1,2,4- trimethylbenzene	169	2.12	1.40	-
Phenol	182	4.67	3.35	-
1,3,5- trimethylbenzene	165	2.86	0.27	-
1,2- diethyl benzene	-	0.43	-	-
Indene	183	4.5	9.69	0.76
m-Cresol	202	1.79	4.31	1.00
2,4- dimethyl phenol	-	1.56	2.32	2.03
1-methyl-2-2 propenyl benzene	-	0.92	0.25	-
Naphthalene	218	-	41.49	-
2(4)- ethylindyne	-	0.19	0.28	-
dimethylindyne	-	0.13	-	-
Thymol	233	0.03	0.08	-
2,3- dimethylpyridine	-	-	-	0.29
Isochinoline	243	0.46	0.81	3.29
Thiobenzene	185	-	0.21	-
o-Cresol	191	1.77	-	-
1-ethyl-2,4- dimethylbenzene	-	1.14	-	-
p-cresol	202	-	1.02	-
1- methyl-inden	-	1.53	1.45	0.30
4- methyl-inden	-	-	0.9	-
3-ethyl-5methylphenol	-	-	0.20	0.38
2,5-dimethyl phenol	-	0.30	0.35	-
o-ethylphenol	-	0.44	0.73	-
1- ethyl naphthalene	259	0.56	0.23	1.30
2,7- dimethyl - naphthalene	262	0.29	0.27	2.25

As can be seen from Table 4, indene, naphthalene and their alkyl derivatives as well as a small amounts of diphenyl, acenaphthene, and dibenzfuran were identified in the fractions with a boiling point of 180-230°C. The composition of distillates with boiling point 230-280°C consists of individual aromatic compounds and their derivatives with high molecular weight. The nature of the distribution of S-, N-, O heteroatoms in the structure of aromatic structures is different. Nitrogen is found in both six-membered and five-membered rings (pyridine and pyrrole fragments), oxygen in the hydroxyl group and in the five-membered ring (furan fragment), and sulfur in the five-membered ring (thiophene fragment) only. The fraction of the initial resin with a boiling point of 280°-350°C contained: anthracene, phenanthrene, fluorene, fluoranthene, chrysene, pyrene and its isomers, benzfluoranthene, isomers of dibenzfluoranthene, as well as a high content of indeno-(1,2,3)-fluoranthene.

4. Conclusion

In present study, coal tar coke was used as a raw material to prepare valuable aromatic hydrocarbons, their mixtures and commercial products based on them. This is confirmed by the data obtained from composition of fractions. In addition, the use of chemical analysis method made it possible to separate a complex, multicomponent mixture of hydrocarbons and heteroatomic resin components into individual compound fractions with similar chemical properties. At the same time, to improve their quality, as well as to increase the yield of more valuable components, it is advisable to use, if possible, selective methods for pretreatment of the original resin. This allows one not only to preserve the unique technological properties of the resin, but also to achieve a significant reduction of its toxic level and carcinogenicity.

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