2	Zerbe-Foese Hinze	dipole moments of exited states
	ketene-d_2	Doose	rotational constants of exited states
$C_2H_2F^{14}N$ $C_2H_2F^{15}N$	fluoroacetonitrile	Zerbe-Foese Hinze	dipole moments of exited states
$C_2H_3NO_2$	nitroethylene	Spieckermann	rotational Zeeman effect in progress
C_2H_4FNO:			
CH_2FCONH_2	2-fluoroacetamide	Heineking	N-hfs complete
$C_2H_4F_3N$:			
$CF_3CH_2NH_2$	trifluoroethylamine	Keussen	N-hfs complete N-d_2-species in progress
C_2H_5I	ethyl iodide	Gripp	published
C_2H_5N:			
CH_3CHNH	ethanimine	Krause	rotational Zeeman effect in progress
C_2H_5NO:			
CH_3CONH_2	acetamide	Heineking	N-hfs complete (groundstate only)
C_2H_5ONO	ethyl nitrite	Keussen	N-hfs published inversion splittings
C_2H_6NO:			
$CH_2OHCH_2NH_2$	aminoethanol	Keussen	N-hfs in progress

$C_2H_6N_2O$:			
$(CH_3)_2NNO$	dimethyl nitrosamine	Heineking	N-hfs complete int.rot. in progress
C_2H_6O	dimethylether	Neustock	mmw spectrum
C_2D_6O	dimethylether-d_6		
HCCCN	cyanoacetylene	Haekel	relaxation studies
C_3H_2ClN:			
CH_2=CClCN	chloroacrylonitrile	Vormann Heineking	Cl,N-hfs in progress
C_3H_4:			
CH_2=C=CD_2	1,1-dideuteroallene	Meyer	rotational Zeeman effect in progress
CH_2=C=CHD	monodeuteroallene		
CH_2D-C≡CH	3-deuteropropyne		
$C_3H_3DN_2$	1-/4-deuteropyrazole	Böttcher	rotational Zeeman effect in progress
C_3H_5Br	cyclopropyl bromide	Heineking in coop. with Li and Lewis-Bevan, Vancouver	Br-hfs complete
C_3H_5I:			
CH_2=CI-CH_3	2-iodopropene	Gripp	int.rot. analysis in progress
C_3H_5N:			
C_2H_5NC	ethyl isocyanide	Krüger	N-hfs reanalysed int.rot. in progress
$CH_2CHCHNH$	syn-/anti-propenimine	Krause	rotational Zeeman effect in progress
C_3H_7Br:			
$(CH_3)_2CHBr$	isopropyl bromide	Meyer	Br-hfs,dipole moment, excited states in prog.
C_3H_7Cl:			
$(CH_3)_2CHCl$	isopropyl chloride	Meyer	Cl-hfs,dipole moment, excited states in prog.
C_3H_7F:			
$(CH_3)_2CHF$	isopropyl fluoride	Meyer	excited states complete
C_3H_7I:			
$(CH_3)_2CHI$	isopropyl iodide	Gripp	I-hfs nearly complete
C_3H_7N:			
$C_3H_5NH_2$	cyclopropylamine	Böttcher	rotational Zeeman effect in progress
C_3H_7NO:			
$(CH_3)_2NCHO$	dimethyl formamide	Heineking	N-hfs, int.rot. in progress

C_3H_9N:			
$(CH_3)_2CHNH_2$	isopropylamine	Keussen	incl. deuterated species N-hfs in progress
C_4H_5N:			
C_3H_5CN	cyclopropyl cyanide	Böttcher	rotational Zeeman effect in progress
C_4H_5NO:			
C_3H_5NCO	cyclopropyl isocyanate	Heldmann	N-hfs in progress
C_4H_5NS:			
$CH_3C_3H_2NS$	4-/5-methylthiazole	Jäger	published
C_4H_7N:			
C_3H_7NC	n-propyl isocyanide	Krüger	N-hfs, int.rot. in progress
$(CH_3)_2CHNC$	isopropyl isocyanide	Krüger	assignment in progress
$C_4H_8N_2O$:			
$(CH_2)_4NNO$	N-nitrosopyrrolidine	Heineking in coop. with Bohn, Storrs, Conn.	N-hfs complete
C_4H_9Br:			
$(CH_3)_3CBr$	tert.-butyl bromide	Harder	Br-hfs complete
C_4H_9N:			
$(CH_2)_4NH$ $(CH_2)_4ND$	pyrrolidine	Grabow Ehrlichmann	N,D-hfs complete
C_4H_9NO:			
$(CH_2)_2O(CH_2)_2NH$ $(CH_2)_2O(CH_2)_2ND$	morpholine	Grabow Ehrlichmann	N,D-hfs complete
C_4H_{10}	butane	Vormann	int.rot. in progress (torsional groundstate)
C_5H_3NO:			
$C_4H_3O(CN)$	2-cyanofurane	Albinus	rotational Zeeman effect in progress
C_5H_5NO:			
C_4H_4NCHO	2-formyl pyrrole	Heineking	N-hfs complete
C_5H_5NO	pyridine-N-oxide	Heineking	N-hfs complete
$C_5H_{10}Si$:			
$(CH_3)_3SiCCH$	trimethylsilylacetylene	Ellendt	assignment in progress
$C_5H_{11}N$:			
$(CH_2)_5NH$ $(CH_2)_5ND$	piperidine	Grabow Ehrlichmann	N,D-hfs complete
$C_6H_4Cl_2$	1,2-dichlorobenzene 1,3-dichlorobenzene	Merke Keussen in coop. with Onda, Tokio	Cl-hfs in progress
C_6H_5Cl	chlorobenzene	Heineking	Cl-hfs complete

$C_6H_5BF_2$	phenyldifluoroborane	Vormann	B-hfs published
C_6H_5NO: C_5H_4NCHO	3-/4-formyl pyridine	Stryjewski	N-hfs published
$C_6H_5NO_2$	nitrobenzene	Heineking	v=0,1,2 N-hfs complete
$C_6H_5NO_3$: $C_6H_4(OH)NO_2$	o-nitrophenol	Heineking	N-hfs complete
C_6H_5D	deuterobenzene	Albinus	rotational Zeeman effect in progress
C_6H_7N: $C_6H_5NH_2$	aniline	Oldag	rotational Zeeman effect in progress
C_6H_7NO: $CH_3C_5H_4NO$	2-picolin-N-oxide	Heineking Kamura,Tokio	N-hfs, int.rot. in progress
$FClO_3$	perchloryl fluoride	Heldmann	hfs in progress
$ClGeH_3$	germyl chloride	Heineking in coop. with Wlodarczak,Lille	isotopes,Cl-hfs complete ^{73}Ge-hfs in progress
Cl_2S	sulfur dichloride	Merke	Cl-hfs in progress
Cl_2SO	thionyl chloride	Merke	Cl-hfs in progress
Cl_2SO_2	sulfuryl chloride	Merke	Cl-hfs complete
D_2O_2	hydrogen peroxide-d_2	Doose	rotational constants of exited states
$FSiH_3$	silyl fluoride	Guarnieri Neustock	mmw spectrum
HN_3	hydrazoic acid	Gerry Heineking	incl. ^{15}N-species N-hfs complete
NH_3	ammonia	Wolf	collision-induced transitions
SiH_4	silane	Stahl	hfs, ms. in prep.
N_2O	nitrous oxide	Nicolaisen	l-type spectrum incl. ^{15}N-species relaxation studies

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_7P(CH_3CH_2PH_2)$	ethylphosphine	Groner	excited states in progress
$C_2H_5F_2P(CH_3CH_2PF_2)$	ethyldifluorophosphine	Groner	d_1,^{13}C partially assigned
$C_2H_5F_2OP(CH_3CH_2POF_2)$	ethylphosphonic difluoride	Johnson	trans assigned
$C_3H_7F_2P((CH_3)_2CHPF_2)$	isopropyldifluorophosphine	Groner	J. Phys. Chem. 93(7), (1989)
$C_2H_6F_2NP((CH_3)_2NPF_2)$	dimethylamino difluoro-phosphine	Harlan	J. Phys. Chem. 93(6), (1989)
$C_2H_6FPS((CH_3)_2PSF)$	dimethylphosphonothioic fluoride	Chatterjee	manuscript in preparation
$C_3H_9PS((CH_3)_3PS)$	trimethylphosphine sulfide	Chatterjee	Inorg. Chem. 28, 298 (1989)
$C_4H_9F((CH_3)_2CHCH_2F)$	2-methyl-1-fluoropropane	Godbey	submitted, J. Chem. Phys.
$C_4H_7F(CH_2=C(CH_3)CH_2F)$	3-fluoro-2-methylpropene	Qiu	submitted, J. Chem. Phys.
$C_4H_7F(trans\text{-}CH_3CH=CHCH_2F)$	trans-1-fluoro-2-butene	Groner	gauche assigned, cis in progress
$C_5H_7ClO(\overline{CH_2CH_2CH_2}CHCClO)$	cyclobutylcarbonyl chloride	Badawi	J. Mol. Struct. 190, 475 (1988)
$C_5H_8O(\overline{CH_2CH_2CH_2}CHCHO)$	cyclobutylcarboxaldehyde	Badawi	submitted, J. Chem. Phys.
$CHF_2N(CF_2=NH)$	difluoromethanimine	Groner	J. Chem. Phys. 89, 3983 (1988); d_1 in progress
$CBrF_2N(CF_2=NBr)$	N-bromo-difluoromethanimine	Groner	manuscript in preparation
$GeH_3N_3(GeH_3NNN)$	germylazide	Sullivan, Groner	submitted, J. Chem. Phys.
$C_2H_2BrFO(FCH_2CBrO)$	fluoroacetylbromide	Little	in progress
$C_4H_8O((CH_3)_2CHCHO)$	2-methylpropanal	Guirgis, Stiefvater	submitted, J. Chem. Phys.
$C_4H_{10}Ge(\overline{CH_2CH_2CH_2}CHGeH_3)$	cyclobutylgermane	Geyer	Chem. Phys. 125, 299 (1988)
$C_2H_3FO_2(CH_3OCFO)$	methylfluoroformate	Tolley	d_1,d_3 assigned, ^{18}O in progress
$C_3H_9P((CH_3)_2CHPH_2)$	isopropylphosphine	Barron	search for 2nd conformer
$C_3H_7F((CH_3)_2CHF)$	isopropylfluoride	Nanaie	manuscript in preparation
$C_5H_9Cl(\overline{CH_2(CH_2)_3}CHCl)$	chlorocyclopentane	Lee	equatorial conformer assigne
$C_2H_3ClO_2(CH_3OCClO)$	methylchloroformate	Tolley	^{18}O assigned; manuscript in preparation
$C_3H_9P((CH_3)_3P)$	trimethylphosphine	Chatterjee	submitted, Struct. Chem.

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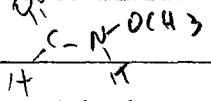
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
COS(OCS)	carbonyl sulfide	P.G.Favero [a]	New results on the N_2^*-OCS system.
CClN(ClCN)	cyanogen chloride	P.G.Favero [a]	N_2^*-ClCN system; work in progress.
COS(OCS)	carbonyl sulfide	G.Cazzoli [a]	Modulated line shape analysis.
$CHO^+(HCO^+)$	formyl ion	G.Cazzoli [a]	Preliminary results on pressure broadening.
$CDO^+(DCO^+)$	formyl ion	G.Cazzoli [a]	HFS and line shape analysis.
BF	boron fluoride	G.Cazzoli [a]	In press, J.Mol.Spectr.
C_6H_8O	3-cyclohexenone	D.Damiani [a,b]	In press, J.Mol.Spectr.
C_7H_{10}	3-cyclohexene-1-methylene	D.Damiani [a,b]	Submitted.
C_4H_8O	cis-crotyl alcohol	W.Caminati [c]	Submitted, J.Phys.Chem.
C_2H_7NS	2-amino-ethane thiol	W.Caminati [c]	Trideuterated species. In press, J.Mol.Str.
$C_3H_6O_3$	methylglycolate	W.Caminati [d]	Torsional interactions. Submitted.
C_3H_3NS	vinylisothiocyanate	W.Caminati	Syn conformer + exc. states.
C_6H_8Ge	phenyl germane	W.Caminati	Structure, V_6 barrier.
C_4H_7N	3-pyrroline	W.Caminati [d]	Ring puckering, H_N inversion.
$C_2H_5NO_2$	N-methoxyformamide	W.Caminati [d]	Manuscript in preparation.



[a] In collaboration with the Istituto di Spettroscopia Molecolare del CNR, Bologna.
[b] In collaboration with the Istituto di Chimica Industriale dell' Universita', Messina.
[c] In collaboration with the Dipartimento di Chimica Fisica ed Inorganica, Bologna.
[d] In collaboration with the Laboratorium fur Physikalische Chemie, ETH, Zurich.

Note: Only a reference participant is listed for each compound, even if most works are with multiple authorship.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_5H_9N	tertiary butyl cyanide	J.Galica S.Gierszal	linewidth studies in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2HBrO (BrHCCO)	bromoketene	N. Westwood W. Lewis-Bevan	Manuscript submitted
C_3H_5Br	bromocyclopropane	H. Li (with N. Heineking, H. Dreizler, Kiel)	High order quadrupole coupling analysis
CHNO	isocyanic acid	S. Howard, M. Gerry (with N. Heineking, Kiel)	^{17}O, D species analyzed.
$C_3H_3N(CH_2CHCN)$	acrylonitrile	E. Tien R. Richards	Isotopic substitutions Ms. in preparation
$CH_3NO(CH_2NOH)$	formaldoxime	N. Lee H. Jemson D. MacLennan	Isotopic substitutions. Spectra analysed
CCℓNS(CℓNCS)	chlorine thiocyanate	R. Richards	Isotopic substitutions
CH_3N_3 HN_3	methyl azide hydrazoic acid	M. Gerry N. Heineking	^{14}N hyperfine analysis at U. of Kiel
C_2N_2 (CNCN)	cyanogen isocyanide	M. Gerry (with M. Winnewisser F. Stroh, Giessen)	^{14}N hyperfine analysis at U. of Kiel

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2HF_3O(\overline{CHFCF_2O})$	Trifluoroethylene Oxide	T. Raw	J. Mol. Spectrosc. 128, 195 (1988).
$C_2H_4O_3(\overline{CH_2CH_2OOO})$	1,2,3-Trioxolane	J. Z. Gillies R. Suenram* F. Lovas*	J. Am. Chem. Soc. 110, 7991 (1988).
CH_3ArNO	Argon-formamide complex	R. D. Suenram* G. T. Fraser* F. J. Lovas* J. Zozom	J. Chem. Phys. 89, 6141 (1988).
CH_4ArO	Argon-methanol complex	R. D. Suenram* G. T. Fraser* F. J. Lovas* J. Z. Gillies	Manuscript in preparation.
$C_2H_4O_3$	Ethylene-ozone complex	J. Z. Gillies R. D. Suenram* F. J. Lovas* W. Stahl**	J. Am. Chem. Soc., comm. in press (1989).
H_2O_4	Ozone-water complex	J. Z. Gillies R. D. Suenram* F. J. Lovas*	Manuscript in preparation.
$C_2H_2O_3$	Acetylene-ozone complex	J. Z. Gillies F. J. Lovas* K. Matsumura * R. D. Suenram*	Normal, d_1 and d_2 isotopes assigned
$CH_3F_2O_2P(CH_3OP(O)F_2)$	Methyl Difluorophosphate	L. Rickus H. Justnes J. Zozom R. Suenram* F. Lovas*	Manuscript in preparation.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_2F_4(\overline{CF_2CHFCHF})$	cis-1,2,3,3-Tetra-fluorocyclopropane	R. Beauchamp J. Gillies	Manuscript in preparation

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2F_6NO((CF_3)_2NO)$	bis-trifluoromethyl-nitroxide radical	R. M. White	Manuscript in preparation
$C_4H_6N((CH_3)_2CCN)$	2-cyano-2-propyl radical	R. C. Claytor	Manuscript in preparation

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR*	PRESENT STAGE OF PROGRESS
C_2HNO_2	OCO-HCN linear dimer	T. D. Klots	Manuscript accepted by JCP
C_3H_3Si [$(CH_3)_2Si{=}CH_2$]	dimethylsilaethylene	H. S. Gutowsky T. Emilsson	Communic. accepted by JACS; detailed analysis in progress
Ar_2ClD & Ar_3ClD	Ar_2-DCl trimer & Ar_3-DCl tetramer	T. D. Klots	Manuscript submitted to JCP
C_3HNO_4	HCN-$(CO_2)_2$ trimer	Jane Chen	Observation and analysis of spectrum in progress
C_4HNO_6	HCN-$(CO_2)_3$ tetramer	P. J. Hajduk	Observation and analysis of spectrum in progress
CF_2 & C_2F_4 [CF_2 & CF_3CF]	difluorocarbene and perfluoromethyl carbene	Carl Chuang	Observation and analysis of spectra in progress
B_2ClH_7 [B_2H_6-HCl]	bent diborane-HCl dimer	Carl Chuang	Observation and analysis of spectra in progress
CFH_5N_2	NH_3-HCN-HF trimer	T. D. Klots	Manuscript in progress
C_2FH_2NO	OC-HCN-HF trimer	T. D. Klots	Manuscript in progress
$C_2H_2N_4$	N_2-HCN-HCN trimer	R. Ruoff	Manuscript in progress
$C_3H_2N_2O$	OC-HCN-HCN trimer	T. Emilsson	
$C_2H_5N_3$	NH_3-HCN-HCN trimer		
$C_2H_4N_2O$	H_2O-HCN-HCN trimer		

*Most of this work is a group effort with multiple authorship. Only one or two of several participants are listed for each study.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3F_2O	Difluoropropadienone	Tam	Assignment Underway
$C_5H_5N(C_4H_5CN)$	Cyanobicyclobutane	Taylor, Harmony	Manuscript being finalized

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CHF_3	Fluoroform	D. Hausamann	FIR spectrum, new lines assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_8O(CH_3CH_2OCH=CH_2$	ethyl vinyl ether	Hayashi, Kakumoto	r_s structure
C_2H_5F	ethyl fluoride	Hayashi, Miyazaki	Fermi resonance
CH_5SiBr	methyl bromosilane	Hayashi, Ikeda	r_s structure
$C_3H_{10}Si(CH_3CH_2SiH_2CH_3)$	ethyl methyl ether	Hayashi, Ikeda	r_s structure
$C_3H_{10}Si(CH_3CH_2CH_2SiH_3)$	propyl silane	Hayashi, Ikeda	r_s structure
C_3H_7I	propyl iodide	Hayashi	eQq, r_s structure
C_3H_8O	ethyl methyl ether	Hayashi	excited states

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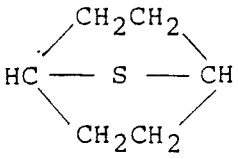
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_5H_8 $[CH_2{=}CHCH_2CH{=}CH_2]$	1,4-pentadiene	E. Hirota	One rotamer assigned.
$C_6H_{10}S$ 	7-thiabicyclo [2.2.1]heptane	K. Irie	Work in progress.
HNO	nitroxyl	K. Takagi S. Saito	Manuscript in preparation.
ClOS[ClSO]	ClSO radical	S. Saito	Work almost completed.
CD_3O	methoxy radical-d_3	Y. Endo	Manuscript in preparation.
CH_3CO	acetyl radical	Y. Endo	Work in progress.
$F_3Si[SiF_3]$	silicon trifluoride	M. Tanimoto	Assigned.
$C_2D[CCH]$	ethynyl radical	Y. Endo	Manuscript in preparation.
$C_4H_6D_2$	cyclobutane-1,2-d_2	E. Hirota	cis, work in progress.
$C_4H_4D_4$	cyclobutane-1,1,3,3-d_4	E. Hirota	Work almost completed.

NaO	sodium monoxide	C. Yamada	Paper accepted in J.Chem.Phys.
LiO	lithium monoxide	C. Yamada	Paper accepted in J.Chem.Phys.
KO	potassium monoxide	C. Yamada	$^2\Pi, ^2\Sigma^+$ assigned.
RbO	rubidium monoxide	C. Yamada	Assigned.
AlO	aluminum monoxide	C. Yamada	Assigned.
Cl_2Si $SiCl_2$	silicon dichloride (dichlorosilylene)	M. Fujitake	Work almost completed.
ClFSi SiFCl	silicon chloride fluoride (chlorofluorosilylene)	M. Fujitake	Assigned.
CCl_2	dichlorocarbene	M. Fujitake	Assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
YO	Yttrium monoxide	Törring, Fehlhammer	rot. spectrum, Hfs assigned
InCl	Indium monochloride	Hoeft, K.P.R. Nair	Chem.Phys.Lett. (in press)
InBr	Indium monobromide	Hoeft, K.P.R. Nair	manuscript in preparation

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Formula		Name of Compound	Name of Investigator	Present Stage of Progress
C_2H_5NO	CH_3CH_2NO	Nitrosoethane	M Maier D Milverton	See also* A P Cox
$C_5H_{10}Si$	$(CH_3)_3SiC{\equiv}CH$	Trimethylsilyl -ethyne	A Alexander D R M Walton	ms in prep
C_6H_9NSi	$(CH_3)_3SiC{\equiv}CCN$	Trimethylsilyl -cyanoethyne	"	"
C_8H_9NSi	$(CH_3)_3Si(C{\equiv}C)_2CN$	Trimethylsilylcyano -cyanoethyne	"	"*
CF_2HP	$CF_2{=}PH$	2,2-Difluorophospha -ethene	J F Nixon N P C Simmons	ms in prep
$BrCH_2P$	$CH_2{=}PBr$	1-Bromophospha -ethene	J F Nixon O Ohashi	ms in prep*
CFH_2P	$CH_2{=}PF$	1-Fluorophospha -ethene	J F Nixon O Ohashi D R M Walton	submitted
C_2F_3P	$CF_3C{\equiv}P$	3,3,3-Trifluoro-1-phosphapropyne	J F Nixon N P C Simmons	ms in prep*
C_2NP	$N{\equiv}C{-}C{\equiv}P$	C-Cyanophospha -ethyne	O Ohashi J F Nixon	ms in prep*
BFS	FB=S	Fluorosulphido -boron	T Cooper	ms in prep*
BBrS	BrB=S	Bromosulphido -boron	T Cooper	ms in prep*
BClSe	ClB=S	Chloroselenido -boron	M King	in prog*
C_3HNO	$HC{\equiv}CNCO$	Isocyanatoethyne	T Cooper D R M Walton	ms in prep
C_4H_3NO	$CH_3C{\equiv}CNCO$	Isocyanatopropyne	S Aziz M Durrant D R M Walton	ceased
$AlC_3H_{12}N$	$(CH_3)_3NAlH_3$	Trimethylaminoalane	C Kirby D Smith	Broadband

Formula		Name of Compound	Name of Investigator	Present Stage of Progress
C_5H_3N	$CH_2{=}CHC{\equiv}CCN$	1-Cyano-but-3-en-i-yne	K Phillips D R M Walton D McNaughton	submitted
C_5H_3N	$HC{\equiv}CCH{=}CHCN$	1-Cyano but-1-en-3-yne	J August D McNaughton	submitted
C_4H_3N	$HC{\equiv}CCH_2NC$	1-isocyano prop-2-yne	N Romeril M F Lappert D McNaughton	ms complete
C_3H_3N	$HC{\equiv}CCH{=}NH$	C-ethynyl methanimine	D McNaughton O Osman	submitted
C_5H_9N	$CH_3CH_2CH_2CH_2CN$	Valeronitrile	J August K Georgiou A C Legon	in prog.

* some preliminary data in Chem.Soc.Revs., 11, 435 (1982)

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_4O_3$	cyclobutadiene ozonide	Lorencak	In press, JPC
C_4H_8O	1-butene oxide	Badawi	2 Isotopes
$C_7H_{12}O$	8-oxabicyclo[3.2.1] octane	Badawi, Lorencak, H Wieser (Calgary)	Assigned
$C_4H_3F_3$	2,3,3-trifluorocyclobutene	Lorencak, Sibley, Craig (Oberlin)	Assigned
$C_3H_9BF_3N$	trimethylamine-BF_3	Riggs, LaBarge, Dreizler (Kiel)	eQq analysis
$C_5H_{10}O$	pivaldehyde	Cox (Bristol)	^{13}C Isotopes
$C_4H_4O{\cdot}Ar$	argon-furan complex	Oh	Dipole and CD analysis
$C_4H_5N{\cdot}Ar$	argon-pyrrole complex	Oh	Dipole and CD analysis
$Ar{\cdot}F_3P$	argon-PF_3 complex	LaBarge, Bohn, Taleb-Bendiab	Dipole, CD, etc. In press, JCP
$F_3{\cdot}KrP$	krypton-PF_3 complex	LaBarge, Bohn, Taleb-Bendiab	Dipole, eQq, CD, etc. In press, JCP
F_3NeP	neon-PF_3 complex	Hillig	Assigned
H_2F_3OP	water-PF_3 complex	LaBarge, Hillig	Assigned
$C_3H_9NO_2S$	trimethylamine-SO_2	Oh	Isotopes
$C_4H_4NO_2S$	pyridine-SO_2 complex	Oh	Assigned
$C_2H_4O_2S$	ethylene-SO_2 complex	Andrews, LaBarge	Isotopes
$C_6H_6O_2S$	benzene-SO_2 complex	Taleb-Bendiab, LaBarge	Assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2O_2	Formic Acid (IR)	Bumgarner, Choe	MS Accepted
DFN_2O	N_2O - DF Complexes	D. Pauley	MS Accepted
CO	Co - Intercomb. Bands	Choe, Lee, LeFlock	MS Accepted

29 Name to whom queries should be addressed R.M. Lees or K.V.L.N. Sastry

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_4O (CD_3OH)	Methanol	R.M. Lees M. Mollabashi (with I. Mukhopadhyay, UBC and J. Johns, Herzberg Inst.)	Fourier transform FIR and laser assignments
CD_3OH, $^{13}CH_3OH$, $^{13}CD_3OH$	"	K.V.L.N. Sastry J. VanderLinde R.M. Lees	Dipole moment measurements
$CH_3{}^{18}OH$	"	R.M. Lees (with W. Lewis-Bevan, Southern Illinois U.)	FTIR and FTFIR and FIR laser assignments
CH_5N (CH_3NH_2)	Methylamine	R.M. Lees K.V.L.N. Sastry (with W. Lewis-Bevan)	Spectrum assigned FIR laser assignments

30 Name to whom queries should be addressed A.C. Legon

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ClH_3O	$H_2O\cdots HCl$	L.C. Willoughby	Manuscript in preparation
BrH_3O	$H_2O\cdots HBr$	A.P. Suckley	Preliminary publication: *Chem. Phys. Letters*, **150**, 153, (1988).
ClH_4N	$H_3N\cdots HCl$	N.W. Howard	Paper published: *J. Chem.Phys.*, **88**, 4694, (1988)
ClH_4P	$H_3P\cdots HCl$	L.C. Willoughby	Manuscript in preparation.
H_4IP	$H_3P\cdots HI$	N.W. Howard	Spectrum assigned.
H_3IS	$H_2S\cdots HI$	A.P. Suckley	Spectrum assigned.
$BrHN_2$	$N_2\cdots HBr$	N.W. Howard	Paper published: *J.Chem.Phys.* **90**, 672, (1989).
$ClHO_2S$	$SO_2\cdots HCl$	A.J. Travis	Further work.
$CHArF_3$	$Ar\cdots HCF_3$	E.J. Goodwin	Spectrum assigned.
C_2H_5N	$CH_4\cdots HCN$	A.L. Wallwork	Assigned. Isotopic work in progress
$C_2H_2O_2S$	$(SO_2,HCCH)$	N.W. Howard	Spectrum observed.
C_2O_3	$OCO\cdots CO$	A.P. Suckley	IR and MW spectra assign. Isotopic work in progress.
$C_2H_3F_3$	$CH_2CF_2\cdots HF$	Z. Kisiel	Spectrum assigned.
$C_2H_4F_2$	$CH_2CHF\cdots HF$	Z. Kisiel	Search in progress.
C_2H_3ArF	$CH_2CHF\cdots Ar$	Z. Kisiel	Spectrum assigned.
C_3H_3O	$(H_2CO,HCCH)$	N.W.Howard	Paper published: *J.Chem.Phys.*, **88**, 6793, (1988).

[Continued over page]

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_5Cl	$H_2C{=}C{=}CH_2$ ···HCl	A.J. Travis	Spectrum assigned.
$C_3H_{10}ClN$	$(CH_3)_3N$···HCl	C.A. Rego	Preliminary publication: *Chem.Comm.*, 1496, (1988).
$C_3H_{10}BrN$	$(CH_3)_3N$···HBr	C.A. Rego/ A.L. Wallwork	Assigned. ^{14}N/ Br nuclear quadrupole hfs analysed.
CH_6ClN	CH_3NH_2···HCl	C.A. Rego	Assigned. Isotopic work in progress.
$C_4H_{10}N_2$	$(CH_3)_3N$···HCN	C.A. Rego	Paper published: *J.Chem.Phys.*, **89**, 696, (1988).
C_4H_9NSi	$(CH_3)_3SiCN$	C.S. Cooper	^{14}N - nuclear quadrupole coupling.
$C_5H_{11}N$	$(CH_3)_3N$···HCCH	C.A. Rego	Paper published: *J. Mol. Structure*, **189**, 137, (1988)
$C_5H_{10}FN$	$(CH_3)_3CCN$···HF	N. Gerry	Spectrum assigned. Manuscript in preparation.
C_5H_9N	$(CH_3)_3CNC$	A.L. Wallwork	Heavy atom r_s - geometry; paper in press: *J.Mol.Structure*.
$C_7H_{13}N$	1 - azabicyclo[2.2.2] octane	M.Ellis	^{14}N-nuclear quadrupole coupling.
$C_{10}H_{15}Cl$	1 - chloroadamantane	M. Ellis	Cl - nuclear quadrupole coupling.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_9H_{14}O$	Bicyclo[3,3,1]nonan-9-one	San Li	Submitted
$C_3H_5Cl_3O$	2,2,2-Trichloroethylmethyl ether	G. Lui J. Lu	Assigned
$C_8H_{14}O$	4-Ethylcyclohexanone	Arthur Lee	Assigned
$C_7H_{10}O$	3-Methyl-2-Cyclohexen-1-one	San Li	Assigned
CH_3F_2P	Difluoromethylphosphine	W. Wang R. A. Beaudet Y. S. Li	Submitted
C_2H_7SiI	Dimethylsilyliodide	P. Gironer J. R. Durig Y. S. Li	Quadrupole
$C_3H_5F_3O$	2,2,2-Trifluoroethylmethyl ether $CF_3CH_2OCH_3$	J. R. Durig Y. S. Li	Assigned

32 Name to whom queries should be address F. J. Lovas and R. D. Suenram

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$Ar\text{-}H_2O$	Argon water complex	R.D. Suenram F.J. Lovas	Four isotopic species assigned.
ArO_2S $(Ar\text{-}SO_2)$	Argon sulfur dioxide complex	L. Coudert K. Matsumura	New rotational measurements and tunneling analysis, $Ar^{34}SO_2$ assigned.
CH_2O_2 $(CO\text{-}H_2O)$	Water carbon monoxide complex	D. Yaron[a] K.I. Peterson[b] D. Zolandz[a] W. Klemperer[a] R.D. Suenram F.J. Lovas	Normal, deuterated, ^{17}O, and ^{18}O isotopic species assigned. Tunneling motion and structure analysis, manuscript in prep.
CH_2O_2S $(H_2S\text{-}CO_2)$	Hydrogen sulfide carbon dioxide complex	J.K. Rice[c] F.J. Lovas R.D. Suenram L.H. Coudert K. Matsumura W. Stahl[d] D.J. Pauley[e] S. Kukolich[e]	Rotational spectrum for 3 isotopic species assigned. Tunneling motions and structure analyzed. Manuscript in prep.
$C_2H_2O_3$ $(O_3\text{-}HCCH)$	Ozone-acetylene complex	J.Z. Gillies[f] C.W. Gillies[f] F.J. Lovas K. Matsumura R.D. Suenram	Rotational spectrum for 3 isotopic species assigned. Structure and dipole determined. Manuscript in prep.

[a]Department of Chemistry, Harvard University, Cambridge, MA.
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[c]Naval Research Laboratory, Washington, D.C.
[d]Institute for Physical Chemistry, University of Kiel, Germany.
[e]Department of Chemistry, University of Arizona, Tucson, AZ.
[f]Department of Chemistry, Rensselaer Polytechnic Inst., Troy, NY.
[g]Department of Chemistry, Wesleyan University, Middletown, CT.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_4O_2$ $((H_2CO)_2)$	Formaldehyde dimer	F.J. Lovas R.D. Suenram L.H. Coudert T.A. Blake[g] K.G. Grant[g] S.E. Novick[g]	Rotation-tunneling spectrum assigned for normal and perdeuterated species. Manuscript in prep.
$C_2H_4O_3$ $(O_3\text{-}H_2CCH_2)$	Ozone ethylene complex	J.Z. Gillies[f] C.W. Gillies[f] R.D. Suenram F.J. Lovas W. Stahl[d]	Rotational spectrum for 3 isotopic species assigned. Manuscript submitted to J. Am. Chem. Soc.
C_2Si (SiC_2)	Silicon dicarbide	R.D. Suenram F.J. Lovas K. Matsumura	Produced by laser ablation, J=1-0 transition measured for ^{28}Si, ^{29}Si and ^{30}Si isotopes. Dipole determined.
$ClFH_2$ (HF-HCl and HCl-HF)	Hydrogen fluoride Hydrogen chloride complex	G.T. Fraser A. Pine	K=1 spectrum of HF-HCl assigned, K=0,1 spectrum observed for HCl-HF. Manuscript submitted to JCP.
H_2O_3S $(H_2O\text{-}SO_2)$	Water-sulfur dioxide complex	K. Matsumura F.J. Lovas R.D. Suenram	Tunneling rotation spectrum assigned for 3 isotopic species. Manuscript submitted JCP.
H_2O_4 $(O_3\text{-}H_2O)$	Ozone-water complex	J.Z. Gillies[f] C.W. Gillies[f] R.D. Suenram F.J. Lovas	Rotational spectrum for 3 isotopic species assigned. Manuscript in prep.
H_4O_2 $(H_2O)_2$	Water dimer	G.T. Fraser R.D. Suenram L.H. Coudert	A_1 state and c-type spectrum assigned. Manuscript submitted to JCP.
$(D_2O)_2$	Perdeutero-water dimer	R.D. Suenram G.T. Fraser F.J. Lovas	A_2 and B_2 states assigned and K=1 transitions for all states observed.

33 Name to whom queries should be addressed B. MACKE

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_2O	water vapor	A. Bauer, M. Godon, J. Carlier	Lineshape
MgCl	magnesiumchloride		mm wave spectrum
$C_2H(^{13}CCH, C^{13}CCH)$	ethynyl radical	M. Bogey	" " "
N(I)	nitrogen atom	H. Bolvin	" " "
$C_2HNS(HCSCN)$	thioformyl cyanide	C. Demuynck	" " "
C_5H_6	cyclopentadiene	J.L. Destombes	" " "
ArH_3^+			H/D forms mm, submm wave spectra
C_4H_6O 	2,5 dihydrofuran	in collaboration with Valladolid	mm wave spectrum ring puchering
	2,3 dihydrofuran		" " "
$C_2D_3N(CD_3CN)$	methyl cyanide, d_3	J. Burie	excited states
C_2H_2O 	cyclopropenone	J. Demaison	mm wave spectrum
GeH_3Cl	germyl chloride	G. Wlodarczak	" "
$C_4H_5N(CH_2CHCH_2CN)$	allyl cyanide		" "
$C_3H_6(CH_2CHCH_3)$	propene		internal rotation
$C_2H_3N(CH_3CN)$	methyl cyanide	F. Rohart	low temperature relaxation
$C_3HN(HC_3N)$	cyanoacetylene	D. Derozier	
$CH^{15}N(HC^{15}N)$	hydrogen cyanide	B. Segard	optical bistability

34 Name to whom queries should be addressed C. Matsumura, H. Takeo, M. Sugie

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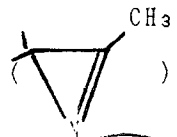
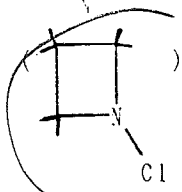
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_2N_2$ (HN=CHCN)	C-cyanomethanimine	H. Takeo	reaction mechanism
C_3H_2NCl (H-C≡C-CH=N-Cl)	N-chloropropargylimine	M. Sugie	spectrum assigned
C_3H_6O (CH_3CH=CHOH)	2-methylvinylalcohol	H. Takeo	spectrum assigned
C_3H_5N ()	2-methyl-3H-azirine	M. Sugie	manuscript in preparation
C_3H_6NCl ()	N-chloroazetidine	T. Egawa	joint analysis with electron diffraction

35 Name to whom queries should be addressed Professor D.J. Millen

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2FN {HCN···HF}	hydrogen-bonded complex of hydrogen cyanide and hydrogen fluoride	L C Willoughby	Further work on vibrational satellites and isotopic species
$C_2H_2N_2$ {HCN···HCN}	hydrogen-bonded dimer of hydrogen cyanide	K Georgiou	Further work in progress
C_3H_7FO {  O···HF}	hydrogen-bonded complex of oxetane and hydrogen fluoride	R A Collins	Further work on satellites
C_2H_7FO {$(CH_3)_2O$···HF}	hydrogen-bonded dimer of dimethyl ether and hydrogen fluoride	H M North Z Kisiel	Spectrum partially assigned
C_4H_4FN {CH_3CCCN···HF}	hydrogen-bonded complex of methylcyanoacetylene and hydrogen fluoride	K Georgiou H M North	Work in progress
$C_5H_{10}FN$ {$(CH_3)_3CCN$···HF}	hydrogen-bonded complex of t-butyl cyanide and hydrogen fluoride	S L A Adebayo L C Willoughby	Work in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_8OS ($CH_3SCH_2CH_2OH$)	2-(methylthio)ethanol	H. Møllendal	Acta Chem. Scand. 43 (1989) 26
C_3H_5NO	2-azetidinone	H. Møllendal	In press, Acta Chem. Scand.
$C_4H_{10}O_2$ ($CH_3OCH_2CH_2CH_2OH$)	3-methoxypropanol	H. Møllendal	In press, Acta Chem. Scand.
C_3H_8OS ($CH_3CH(OH)CH_2SH$)	1-mercapto-2-propanol	H. Møllendal	Writing up
C_5H_8O ($H_2C=CH-CH(OH)-CH=CH_2$)	1,4-pentadien-3-ol	H. Møllendal	Assigned
$C_4H_6O_2$	Cyclopropyl carboxylic acid	H. Møllendal	Partial assignment

37 Name to whom queries should be addressed *Dr. R. N. Nandi*

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_4BrN	*3-bromobenzonitrile*	*S. Maiti* *A. Datta* *A. I. Jaman*	*Inconsistent Spectra, work abandoned.*
C_4H_5NO	*Allyl Isocyanate*	*S. Maiti* *A. Datta* *A. I. Jaman* *R. N. Nandi*	*Work in progress.*
$C_7H_3F_2N$	*2,3-difluorobenzonitrile*		*Work started.*

38 Name to whom queries should be addressed Teruhiko OGATA

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_2ClF_3(CF_2Cl\text{-}CH_2F)$	1-Chloro-1,1,2-trifluoroethane	M. Yoshikawa	Manuscript in Preparation
C_4H_6 $(H_2C{=}C{=}CHCH_3)$	Methylallene	K. Matsui	^{13}C-2 isotope species in progress
C_4H_5F $(HC{\equiv}C\text{-}CHFCH_3)$	3-Fluoro-1-butyne	N. Yamada	Manuscript in preparation
C_3H_2ClF $(H_2C{=}C{=}CFCl)$	1-Chloro-1-fluoroallene	T. Fukukawa	Manuscript in preparation

39 Name to whom queries should be addressed H. M. Pickett, E. A. Cohen, R. L. Poynter

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$COF_2(OCF_2)$	Carbonyl fluoride	Cohen, L. Brown	Submm, I. R. (ν_1, $2\nu_2$)
BrHO (HOBr)	Hypobromous acid	G. McRae, Cohen in collaboration with Nat. Chem. Lab for Industry (Japan)	Rotational spectrum manuscript prepared. High resolution I.R. in preparation
Cl_2O_2 (ClOOCl)	Chlorine peroxide (ClO dimer)	M. Birk, R. Friedl, Cohen	Manuscripts in preparation
N_2O_5	Nitrogen pentoxide	Cohen (with M. Fujitake and E. Hirota, IMS)	In progress
NH_3 (H_3N)	Ammonia	Poynter, J. Margolis (with H. Sasada, Keio University)	ν_4, $2\nu_2$ manuscript in preparation

40 Name to whom queries should be addressed N.Pozdeev

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_3ClO(CH_3CClO)$	acetylchloride		centrif. dist., Starck effect
$C_4H_6ClO_2P((CH_3)_2CCOOPCl)$	4,5 dimethyl-2 chloride-1,3 dioxophospholen		assigned
C_4H_8O	tetrahydrofurane		rot.-vibr. in excited pseudo-rotational states
C_4H_8S	tetrahydrothiophene		

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2D_2O (CH_2DOD)	Methyl Alcohol	Chun Fu Su Dept. of Phys. Miss. State, MS 39762	a-dipole, 0-1, and one Q-type, gauche to gauche series for each molecule assigned.
CHD_3O (CHD_2OD)			

42 Name to whom queries should be addressed Dr. Jim Roberts

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$^{12}CH_3{}^{13}C^{15}N$	METHYL CYANIDE	M. Al-Share, H. S. Tam and J. A. Roberts	Rotational Components for $1 \leq J \leq 5$ measured and assigned for the ν_8 with v=2, 3. Large frequency departures $\approx 6(J+1)$MHz observed for some components.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_{12}S$	1-thia spiro (2-5) octane	H. BOULEBNANE E. ALAMI R. VILLAMAÑAN *	To be pulbished in J. Mol. Spectry
$C_8H_{14}O_2$	1-4 dioxa Spiro (4-5) decane	E. ALAMI G. ROUSSY	Work in progress
$C_8H_{14}S_2$	1-4 dithia spiro (4-5) decane	E. ALAMI G. ROUSSY	Work in progress
$C_4H_5O_2$	2-methyl-1,3 dioxolane	E. ALAMI G. ROUSSY	Work started
$C_5H_{10}O_2$	2,2-dimethyl-1,3 dioxolane	E. ALAMI G. ROUSSY	Work started

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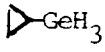
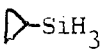
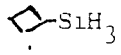
Formula	Name of Compound	Name of Investigator	Present state of Progress
AgH	Silver Hydride	H. Birk, H. Jones	Diode laser
BaH	Barium Monohydride	C. Magg, H. Birk H. Jones	Diode laser. Chem. Phys. Lett. **149**, 321 (1988)
CF_2	Difluoro carbene	H.Birk and H.Jones	Diode laser ν_1 in free expansion jet
CF_3J	Trifluoroiodo-methane	W.Höhe, L.Jörissen W.A.Kreiner (with H.Bürger, Wuppertal)	ν_1 fundamental
HCCl	Chlorocarbene	H.Birk and H.Jones	Diode laser ν_3
HCCF	Fluoroacetylene	J.Lindenmaier D.Papousek, H.Jones	Diode laser ν_3 paper ready
C_2H_7N ($H_3CCH_2NH_2$)	Ethylamine	E.Fischer, I.Botskor,H.D.Rudolph	ms in preparation
C_3H_3Cl ($HCCCH_2Cl$)	Propargyl-chlorid	L.Braun I.Botskor	ms in preparation
C_3H_7N ($H_2CCHCH_2NH_2$)	Allylamine	K.H.Wiedenmann, I.Botskor, H.D.Rudolph	structure evaluation work completed
C_3H_8Ge 	Cyclopropyl-germane	K.Epple, H.D. Rudolph	spectra of 31 isotopic species assigned, structure
C_3H_8Si 	Cyclopropyl-silane	J.Mennicke, B.Mir, H.D.Rudolph	spectra of several isotopic species, structure

$C_4H_{10}Si$ 	Cyclobutyl-silane	A.Ruck, B.Mir, H.D. Rudolph	heavy atom structure, additional isotopic species of both conformeres
CsH	Cesium Hydride	U. Magg and H. Jones	Diode laser Chem. Phys. Lett. **148**, 6 (1988)
GaH	Gallium Hydride	R-D. Urban, U. Magg, and H. Jones	Diode laser, Chem. Phys. Lett. **154**, 135 (1988) deuteride in progress
IF	Iodine Fluoride	K.P.R. Nair, U. Magg, H. Birk and H. Jones	Diode laser sub. Z. Naturforsch
InH	Indium Hydride	A. H. Bahnmaier, R-D.Urban, and H.Jones	Diode laser accepted Chem. Phys. Lett. deuteride in progress
PbH	Lead Hydride	U. Magg and H. Jones	Diode laser submitted Chem. Phys. Lett
PH_3	Phosphine	D. Papousek, H. Birk, U. Magg, and H. Jones	Diode laser A_1-A_2 splittings J.Mol.Spect in press
RbH	Rubidium Hydride	U. Magg, H. Birk, and H. Jones	Diode laser Chem. Phys. Lett. **151**, 503 (1988)
SrH	Strontium Hydride	U. Magg, H. Birk, and H. Jones	Diode laser Chem. Phys Lett. **151**, 263-266 (1988)
TlH	Thallium Hydride	R-D. Urban, U. Magg A.H.Bahnmaier,H. Jones	Diode laser sub. Chem. Phys. Lett. pot. function Deuteride in progress
ZnH	Zink Hydride	U. Magg, R.-D. Urban, H. Jones	Diode laser, ms in preparation

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H C_3D	C_3H radical	S. Yamamoto	Astrophys. J. Submitted.
C_2S(CCS)	CCS radical	S. Yamamoto S. Saito K. Kawaguchi*	^{34}S, ^{13}C species. Manuscript in preparation.
		M. Tanimoto** S. Saito S. Yamamoto K. Kawaguchi*	ν_1, ν_2, ν_3 excited states. Manuscript in preparation.
C_3H	Cyclic C_3H radical	S. Yamamoto	D, ^{13}C species. Manuscript in preparation.
CP	CP radical	S. Saito	Astrophys. J. in press.
C_2H_2N C_2D_2N	CH_2CN radical	S. Saito	Astrophys. J. 334, L113 (1988). H, D species. Manuscript in preparation.
CH_2N	CH_2N radical	S. Yamamoto	Manuscript in preparation.
HS_2	HS_2 radical	S. Yamamoto	Manuscript in preparation.
C_5H	C_5H radical	S. Takano	ν_9 excited state. Manuscript in preparation.
C_3H	C_3H radical	M. Kanada	^{13}C species, ν_4 excited states. Manuscript in preparation.
C_3N	C_3N radical	H. Mikami	ν_5 excited state. Astron. Astrophys. Lett. submitted.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CHN_2	HNCN radical	S. Yamamoto	Spectrum assigned.
H_2NS	H_2NS radical	S. Yamamoto	Spectrum assigned.
D_2N	NH_2-d_2 radical	M. Kanada	Manuscript in preparation.
CaS	Calcium sulfide	S. Takano	Manuscript in preparation.
MgS	Magnesium sulfide	S. Takano	Manuscript in preparation.
C_2DN	HCCN-d radical	F. X. Brown S. Saito	Spectrum assigned.
H_2NO	H_2NO radical	H. Mikami	Spectrum assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_3SCl 	3-chlorothiophene	Y. Sasada	Work in progress
C_4H_3SI 	2-iodothiophene	Y. Sasada Y. Niide I. Ohkoshi	Two excited states manuscript in preparation
C_4H_3SI 	3-iodothiophene	Y. Sasada Y. Niide I. Ohkoshi	Work in Progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CH_2O(CD_2O)$	Formaldehyde-d_2	S.-C. Hsu	IR-MW sideband lase ν_2 band, in press J Mol. Spectrosc.
$CH_3I(CD_3I)$	Methyl iodide-d_3	H.-G. Cho	IR-MW sideband lase IR-RF double resonance ν_2 band, in press J Mol. Spectrosc.
$H_3N(NH_3)$	Ammonia	Y. Matsuo S. K. Lee	IR-MW sideband lase
$CH_3F(^{13}CH_3F)$	Methyl fluoride	Y. Matsuo	IR-MW sideband lase IR-IR double resonance
CH_3F	Methyl fluoride	H.-G. Cho Y. Matsuo	IR-MW sideband lase $\nu_3+\nu_6-\nu_6$ band
$CH_3Br(CD_3Br)$	Methyl bromide-d_3	H. G. Cho	IR-MW sideband lase IR-RF double resonance ν_2 band
CH_3I	Methyl iodide	W. Fawzy	IR-RF double resonance Lineshape analysis
$CH_4O(CH_3OH)$	Methanol	D. Peterson	IR-MW double resonance ν_8 band
CF_3I	Trifluoromethyl iodide	D. Peterson	IR-MW double resonance ν_1 band

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$H_3N(NH_3)$	Ammonia	H.Odashima	Pressure-broadening parameter determined
COS(OCS)	Carbonyl Sulfide	H.Odashima	Pressure-broadening parameter determined

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_6O_2$	Meso-Bisoxirane (gauche form)		Assignments of a- and c-type transitions have been completed. (paper in preparation)
$CH_2H_6O_2$	dl-Bisoxirane (gauche form)		in progress
C_3H_5SCl	3-chloropropylene sulfide		Assignments of a- and b-type transitions have been completed. Calculation of coupling constant of Cl has been completed. (paper in preparation)

50 Name to whom queries should be addressed M. Takami

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$H_4Sn(SnH_4)$	Stannane	L.G.Jörissen Y.Ohshima	ν_1/ν_3 MW spectrum J.Chem.Phys. in press Extended analysis in progress
CF_4	Carbontetrafluoride	M.Takami	ν_3 MW spectrum extended analysis in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_4BrCl ($ClCH_2CH_2Br$)	1-Bromo-2-chloroethane	M. Takano I. Ohkoshi Y. Niide	In progress
C_2H_4FI (FCH_2CH_2I)	1-Iodo-2-fluoroethane	Y. Niide I. Ohkoshi	In progress
CH_2BrCl	Bromochloromethane	Y. Niide I. Ohkoshi	Manuscript submitted J. Mol. Spectrosc.
C_2H_2OBrCl ($BrCH_2COCl$)	Bromoacetyl Chloride	Y. Niide I. Ohkoshi	In progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_4	Allene	K. Tanaka	Vibrationally induced transitions. Manuscript in preparation.
$C_7H_6O_2$	Tropolone	H. Onaka	Ground state spectrum assigned.
C_4HF ($HC\equiv C-C\equiv CF$)	Fluorodiacetylene	T. Okabayashi	Submitted
C_3FN ($FC\equiv CC\equiv N$)	Fluorocyanoacetylene	T. Okabayashi	Excited vibrational states. Manuscript in preparation
CHNO (HCNO)	Fulminic acid	R. Takashi	LMDR (Laser-microwave double resonance) in progress
POF_3	Phosphoryl fluoride	K. Someya	LMDR manuscript in preparation
$SiHF_3$ ($SiHF_3$, $SiDF_3$)	Trifluorosilane	K. Harada	LMDR in progress
CH_3F (CH_3F, CD_3F)	Methyl fluoride	K. Harada	LMDR manuscript in preparation
CH_3I	Methyl iodide	K. Harada	LMDR in progress
C_2HF ($HC\equiv CF$)	Fluoroacetylene	Y. Nakahara	LMDR in progress
C_2H_3N (CH_3CN)	Methyl Cyanide	T. Oyama	LMDR in progress
C_2H_3N (CH_3NC)	Methyl Isocyanide	T. Oyama	LMDR manuscript in preparation

C_3HN (DC≡CC≡N)	Cyanoacetylene	K. Tanaka	LMDR in progress
CFN (FC≡N)	Cyanogen fluoride	S. Matsuba	LMDR in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
O_2S (SO_2)	Sulfur Dioxide	Y. Morino M. Tanimoto with S. Saito	r_e-structure potential function
$Cl_2Si(SiCl_2)$	Dichlorosilylene	M. Tanimoto with C. Matsumura H. Takeo, and M. Fujitake	manuscript in preparation
ClSi	Silicon monochloride	M. Tanimoto with S. Saito	v=1 spectrum observed
F_3Si (SiF_3)	Silicon trifluoride	M. Tanimoto with S. Saito	work in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_6H_5-CH_2X$	Benzyl Halides	S. A. Sorenson N. S. True	M.S. in preparation
$C(O)F-O-C(H)-CH_2$	Vinyl Fluoroformate	N. S. True	M.S. in preparation
$C(O)Cl-O-C(H)-CH_2$	Vinyl Chloroformate	N. S. True	Spectrum Assigned, ^{35}Cl & ^{37}Cl isotopes
$p-COH-C_6H_4-OCH_3$	p-Anisaldehyde	S. A. Sorenson N. S. True	M.S. in preparation

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_5N (CH_3NH_2, CH_3NHD)	Methylamine	K. Takagi S. Tsunekawa M. Iziri	Manuscript in Preparation
CH_4SH (CH_3SD, CD_3SH)	Methyl Mercaptan	T. Hayashi S. Tsunekawa K. Nakagawa(Zyousai Univ.)	Work in progress (CD_3SH species)
H_4N_2 (ND_2ND_2)	Hydrazine	S. Tsunakawa	Work in progress
C_2H_5O (CH_3CONH_2)	Acetamide	K. Nakagawa S. Tsunekawa	Excited State
CH_4O ($^{13}CH_3OH$, $CH_3{}^{18}OH$)	Methyl alcohol	K. Takagi M. Hayashi Y. Hoshino M. Ohishi	Work in progress

56 Name to whom queries should be addressed: Manfred Winnewisser

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STATE OF PROGRESS
C_2H_3NO (CH_3CNO)	Acetonitrile oxide	(J. Galica, Poznan) B. P. Winnewisser, M. Winnewisser	Exc. states MMW work in progress
C_3OS (OCCCS)	Tricarbon oxide sulfide	M. Winnewisser	Comb. states, MMW work in progress
CD_2N_2 (ND_2NC)	d_2-Isocyanamide	F. Stroh, M. Winnewisser	MMW work in progress
CH_2N_2 (HNCNH)	Carbodiimide	M. Birk, M. Winnewisser, (E. A. Cohen, JPL)	O^+, O^- states ass. in MMW, FIR MS in prep.
$C_2H_2N_2O$ ($NCCONH_2$)	Cyanoformamide	(J. J. Christiansen, Copenhagen)	Ground state and exc. states: MS in prep.
CH_4O_2 (CH_3OOH)	Methyl hydro-peroxide	C. E. Blom (M. Tyblewski, A. Bauder, Zürich)	Manus. in pre-paration
CH_4O_2 (CH_3OOD)	Methyl deutero-hydroperoxide	C. E. Blom	"
C_3H_4O (CH_2CHCHO)	Acrolein s-cis, s-trans conformers ass.	C. E. Blom	Exc. states of
CHNO (HCNO)	Fulminic acid	G. Wagner, J. Preusser, M. Winnewisser B. P. Winnewisser	^{13}C, ^{15}N species meas. in progress, l-type doublets assigned.
C_2N_2 (CNCN)	Isocyanogen	F. Stroh, M. Winnewisser, (M.C.L.Gerry, Vancouver)	MW and MMW lines assigned, ^{14}N hpf resolved with FT in Kiel.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
NO	Nitric Oxide	A. Saleck	^{18}O, ^{15}N measured in mmw.
H_2S_2	Hydrogen disulfied	P. Mittler	^{34}S, D, and Ex.St. measured in mmw.
H_2S_3	Hydrogen trisulfied	D. Mauer	Papers published.
H_2S_4	Hydrogen tetrasulfied	A. Saleck	Measurement in progress in mmw.
H_2C_2O	Ketene	T. Wang	Ex.St. in mmw. Work in progress.

(continued)

C_7H_4ClN	2-Chlorobenzonitrile	M.Onda	hfs in progress
C_7H_5NO	Phenyl cyanate	M.Onda	ms in prep.
$C_7H_6O_2$	Benzoic acid	M.Onda	Isotopic species in progress
$C_7H_6O_3$	Salicylic acid	M.Onda	in progress
C_7H_6OS	Thiobenzoic acid	M.Onda	Spectr. assigned
C_7H_7Cl	Benzyl chloride	K.Suga	in progress
C_7H_8O	Anisole	M.Onda	CD_3, excited state ms in prep.
C_7H_8O	Benzyl alcohol	K.Suga	in progress
C_8H_7N	Benzyl cyanide	K.Suga	Spectr. assigned
C_8H_8O	Acetophenone	M.Onda	ms in prep.
$C_{12}H_9F$	4-Fluorobiphenyl	M.Onda	Spectr. assigned

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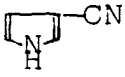
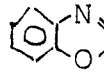
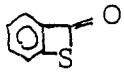
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_6OS (CH_3CH_2COSH)	Thiopropionic acid	I.Yamaguchi	in progress
C_2H_4OS ($HSCH_2CHO$)	Mercaptoacetaldehyde	H.Hatcho I.Yamaguchi	in progress
$C_2H_4O_2S$ ($HSCH_2COOH$)	Mercaptoacetic acid	I.Yamaguchi	in progress
$C_4H_6O_2$ ($CH_3CH=CHCOOH$)	2-Butenoic acid	I.Yamaguchi	J.Mol.Struct. 190, 377(1988)
C_4H_7NO ($CH_3CH=CHCH=NOH$)	Crotonaldehyde oxime	M.Hamano	ms in prep.
C_4H_7NO ($CH_2=C(CH_3)CH=NOH$)	syn-2-Methylacrylaldehyde oxime	Y.Yanagawa	ms in prep.
C_4H_9NO ($CH_3(CH_2)_2CH=NOH$)	Butyraldehyde oxime	O.Ohashi	in progress
C_5H_9NO ($\overline{CH_2(CH_2)_3C=NOH}$)	Cyclopentanone oxime	A.Murakami	ms in prep.
$C_6H_{11}NO$ ($\overline{CH_2(CH_2)_4C=NOH}$)	Cyclohexanone oxime	O.Ohashi	ms in prep.
C_4H_7NO ($\overline{HNCH_2(CH_2)_2C=O}$)	2-Pyrrolidone	O.Ohashi	ms in prep.
C_5H_9NO ($\overline{HNCH_2(CH_2)_3C=O}$)	2-Piperidone	O.Ohashi	assigned
C_6H_9NO ($\overline{CH_2(CH_2)_2CHCHC=NOH}$)	2-Cyclohexen-1-one oxime	Y.Sato	assigned
C_4H_9NO ($(CH_3)_2CHCH=NOH$)	Isobutyraldehyde oxime	A.Murakami	assigned
C_3H_7ND ($CH_3CH_2CH=NOH$)	E-sp-Propionaldehyde oxime	F.Kato	assigned
CHNS (HSCN)	Thiocyanic acid	T.Sakaizumi	in progress
C_2H_3NO (CH_3OCN)	Methyl cyanate	H.Mure T.Sakaizumi	^{14}N, ^{15}N assigned
C_3H_5NO (CH_3CH_2OCN)	Ethyl cyanate	H.Mure T.Sakaizumi	ms in prep.
$C_5H_4N_2$ ()	Diazocyclopentadiene	S.Fukuda T.Sakaizumi	ms in prep.
$C_5H_4N_2$ ()	Pyrrole-2-carbonitrile	T.Sakaizumi	ms in prep.
$C_6H_4N_2S$ ()	1,2,3-Benzothiadiazole	T.Sakaizumi	ms in prep.
C_7H_4OS ()	Benzothiet-2-one	S.Fukuda T.Sakaizumi	assigned

FORMULA INDEX

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C_2HFO - fluoroketene - 7

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$C_2HF_3O_2$ - trifluoroacetic acid - 4

C_2HI - iodoacetylene - 13

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C_2H_2FN - fluoroacetonitrile - 13

C_2H_2FNO - OC-HCN-HF trimer - 20

C_2H_2N - CH_2CN radical - 45

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$C_2H_2N_4$ - N_2-HCN-HCN trimer - 20

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$C_2H_2O_3$ - acetylene-ozone complex - 18,32

C_2H_3ArF - CH_2CHF-Ar complex - 30

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$C_2H_3F_3$ - 1,1,1-trifluoroethane - 4

$C_2H_3F_3$ - CH_2CF_2-HF complex - 30

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C_2H_3NO - methyl cyanate - 58

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$C_2H_3N_3$ - 1H-1,2,3-triazole - 10

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C_2H_3O - acetyl radical - 24

C_2H_4BrCl - 1-bromo-2-chloroethane - 51

C_2H_4FI - 2-iodo-1-fluoroethane - 51

C_2H_4FNO - 2-fluoroacetamide - 13

$C_2H_4F_2$ - CH_2CHF-HF complex - 30

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$C_2H_4O_2$ - formaldehyde dimer - 32

$C_2H_4O_2S$ - ethylene-SO_2 complex - 27

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C_3F_2O - difluoropropadienone - 21

C_3H - C_3H radical - 45

C_3H - cyclic C_3H radical - 45

C_3HN - cyanoacetylene - 13,33,52

C_3HNO - isocyanatoethyne - 26

C_3HNO_4 - HCN-$(CO_2)_2$ trimer - 20

C_3H_2ClF - 1-chloro-1-fluoroallene - 38

C_3H_2ClN - chloroacrylonitrile - 13

C_3H_2ClN - N-chloropropargylimine - 34

$C_3H_2F_4$ - cis-1,1,2,3-tetrafluorocyclopropane - 18

$C_3H_2N_2$ - malononitrile - 11

$C_3H_2N_2O$ - OC-HCN-HCN trimer - 20

C_3H_2O - cyclopropenone - 33

$C_3H_2O_4$ - 1,3-dioxolane-4,5-dione - 10

C_3H_3Cl - propargyl chloride - 44

$C_3H_3ClO_2$ - vinyl chloroformate - 54

$C_3H_3FO_2$ - vinyl fluoroformate - 54

$C_3H_3F_3O_4$ - formic acid-trifluoroacetic acid dimer - 4

C_3H_3N - acrylonitrile - 17

C_3H_3N - C-ethynylmethanimine - 26

C_3H_3NS - vinylisothiocyanate - 15

C_3H_4 - allene - 4,13,52

C_3H_4 - propyne - 13

C_4H_8O - tetrahydrofuran - 40

C_4H_8O - 3-methyloxetane - 1

C_4H_8O - 2-methyloxetane - 1

$C_4H_8O_2$ - 2-methyl-1,3-dioxolane - 43

C_4H_8S - tetrahydrothiophene - 40

$C_4H_9BF_2$ - t-butylborondifluoride - 11

C_4H_9Br - t-butyl bromide - 13

C_4H_9Cl - 2-chloro-2-methylpropane - 8

C_4H_9F - 2-methyl-1-fluoropropane - 14

C_4H_9N - pyrrolidine - 13

C_4H_9NO - trimethylnitrosomethane - 11

C_4H_9NO - morpholine - 13

C_4H_9NO - butyraldoxime - 58

C_4H_9NO - isobutyraldoxime - 58

$C_4H_9NO_2$ - t-butylnitrite - 11

C_4H_9NSi - trimethylsilyl cyanide - 30

C_4H_{10} - butane - 13

$C_4H_{10}Ge$ - cyclobutylgermane - 14

$C_4H_{10}N_2$ - $(CH_3)_3N$-HCN complex - 30

$C_4H_{10}O_2$ - 3-methoxypropanol - 36

$C_4H_{10}Si$ - cyclobutylsilane - 44

C_5H - C_5H radical - 45

C_5H_3N - 1-cyano-but-3-en-1-yne - 26

C_5H_3N - 1-cyano-but-1-en-3-yne - 26

C_5H_3NO - 2-cyanofuran - 13

$C_5H_4N_2$ - diazocyclopentadiene - 58

$C_5H_4N_2$ - pyrrole-3-carbonitrile - 58

$C_5H_4N_2O_2$ - p-nitropyridine - 1

C_5H_5N - cyanobicyclobutane - 21

C_5H_5NO - 2-formyl pyrrole - 13

C_5H_5NO - pyridine-N-oxide - 13

$C_5H_5NO_2S$ - pyridine-SO_2 complex - 27

$C_5H_5N_5$ - adenine - 7

C_5H_6 - cyclopentadiene - 33

$C_5H_6N_2O_2$ - thymine - 7

C_5H_7ClO - cyclobutylcarbonyl chloride - 14

C_5H_7NO - furfurylamine - 10

C_5H_8 - 1,4-pentadiene - 24

C_5H_8O - cyclobutylcarboxaldehyde - 14

C_5H_8O - 1,4-pentadien-3-ol - 36

$C_5H_8O_2$ - α-methyl-γ-butyrolactone - 1

C_5H_9Cl - chlorocyclopentane - 14

C_5H_9N - t-butyl cyanide - 16

C_5H_9N - valeronitrile - 26

C_5H_9N - t-butyl isocyanide - 30

C_5H_9NO - cyclopentanone oxime - 58

C_5H_9NO - 2-piperidone - 58

$C_5H_{10}FN$ - $(CH_3)_3CCN$-HF complex - 30

$C_5H_{10}FN$ - t-butyl cyanide-HF complex - 35

$C_5H_{10}N_2O$ - N-nitrosopiperidine - 6

$C_5H_{10}O$ - pivaldehyde - 11,27

$C_5H_{10}O_2$ - 2,2-dimethyl-1,3-dioxolane - 43

$C_5H_{10}Si$ - trimethylsilylacetylene - 13,26

$C_5H_{11}N$ - piperidine - 13

$C_5H_{11}N$ - $(CH_3)_3N$-HCCH complex - 30

$C_6H_4Cl_2$ - 1,2-dichlorobenzene - 13

$C_6H_4Cl_2$ - 1,3-dichlorobenzene - 13

$C_6H_4N_2S$ - 1,2,3-benzothiadiazole - 58

$C_6H_5BF_2$ - phenyldifluoroborane - 13

C_6H_5Cl - chlorobenzene - 13

C_6H_5F - fluorobenzene - 4

C_6H_5NO - 3-formylpyridine - 13

C_6H_5NO - 4-formylpyridine - 13

$C_6H_5NO_2$ - nitrobenzene - 13

$C_6H_5NO_3$ - o-nitrophenol - 13

C_6H_6 - benzene - 4,13

$C_6H_6O_2S$ - benzene-SO_2 complex - 27

C_6H_7N - aniline - 13

C_6H_7NO - 2-picoline-N-oxide - 13

C_6H_8Ge - phenyl germane - 15

C_6H_8O - 3-cyclohexenone - 15

C_6H_9NO - 2-cyclohexen-1-one oxime - 58

$C_6H_9NO_2$ - 1-nitrocyclohexene - 1

C_6H_9NSi - trimethylsilylcyanoethyne - 26

$C_6H_{10}S$ - 7-thiabicyclo[2.2.1]heptane - 24

$C_6H_{11}NO$ - 1-formylpiperidine - 6

$C_6H_{11}NO$ - cyclohexanone oxime - 58

C_6H_{12} - cyclohexane - 4

$C_7H_3F_2N$ - 2,3-difluorobenzonitrile - 37

C_7H_4BrN - 3-bromobenzonitrile - 37

C_7H_4ClN - 2-chlorobenzonitrile - 58

C_7H_4FNO - m-fluorophenyl isocyanate - 1

$C_7H_4F_2O$ - 3-fluorobenzoyl fluoride - 10

$C_7H_4F_2O$ - 4-fluorobenzoyl fluoride - 10

C_7H_4OS - benzothiet-2-one - 58

C_7H_5FO - o-fluorobenzaldehyde - 1

C_7H_5FO - m-fluorobenzaldehyde - 1

C_7H_5FO - p-fluorobenzaldehyde - 1

C_7H_5NO - phenyl cyanate - 58

C_7H_6OS - thiobenzoic acid - 58

$C_7H_6O_2$ - tropolone - 52

$C_7H_6O_2$ - benzoic acid - 58

$C_7H_6O_3$ - salicylic acid - 58

C_7H_7Cl - benzyl chloride - 58

C_7H_7X - benzyl halides - 54

C_7H_8 - quadricyclane - 4

C_7H_8O - anisole - 58

C_7H_8O - benzyl alcohol - 58

C_7H_{10} - 3-cyclohexene-1-methylene - 15

$C_7H_{10}O$ - 3-methyl-2-cyclohexen-1-one - 31

$C_7H_{12}O$ - 8-oxabicyclo[3.2.1]octane - 27

$C_7H_{12}S$ - 1-thiaspiro[2.5]octane - 43

$C_7H_{13}N$ - 1-azabicyclo[2.2.2]octane - 30

C_8H_7F - o-fluorostyrene - 1

C_8H_7F - m-fluorostyrene - 1

C_8H_7N - benzyl cyanide - 6,58

C_8H_8O - acetophenone - 58

$C_8H_8O_2$ - p-anisaldehyde - 6,54

H_2O_2 - hydrogen peroxide - 13

H_2O_3S - water-sulfur dioxide complex - 32

H_2O_4 - ozone-water complex - 18,32

H_2S_2 - hydrogen disulfide - 57

H_2S_3 - hydrogen trisulfide - 57

H_2S_4 - hydrogen tetrasulfide - 57

H_3IS - H_2S-HI complex - 30

H_3N - ammonia - 13,39,47,48

H_3P - phosphine - 44

H_3Sb - stibine - 12

H_4IP - H_3P-HI complex - 30

H_4N_2 - hydrazine - 55

H_4O_2 - water dimer - 32

H_4Si - silane - 13

H_4Sn - stannane - 50

KO - potassium monoxide - 24

LiO - lithium monoxide - 24

MgS - magnesium sulfide - 45

N - nitrogen atom - 33

NO - nitric oxide - 57

NS_2 - nitrogen disulfide - 2

N_2O - nitrous oxide - 13

N_2O_3 - dinitrogen trioxide - 11

N_2O_5 - nitrogen pentoxide - 39

NaO - sodium monoxide - 24

ORb - rubidium monoxide - 24

OY - yttrium monoxide - 25

O_2S - sulfur dioxide - 53