Boiling Range Distribution of Crude Petroleum by Gas Chromatography

ASTM D5307

Configuration of an Agilent Technologies 7890A Series Gas Chromatograph with a flame ionization detector (FID.

Method covers the determination of water-free crude petroleum through 538°C (1000°F). Material boiling above 538°C is reported as residue. Method is applicable to whole crude samples that can be solubilized in a solvent to permit sampling by means of a microsyringe.

Repeatability Table
RSD = Relative Standard Deviation
SimDist Retention Time Mix Diluted 10:1 in Carbon Disulfide

	Decane (n-C10)		Eicosane (n-C20)	
Runs	**Ret. Time**	**Area**	**Ret. Time**	**Area**
1	5. 437	2311. 95068	13. 288	2397. 39893
2	5. 437	2336. 93433	13. 287	2422. 95386
3	5. 436	2342. 67187	13. 287	2429. 69629
4	5. 436	2326. 44702	13. 286	2406. 72827
5	5. 436	2348. 88135	13. 286	2431. 33569
6	5. 435	2356. 42334	13. 286	2443. 46045
7	5. 436	2363. 50464	13. 285	2444. 37085
Average	5. 436	2340. 97332	13. 286	2425. 13491
St. Dev.	0. 00069	17. 70794	0. 00098	17. 69156
% RSD	**0. 01269%**	**0. 75643%**	**0. 00735%**	**0. 72951%**

	Triacontane (n-C30)		Tetracontane (n-C40)	
Runs	**Ret. Time**	**Area**	**Ret. Time**	**Area**
1	18. 375	2389. 72947	22. 113	2356. 52832
2	5. 437	2410. 94873	22. 114	2380. 63574
3	5. 436	2416. 81421	22. 112	2386. 19092
4	5. 436	2395. 22510	22. 112	2369. 17065
5	5. 436	2419. 11182	22. 111	2393. 84570
6	5. 435	2431. 78955	22. 111	2404. 91284
7	5. 436	2433. 19067	22. 110	2407. 65479
Average	18. 374	2413. 82994	22. 112	2385. 56271
St. Dev.	0. 00076	16. 68065	0. 00135	18. 56278
% RSD	**0. 00411%**	**0. 69104%**	**0. 00608%**	**0. 77813%**