

Note #03/02

RGA Application Bulletin #208 Spectra Reference

SPECTRAL DATA

SUBSTANCE	MASS NUMBER/PERCENTAGE OF MAJOR PEAK				
	1	2	3	4	5
Hydrogen	2/100	1/5			
Helium	4/100				
Methane	16/100	15/85	14/16	13/8	1/4
Ammonia	17/100	16/80	15/8	14/2	
Water	18/100	17/25	1/6	16/2	2/2
Neon	20/100	22/9			
Acetylene	26/100	25/20	13/5	54/5	27/3
Diborane	26/100	27/96	24/95	25/57	11/40
Vinyl Chloride	27/100	62/88	28/36	26/33	64/27
Nitrogen	28/100	14/7	29/1		
Carbon Monoxide	28/100	16/10	12/5	29/1	
Ethylene	28/100	26/61	27/59	25/12	14/8
Ethane	28/100	27/33	30/26	26/23	29/21
Air	28/100	32/27	14/6	16/3	40/1
Propane	29/100	28/59	27/38	44/26	43/22
Acetaldehyde	29/100	44/45	43/27	42/9	26/9
Formic Acid	29/100	46/61	45/47	17/17	28/17
Nitric Acid	30/100	14/7	15/2	16/1	
Silane	30/100	31/80	29/31	28/28	32/8
Nitrogen Dioxide	30/100	46/37	16/22	14/9	
Methanol	31/100	32/66	29/64	28/6	18/2
Ethylene Glycol	31/100	33/28	15/18	29/17	43/7
Ethanol	31/100	45/34	27/24	29/23	46/17
Oxygen	32/100	16/11			
Hydrogen Sulfide	34/100	32/44	33/42	36/34	35/2
Argon	40/100	20/10			
Propene	41/100	39/73	42/69	27/38	40/29
Acetone	43/100	15/67	28/17	14/15	58/15
Butane	43/100	29/44	27/37	28/32	41/27
Methyl Ethyl Ketone	43/100	29/25	72/16	27/16	57/6
MP Oil	43/100	41/91	57/73	55/64	71/20
Acetic Acid	43/100	45/93	60/57	29/15	42/1
Turbopump Oil	43/100	57/88	41/76	55/73	71/52
Carbon Dioxide	44/100	28/11	16/9	12/6	45/1
Nitrous Oxide	44/100	30/31	14/13	28/11	16/5
Isopropyl Alcohol	45/100	43/16	27/16	29/10	41/7
Boron Trifluoride	49/100	48/28	68/5	11/5	19/3
DP Oil PPE	50/100	77/89	63/29	62/27	64/21
Nitrogen Trifluoride	52/100	33/40	71/31	14/9	19/8
Disilane	60/100	58/82	57/48	62/42	61/40

SUBSTANCE	MASS NUMBER/PERCENTAGE OF MAJOR PEAK				
	1	2	3	4	5
Diphosphine	62/100	64/70	63/59	65/26	66/2
Sulfur Dioxide	64/100	48/49	32/10	66/5	16/5
Fomblin	69/100	20/28	16/16	31/9	97/8
Trifluoromethane	69/100	51/91	31/49	50/42	12/4
Tetrafluoromethane	69/100	50/12	19/7	31/5	
Freon 13	69/100	85/15	50/14	31/9	35/7
Carbon Disulphide	76/100	32/21	44/17	78/9	38/6
Arsine	76/100	78/60	77/21	75/4	
Benzene	78/100	77/22	51/18	50/17	52/15
DP Oil DC705	78/100	76/83	39/73	43/59	91/32
Krypton	84/100	86/31	83/20	82/20	80/4
Freon 12	85/100	87/32	50/16	35/12	
Silicon Tetrafluoride	85/100	87/12	28/12	33/10	86/5
Toluene	91/100	92/69	65/16	51/10	63/9
Trichloroethylene	95/100	60/65	97/64	35/40	47/26
Freon 11	101/100	103/60	35/16	66/15	47/12
Xenon	132/100	129/98	131/79	134/39	136/33

IONIZATION PROBABILITY

SUBSTANCE	FORMULA	RELATIVE IONIZATION GAUGE SENSITIVITY Signal/Signal Nitrogen
Acetone	(CH ₃) ₂ CO	3.6
Air		1.0
Ammonia	NH ₃	1.3
Argon	Ar	1.2
Benzene	C ₆ H ₆	5.9
Benzoic acid	C ₆ H ₅ COOH	5.5
Bromine	Br	3.8
Butane	C ₄ H ₁₀	4.9
Carbon dioxide	CO ₂	1.4
Carbon disulfide	CS ₂	4.8
Carbon monoxide	CO	1.05
Chlorobenzene	C ₆ H ₅ Cl	7.0
Chloroethane	C ₂ H ₅ Cl	4.0
Chloromethane	CH ₃ Cl	3.1
Cyclohexylene	C ₆ H ₁₂	6.4
Deuterium	D ₂	0.35
Dichlorofloromethane	CCl ₂ F ₂	2.7
Dichloromethane	CH ₂ Cl ₂	3.7
Dinitrobenzene	C ₆ H ₄ (NO ₂) ₂	7.8
Ethane	C ₂ H ₆	2.6
Ethanol	C ₂ H ₅ OH	3.6
Ethylene Oxide	(CH ₂) ₂ O	2.5
Helium	He	0.14
Hexane	C ₆ H ₁₄	6.6
Hydrogen	H ₂	0.44
Hydrogen chloride	HCl	1.6
Hydrogen fluoride	HF	1.4
Hydrogen iodide	HI	3.1
Hydrogen sulfide	H ₂ S	2.2
Krypton	Kr	1.7
Lithium	Li	1.9
Methane	CH ₄	1.6
Methanol	CH ₃ OH	1.8
Neon	Ne	0.23
Nitrogen	N ₂	1.0
Nitric oxide	NO	1.2
Nitrous oxide	N ₂ O	1.7

SUBSTANCE	FORMULA	RELATIVE IONIZATION GAUGE SENSITIVITY Signal/Signal Nitrogen
Oxygen	O ₂	1
n-Pentane	C ₅ H ₁₂	6
Phenol	C ₆ H ₅ OH	6.2
Phosphine	PH ₃	2.6
Propane	C ₃ H ₈	3.7
Silver perchlorate	AgClO ₄	3.6
Stannic iodide	SnI ₄	6.7
Sulfur dioxide	SO ₂	2.1
Sulfur hexafluoride	SF ₆	2.3
Tetrachloromethane	CCl ₄	6
Toluene	C ₆ H ₅ CH ₃	6.8
Trichloromethane	CHCl ₃	4.8
Trinitrobenzene	C ₆ H ₃ (NO ₂) ₃	9
Water	H ₂ O	1
Xenon	Xe	3
Xylene	C ₆ H ₄ (CH ₃) ₂	7.8

For further information, call your local MKS Sales Engineer or contact the MKS Applications Engineering Group at 800-227-8766.



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