

## Petroleum Hydrocarbon Compounds Retention Time Index

Retention time data collected using a 100m, 0.25mm ID, 0.50µm Rtx®-1PONA column.

Oven temp.: 35°C (hold 13 min.) to 45°C @ 10°C/min. (hold 15 min.) to 60°C @ 1.0°C/min. (hold 15 min.), to 200°C @ 1.9°C/min. (hold 5 min.); Carrier gas: helium; Inj./det. temp: 250°C; Linear velocity: 24cm/sec. @ 35°C; FID sensitivity: 4 x 10-12 AFS; Split ratio: 100:1.

Component Name	Rtx®-1PONA Ret. Time	Component Name	Rtx®-1PONA Ret. Time	Component Name	Rtx®-1PONA Ret. Time
propane	7.4	3-methyl- <i>cis</i> -hexene-3	24.869	7-methyl-octene-3	67.802
<i>iso</i> -butane/methanol	7.828	<i>trans</i> -heptene-3	25.362	<i>n</i> -nonane	69.275
butene-1/ <i>iso</i> -butene	8.071	<i>n</i> -heptane	25.68	1,1-methyl-ethyl-cyclohexane	69.609
<i>n</i> -butane	8.19	<i>cis</i> -heptene-3	25.827	<i>iso</i> -propyl-benzene	71.09
<i>trans</i> -butene-2	8.315	2-methyl-hexene-2	25.94	2,2-dimethyl-octane	72.657
<i>cis</i> -butene-2	8.522	3-methyl-hexene-2	26.091	2,4-dimethyl-octane	73.111
ethanol	8.782	<i>trans</i> -heptene-2	26.359	2,6-dimethyl-octane	74.247
3-methyl-butene-1	9.11	3-ethyl-pentene-2	26.611	2,5-dimethyl-octane	74.44
<i>iso</i> -pentane	9.524	<i>cis</i> -heptene-2	27.09	<i>n</i> -butyl-cyclopentane	75.065
<i>iso</i> -propanol	9.747	2,3-dimethyl-pentene-2	27.639	3,3-dimethyl-octane	76.053
<i>n</i> -pentene-1	9.899	3-ethyl-cyclopentane	28.318	<i>n</i> -propyl-benzene	76.645
2-methyl-butene-1	10.094	1- <i>cis</i> -2-dimethyl-cyclopentane	28.64	3,6-dimethyl-octane	76.958
<i>n</i> -pentane	10.244	methyl-cyclopentane	28.791	1-methyl-3-ethyl-benzene	78.016
isoprene	10.395	1,1,3-trimethyl-cyclopentane	29.317	1-methyl-4-ethyl-benzene	78.33
<i>trans</i> -pentene-2	10.478	ethyl-cyclopentane	30.788	1,3,5-trimethyl-benzene	79.315
<i>tert</i> -butanol	10.665	2,5-dimethyl-hexane	31.037	2,3-dimethyl-octane	79.471
<i>cis</i> -pentene-2	10.756	2,4-dimethyl-hexane	31.375	5-methyl-nonane	80.697
2-methyl-butene-2	10.937	1- <i>cis</i> -2- <i>trans</i> -4-trimethyl-cyclopentane	32.366	1-methyl-2-ethyl-benzene	80.796
1- <i>trans</i> -3-pentadiene	11.029	3,3-dimethyl-hexane	32.629	2-methyl-nonane	81.11
1- <i>cis</i> -3-pentadiene	11.514	1,2,3-trimethyl-cyclopentane	33.699	3-ethyl-octane	81.59
2,2-dimethyl-butane	11.609	2,3,4-trimethyl-pentane	34.318	3-methyl-nonane	82.115
cyclopentene	12.445	toluene	34.901	1,2,4-trimethyl-benzene	83.188
4-methyl-pentene-1	12.607	2,3-dimethyl-hexane	36.332	<i>iso</i> -butyl-cyclohexane	83.843
3-methyl-pentene-1	12.696	2-methyl-3-ethyl-pentane	36.554	<i>iso</i> -butyl-benzene	85.481
cyclopentane/methyl <i>tert</i> -butyl ether	13.052	2-methyl-heptane	37.544	<i>sec</i> -butyl-benzene	85.869
2,3-dimethyl-butane	13.13	4-methyl-heptane	37.816	<i>n</i> -decane	86.289
2,3-dimethyl-butene-1	13.242	3-methyl-3-ethyl-pentane	37.996	1,2,3-trimethyl-benzene	87.05
2-methyl-pentane	13.358	1- <i>cis</i> -3-dimethyl-cyclohexane	38.576	1-methyl-3- <i>iso</i> -propyl-benzene	87.363
3-methyl-pentane	14.172	3-methyl-heptane	39.005	1-methyl-4- <i>iso</i> -propyl-benzene	87.783
2-methyl-pentene-1	14.443	1- <i>cis</i> -2- <i>trans</i> -3-trimethyl-cyclopentane	39.192	indan	88.52
<i>n</i> -hexene-1	14.505	3-ethyl-hexane	39.349	1-methyl-2- <i>iso</i> -propyl-benzene	89.544
2-butene-1	15.17	1- <i>trans</i> -4-dimethyl-cyclohexane	39.559	1,3-dimethyl-benzene	90.923
<i>n</i> -hexane	15.251	1,1-dimethyl-cyclohexane	40.607	1-methyl-3-propyl-benzene	91.26
<i>trans</i> -hexene-3	15.368	2,2,5-trimethyl-hexane	41.132	1,4-diethyl-benzene	91.73
<i>cis</i> -hexene-3	15.455	3- <i>cis</i> -ethyl-methyl-cyclohexane	41.353	1-methyl-4-propyl-benzene	91.856
<i>trans</i> -hexene-2	15.563	2,6-dimethyl-heptene-1	41.772	<i>n</i> -butyl-benzene	92.12
2-methyl-pentene-2	15.727	3- <i>trans</i> -ethyl-methyl-cyclopentane	42.018	1,3-dimethyl-5-ethyl-benzene	92.375
3-methyl-pentene-1	15.918	2,2,4-trimethyl-hexane	42.526	<i>trans</i> -decahydronaphthalene	92.781
3-methyl-pentene-2	15.975	1- <i>trans</i> -3-dimethyl-cyclohexane	42.954	1-methyl-2-propyl-benzene	93.14
hexyne-1	16.147	<i>trans</i> -octene-4	43.181	4-methyl-decane	94.135
<i>cis</i> -hexene-2	16.254	<i>trans</i> -octene-3	43.747	1,4-dimethyl-4-ethyl-benzene	94.391
3,3-dimethyl-pentene-1	16.625	1- <i>trans</i> -3-dimethyl-cyclohexane	44.057	1,3-dimethyl-4-ethyl-benzene	94.587
3-methyl- <i>trans</i> -pentene-2	16.73	<i>n</i> -octane	44.343	1,2-dimethyl-4-ethyl-benzene	95.303
2,2-dimethyl-pentane	17.095	octene-2	45.049	1,3-dimethyl-2-ethyl-benzene	95.898
methyl-cyclopentane	17.307	<i>iso</i> -propyl-cyclopentane	45.744	1-methyl-4- <i>tert</i> -butyl-benzene	97.438
2,4-dimethyl-pentane	17.611	2,3,4-trimethyl-hexane	47.747	1,2-dimethyl-3-ethyl-benzene	97.59
2,3,3-trimethyl-butane	18.1	1- <i>cis</i> -2-dimethyl-cyclohexane	49.495	<i>n</i> -undecane	98.514
4,4-dimethyl-pentene-2	19.086	1,1,4-trimethyl-cyclohexane	50.646	1,2,4,5-tetra-methyl-benzene	98.967
2,4-dimethyl-pentene-1	19.228	2,2,3-trimethyl-hexane	51.088	1,2,3,5-tetra-methyl-benzene	99.34
1-methyl-cyclopentene	19.333	2,4-dimethyl-heptane	51.473	5-methyl-indan	101.15
benzene	19.426	<i>n</i> -propyl-cyclopentane	52.695	4-methyl-indan	101.69
3-methyl-hexene-1	19.658	1- <i>cis</i> -3- <i>cis</i> -5-trimethyl-cyclohexane	52.994	1-ethyl-2-propyl-benzene	101.985
3,3-dimethyl-pentane	19.917	2-methyl-4-ethyl-hexane	53.288	2-methyl-indan	102.211
5-methyl-hexene-1	20.14	1,1,3-trimethyl-cyclohexane	54.002	1-methyl-3-butyl-benzene	102.487
cyclohexane	20.4	ethyl-benzene	55.129	1,3-dipropyl-benzene	102.662
2-methyl-hexene-3	20.529	1- <i>cis</i> -2- <i>trans</i> -4- <i>trans</i> -trimethyl-cyclohexane	55.889	<i>sec</i> -pentyl-benzene	102.768
4-methyl-hexene-1	20.93	<i>m</i> -xylene	57.597	<i>n</i> -pentyl-benzene	103.269
4-methyl- <i>trans</i> -hexene-2	21.185	<i>p</i> -xylene	57.872	1,2-dipropyl-benzene	103.671
2-methyl-hexane	21.368	2,3-dimethyl-heptane	58.255	1,4-dipropyl-benzene	104.304
2,3-dimethyl-pentane	21.566	3,5-dimethyl-heptane	58.785	1,2,3,4-tetrahydro-naphthalene	104.718
1,1-dimethyl-cyclopentane	21.905	3,4-dimethyl-heptane	59.04	naphthalene	105.198
cyclohexene	22.157	4-methyl-octane	60.594	1,3-dipropyl-benzene	107.28
3-methyl-hexane	22.394	2-methyl-octane	60.9	<i>n</i> -dodecane	108.48
3,4-dimethyl-ethyl-pentene-2	22.805	3-ethyl-heptane	62.266	2,6-dimethyl-undecane	110.575
1- <i>cis</i> -3-dimethyl-cyclopentane	23.19	3-methyl-octane	62.66	1,2,4-triethyl-benzene	110.854
1- <i>trans</i> -3-dimethyl-cyclopentane	23.545	1- <i>cis</i> -2- <i>trans</i> -4- <i>trans</i> -trimethyl-cyclohexane	63.289	1-methyl-4-pentyl-benzene	112.042
3-ethyl-pentane/2-methyl-hexene-1	23.668	<i>o</i> -xylene	63.592	pentamethyl-benzene	114.772
1- <i>trans</i> -2-dimethyl-cyclopentane	23.899	1-methyl-2-propyl-cyclopentane	65.199	2-methyl-naphthalene	115.65
2,2,4-trimethyl-pentane	24.02	1- <i>cis</i> -ethyl-3-methyl-cyclohexane	65.433	1-methyl-naphthalene	117.011
<i>n</i> -heptene-1	24.114	<i>iso</i> -butyl-cyclopentane	66.62	<i>n</i> -tridecane	117.152