

Mr. Waley

U. S. BUREAU OF MINES
HYDRO. DEMON. PLANT DIV. 1040

T-388

KCBram
6-20-47

Quality of Gasoline from Various Raw Materials

I. G. Ludwigshafen, 14 November 1939

/hkj

14 Nov. 1939 PF

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TABLE 1

Quality of Auto Gasoline
From Various Raw Materials

Feed Material	Brown Coal		Brown Coal L.T.C. Tar Old Young L.T.C. Coal	Bit. Coal (85% C)	Bit. Coal Tar Pitch	Cracking Residue	
	Older	Younger				Crude Oil	Gas Oil
Catalyst	5058/ 6434	5058/ 6434	6434/ 6434	5058/ 6434	5058/ 6434	5058/ 6434	5058/ 6434
Pressure	200	300	300	300	300	300	300
Specific Gravity	0,736	0,750	0,730	0,740	0,750	0,736	0,745
Aniline Point °C	41	44	50	40	34	53	43
Initial Boil	38°	35°	38°	40°	40°	42	43
% - 70°	20	18	15	10	11		
% - 100°	40	38	38	36	37		
% - 120°	55	56	56	54	54		
% - 150°	72	78	80	80	79		
% - 180°	93	95	97	96	96		
End Point	195°	185°	180°	190°	185°	197°	180°
Vapor Pressure	0,60	0,6	0,6	0,6	0,6		
Butane Content	4%	4%	4%	4%	4%		
Composition:							
Paraffins	53	55	60	30	20	58	43
Naphthenes	40	46	30	59	64	37	45
Aromatics	6	8	9	10	15	4	10
Unsaturated	1	1	1	1	1	1	1
O.N. Res. Meth.	66	70	65	73	75	70	73
" " 0,04 Pb	80	83	80	85	86	83	85
" " 0,08 Pb	85	88	85	89	90	88	89
O.N. Res., butane free	64	68	65	71	73	68	71

TABLE 2

Quality of Aromatic Aviation Gasoline from Various Raw Materials

Feed Material	Brown Coal		Brown Coal L.T.C.		Bit. Coal (83% C)	Bit. Coal Tar Pitch		Cracking Residue	
	Older	Younger	Old IFC Coal	Young IFC Coal		Crude Oil	Gas Oil		
Catalyst	7019	7019	7019	7019	7019	7019	7019	7019	7019
Pressure Atm.	300	300	300	300	300	300	300	300	300
Spec. Grav./15°C	0,775	0,795	0,755	0,800	0,815	0,796	0,795	0,795	0,795
Aniline Point °C	19	7-5	25	-2	-20	7	7	7	7
Initial Boil °C	50	50	50	42	43	4	45	45	45
% -70°	8	35	40	7	20	28	37	36	36
% -100°	35	75	76	67	57	92	97	97	97
% -120°	75	95	97	97	97	97	97	97	97
% -150°	95	160	160	165	167	156	155	155	155
% -160°	157	160	160	165	167	156	155	155	155
End Point °C	157	160	160	165	167	156	155	155	155
Vapor Press. @ 40°C	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
Composition:									
% Paraffins	38	20	56	12	10	26	16	16	16
% Naphthenes	31	37	25	35	19	30	29	29	29
% Aromatics	30	42	18	52	70	40	57	57	57
% Unsaturated	1	1	1	1	1	2	4	4	4
Octane No.:									
Res. Meth. -/ 0,12 Pb (est)	79	86	69	89	97	85	90	90	90
" " -/ 0,12 Pb	92	98	87	102	106	98	101	101	101
" " -/ 0,09 Pb	75	76	67	78	82	75	78	78	78
" " -/ 0,12 Pb	85	87	83	90	91	87	89	89	89
" " -/ 0,12 Pb	87	89	85	92	93	89	91	91	91
Aromatics Content after	48	60	33	73	82	63	74	74	74
DHD of total gasoline (est.)	87	93	76	98	103	93	97	97	97
O.N. Res. Meth. -/ 0,12 Pb	100	103	92	107	112	103	106	106	106
" " -/ 0,12 Pb	77	80	70	83	86	80	82	82	82
Motor " -/ 0,12 Pb	91	91	87	93	96	91	92	92	92

