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AMERICAN PETROLEUM INSTITUTE
STANDARD. A.P.I. No.: 500-36



STANDARD ABRIDGED VOLUME CORRECTION TABLE
FOR PETROLEUM OILS¹

A.S.T.M. Designation: D 206 - 36

This table is issued under the fixed designation D 206, the final number indicates the year of original adoption as standard or, in case of revision, the year of last revision.

ADOPTED, 1925; REVISED, 1934, 1936.

This abridged table has been prepared by the National Bureau of Standards to meet a demand from the oil industry for a short and convenient table for reducing oil volumes to the basis of 60 F., when extreme accuracy is not required. It is not intended to replace the Bureau of Standards *Circular No. 410*, but rather to supplement it and especially to replace the various abridged tables heretofore employed in the oil industry.

The groups, coefficients of expansion, gravity (degrees A.P.I.), and gravity ranges for the several subdivisions of the present abridged table follow:

GROUP NUMBER	COEFFICIENT OF EXPANSION AT 60 F.	GRAVITY, DEGREES A.P.I.	GRAVITY RANGE OF GROUP (DEGREES A.P.I. AT 60 F.)
0.....	0.00035	6	Up to 14.9
1.....	0.00040	22	15.0 to 34.9
2.....	0.00050	44	35.0 to 50.9
3.....	0.00060	58	51.0 to 63.9
4.....	0.00070	72	64.0 to 78.9
5.....	0.00080	86	79.0 to 88.9
6.....	0.00085	91	89.0 to 93.9
7.....	0.00090	97	94.0 to 100.0

All motor fuel blends of gasoline and benzol shall be considered as falling in Group 3. In cases of uncertainty regarding the presence of benzol, a product having a gravity heavier (numerically less) than 51 deg. A.P.I., and a 50 per cent recovery point less than 293 F. (145 C.) shall be considered as falling in Group 3.

This table shows the volume occupied at 60 F. by a quantity of oil occupying unit volume at the indicated temperatures.

¹ Under the standardization procedure of the Society, this table is under the jurisdiction of the A.S.T.M. Committee D-2 on Petroleum Products and Lubricants.

This abridged table differs from that published in 1934 in three respects: The multipliers for Group 0 have been revised slightly; Group 1 has been extended from 249 to 499 F.; and Groups 4, 5 and 6 have been extended from 99 to 124 F.

The multipliers in the Group 0 table in the 1934 standard were taken from the National Bureau of Standards *Miscellaneous Publication No. 57*. With the revision of *Circular No. 154* (published as *Circular No. 410*) to include data on oils from 0 to 10° A.P.I., it has seemed desirable to employ the procedure followed in the other groups and choose the column of multipliers from the unabridged table which has a base coefficient of expansion nearest 0.00035, which in the case of Group 0 is the column corresponding to a gravity of 6° A.P.I.

STANDARD ABRIDGED VOLUME CORRECTION TABLE FOR PETROLEUM OILS
GROUP 0^a

Legend: t = observed temperature in degrees Fahrenheit; M = multiplier for reducing oil volumes to the basis of 60 F.

t	M	t	M	t	M	t	M	t	M
0	1.0211	50	1.0035	100	0.9862	150	0.9691	200	0.9523
1	1.0208	51	1.0032	101	0.9858	151	0.9687	201	0.9520
2	1.0204	52	1.0028	102	0.9855	152	0.9684	202	0.9517
3	1.0201	53	1.0025	103	0.9852	153	0.9680	203	0.9513
4	1.0197	54	1.0021	104	0.9848	154	0.9677	204	0.9510
5	1.0194	55	1.0017	105	0.9844	155	0.9674	205	0.9507
6	1.0190	56	1.0014	106	0.9841	156	0.9670	206	0.9504
7	1.0186	57	1.0010	107	0.9837	157	0.9667	207	0.9500
8	1.0183	58	1.0007	108	0.9834	158	0.9664	208	0.9497
9	1.0179	59	1.0003	109	0.9831	159	0.9660	209	0.9494
10	1.0176	60	1.0000	110	0.9827	160	0.9657	210	0.9490
11	1.0172	61	0.9997	111	0.9823	161	0.9654	211	0.9487
12	1.0168	62	0.9993	112	0.9820	162	0.9650	212	0.9484
13	1.0165	63	0.9990	113	0.9816	163	0.9647	213	0.9481
14	1.0161	64	0.9986	114	0.9813	164	0.9643	214	0.9477
15	1.0158	65	0.9982	115	0.9809	165	0.9640	215	0.9474
16	1.0154	66	0.9979	116	0.9806	166	0.9637	216	0.9471
17	1.0151	67	0.9976	117	0.9802	167	0.9633	217	0.9468
18	1.0147	68	0.9972	118	0.9799	168	0.9630	218	0.9464
19	1.0144	69	0.9969	119	0.9795	169	0.9627	219	0.9461
20	1.0141	70	0.9965	120	0.9792	170	0.9623	220	0.9458
21	1.0137	71	0.9962	121	0.9789	171	0.9620	221	0.9454
22	1.0134	72	0.9958	122	0.9785	172	0.9616	222	0.9451
23	1.0130	73	0.9955	123	0.9782	173	0.9613	223	0.9448
24	1.0126	74	0.9952	124	0.9779	174	0.9610	224	0.9445
25	1.0123	75	0.9948	125	0.9775	175	0.9606	225	0.9441
26	1.0119	76	0.9944	126	0.9772	176	0.9603	226	0.9438
27	1.0116	77	0.9941	127	0.9768	177	0.9600	227	0.9435
28	1.0112	78	0.9938	128	0.9765	178	0.9596	228	0.9432
29	1.0109	79	0.9934	129	0.9762	179	0.9593	229	0.9428
30	1.0106	80	0.9931	130	0.9758	180	0.9590	230	0.9425
31	1.0102	81	0.9927	131	0.9755	181	0.9586	231	0.9422
32	1.0098	82	0.9924	132	0.9751	182	0.9583	232	0.9419
33	1.0095	83	0.9920	133	0.9748	183	0.9580	233	0.9415
34	1.0092	84	0.9917	134	0.9745	184	0.9576	234	0.9412
35	1.0088	85	0.9914	135	0.9741	185	0.9573	235	0.9409
36	1.0084	86	0.9910	136	0.9738	186	0.9569	236	0.9406
37	1.0081	87	0.9907	137	0.9736	187	0.9566	237	0.9402
38	1.0077	88	0.9903	138	0.9731	188	0.9563	238	0.9399
39	1.0074	89	0.9900	139	0.9728	189	0.9559	239	0.9396
40	1.0070	90	0.9896	140	0.9724	190	0.9556	240	0.9392
41	1.0067	91	0.9892	141	0.9721	191	0.9553	241	0.9389
42	1.0063	92	0.9889	142	0.9718	192	0.9549	242	0.9386
43	1.0059	93	0.9886	143	0.9714	193	0.9546	243	0.9383
44	1.0056	94	0.9882	144	0.9711	194	0.9543	244	0.9380
45	1.0052	95	0.9879	145	0.9707	195	0.9539	245	0.9376
46	1.0049	96	0.9876	146	0.9704	196	0.9536	246	0.9373
47	1.0045	97	0.9872	147	0.9701	197	0.9533	247	0.9370
48	1.0042	98	0.9869	148	0.9697	198	0.9530	248	0.9367
49	1.0039	99	0.9865	149	0.9694	199	0.9527	249	0.9364

^a These tables for Group 0 and Group 1 have been adopted as standard by the Society as volume correction tables for asphaltic products on the joint recommendation of A.S.T.M. Committee D-4 on Road and Paving Materials and Committee D-8 on Bituminous Waterproofing and Roofing Materials.

990 ABRIDGED VOLUME CORRECTION TABLE FOR OILS

STANDARD ABRIDGED VOLUME CORRECTION TABLE FOR PETROLEUM OILS
GROUP 0^a (Continued)

Legend: t = observed temperature in degrees Fahrenheit; M = multiplier for reducing oil volumes to the basis of 60 F.

t	M	t	M	t	M	t	M	t	M
250	0.9360	300	0.9201	350	0.9045	400	0.8893	450	0.8744
251	0.9357	301	0.9198	351	0.9042	401	0.8890	451	0.8741
252	0.9354	302	0.9195	352	0.9039	402	0.8887	452	0.8738
253	0.9351	303	0.9191	353	0.9036	403	0.8884	453	0.8735
254	0.9347	304	0.9188	354	0.9033	404	0.8881	454	0.8732
255	0.9344	305	0.9185	355	0.9030	405	0.8878	455	0.8729
256	0.9341	306	0.9182	356	0.9027	406	0.8875	456	0.8726
257	0.9338	307	0.9179	357	0.9024	407	0.8872	457	0.8723
258	0.9335	308	0.9176	358	0.9021	408	0.8869	458	0.8720
259	0.9331	309	0.9173	359	0.9017	409	0.8866	459	0.8717
260	0.9328	310	0.9169	360	0.9014	410	0.8863	460	0.8714
261	0.9325	311	0.9166	361	0.9011	411	0.8860	461	0.8711
262	0.9322	312	0.9163	362	0.9008	412	0.8857	462	0.8709
263	0.9319	313	0.9160	363	0.9005	413	0.8854	463	0.8706
264	0.9315	314	0.9157	364	0.9002	414	0.8851	464	0.8703
265	0.9312	315	0.9154	365	0.8999	415	0.8848	465	0.8700
266	0.9309	316	0.9151	366	0.8996	416	0.8845	466	0.8697
267	0.9306	317	0.9148	367	0.8993	417	0.8842	467	0.8694
268	0.9303	318	0.9145	368	0.8990	418	0.8839	468	0.8691
269	0.9299	319	0.9141	369	0.8987	419	0.8836	469	0.8688
270	0.9296	320	0.9138	370	0.8984	420	0.8833	470	0.8685
271	0.9293	321	0.9135	371	0.8981	421	0.8830	471	0.8682
272	0.9290	322	0.9132	372	0.8978	422	0.8827	472	0.8679
273	0.9287	323	0.9129	373	0.8975	423	0.8824	473	0.8676
274	0.9283	324	0.9126	374	0.8972	424	0.8821	474	0.8673
275	0.9280	325	0.9123	375	0.8969	425	0.8818	475	0.8671
276	0.9277	326	0.9119	376	0.8965	426	0.8815	476	0.8668
277	0.9274	327	0.9116	377	0.8962	427	0.8812	477	0.8665
278	0.9271	328	0.9113	378	0.8959	428	0.8809	478	0.8662
279	0.9267	329	0.9110	379	0.8956	429	0.8806	479	0.8659
280	0.9264	330	0.9107	380	0.8953	430	0.8803	480	0.8656
281	0.9261	331	0.9104	381	0.8950	431	0.8800	481	0.8653
282	0.9258	332	0.9101	382	0.8947	432	0.8797	482	0.8650
283	0.9255	333	0.9098	383	0.8944	433	0.8794	483	0.8647
284	0.9252	334	0.9095	384	0.8941	434	0.8791	484	0.8644
285	0.9248	335	0.9092	385	0.8938	435	0.8788	485	0.8642
286	0.9245	336	0.9088	386	0.8935	436	0.8785	486	0.8639
287	0.9242	337	0.9085	387	0.8932	437	0.8782	487	0.8636
288	0.9239	338	0.9082	388	0.8929	438	0.8779	488	0.8633
289	0.9236	339	0.9079	389	0.8926	439	0.8776	489	0.8630
290	0.9233	340	0.9076	390	0.8923	440	0.8773	490	0.8627
291	0.9229	341	0.9073	391	0.8920	441	0.8770	491	0.8624
292	0.9226	342	0.9070	392	0.8917	442	0.8767	492	0.8621
293	0.9223	343	0.9067	393	0.8914	443	0.8764	493	0.8618
294	0.9220	344	0.9064	394	0.8911	444	0.8762	494	0.8615
295	0.9217	345	0.9061	395	0.8908	445	0.8759	495	0.8613
296	0.9214	346	0.9057	396	0.8905	446	0.8756	496	0.8610
297	0.9210	347	0.9054	397	0.8902	447	0.8753	497	0.8607
298	0.9207	348	0.9051	398	0.8899	448	0.8750	498	0.8604
299	0.9204	349	0.9048	399	0.8896	449	0.8747	499	0.8601

^a These tables for Group 0 and Group 1 have been adopted as standard by the Society as volume correction tables for asphaltic products on the joint recommendation of A.S.T.M. Committee D-4 on Road and Paving Materials and Committee D-8 on Bituminous Waterproofing and Roofing Materials.

STANDARD ABRIDGED VOLUME CORRECTION TABLE FOR PETROLEUM OILS

GROUP 1^a

Legend: t = observed temperature in degrees Fahrenheit; M = multiplier for reducing oil volumes to the basis of 60 F.

t	M	t	M	t	M	t	M	t	M
0	1.0242	50	1.0040	100	0.9841	150	0.9647	200	0.9457
1	1.0238	51	1.0036	101	0.9837	151	0.9643	201	0.9453
2	1.0234	52	1.0032	102	0.9833	152	0.9639	202	0.9449
3	1.0230	53	1.0028	103	0.9830	153	0.9636	203	0.9446
4	1.0226	54	1.0024	104	0.9826	154	0.9632	204	0.9442
5	1.0222	55	1.0020	105	0.9822	155	0.9628	205	0.9438
6	1.0218	56	1.0016	106	0.9818	156	0.9624	206	0.9434
7	1.0214	57	1.0012	107	0.9814	157	0.9620	207	0.9430
8	1.0210	58	1.0008	108	0.9811	158	0.9616	208	0.9427
9	1.0206	59	1.0004	109	0.9807	159	0.9612	209	0.9423
10	1.0202	60	1.0000	110	0.9803	160	0.9608	210	0.9419
11	1.0198	61	0.9996	111	0.9799	161	0.9604	211	0.9415
12	1.0194	62	0.9992	112	0.9795	162	0.9601	212	0.9412
13	1.0189	63	0.9988	113	0.9791	163	0.9597	213	0.9408
14	1.0185	64	0.9984	114	0.9787	164	0.9594	214	0.9405
15	1.0181	65	0.9980	115	0.9783	165	0.9590	215	0.9401
16	1.0177	66	0.9976	116	0.9779	166	0.9586	216	0.9397
17	1.0173	67	0.9972	117	0.9775	167	0.9582	217	0.9393
18	1.0169	68	0.9968	118	0.9771	168	0.9578	218	0.9390
19	1.0165	69	0.9964	119	0.9767	169	0.9574	219	0.9386
20	1.0161	70	0.9960	120	0.9763	170	0.9570	220	0.9382
21	1.0157	71	0.9956	121	0.9759	171	0.9566	221	0.9378
22	1.0153	72	0.9952	122	0.9755	172	0.9562	222	0.9374
23	1.0148	73	0.9948	123	0.9752	173	0.9559	223	0.9371
24	1.0144	74	0.9944	124	0.9748	174	0.9555	224	0.9367
25	1.0140	75	0.9940	125	0.9744	175	0.9551	225	0.9363
26	1.0136	76	0.9936	126	0.9740	176	0.9547	226	0.9359
27	1.0132	77	0.9932	127	0.9736	177	0.9543	227	0.9356
28	1.0128	78	0.9929	128	0.9732	178	0.9540	228	0.9352
29	1.0124	79	0.9925	129	0.9728	179	0.9536	229	0.9349
30	1.0120	80	0.9921	130	0.9724	180	0.9532	230	0.9345
31	1.0116	81	0.9917	131	0.9720	181	0.9528	231	0.9341
32	1.0112	82	0.9913	132	0.9716	182	0.9524	232	0.9337
33	1.0108	83	0.9909	133	0.9713	183	0.9521	233	0.9334
34	1.0104	84	0.9905	134	0.9709	184	0.9517	234	0.9330
35	1.0100	85	0.9901	135	0.9705	185	0.9513	235	0.9326
36	1.0096	86	0.9897	136	0.9701	186	0.9509	236	0.9322
37	1.0092	87	0.9893	137	0.9697	187	0.9505	237	0.9318
38	1.0088	88	0.9889	138	0.9694	188	0.9502	238	0.9315
39	1.0084	89	0.9885	139	0.9690	189	0.9498	239	0.9311
40	1.0080	90	0.9881	140	0.9686	190	0.9494	240	0.9307
41	1.0076	91	0.9877	141	0.9682	191	0.9490	241	0.9303
42	1.0072	92	0.9873	142	0.9678	192	0.9487	242	0.9300
43	1.0068	93	0.9869	143	0.9675	193	0.9483	243	0.9296
44	1.0064	94	0.9865	144	0.9671	194	0.9480	244	0.9293
45	1.0060	95	0.9861	145	0.9667	195	0.9476	245	0.9289
46	1.0056	96	0.9857	146	0.9663	196	0.9472	246	0.9285
47	1.0052	97	0.9853	147	0.9659	197	0.9468	247	0.9281
48	1.0048	98	0.9849	148	0.9655	198	0.9465	248	0.9278
49	1.0044	99	0.9845	149	0.9651	199	0.9461	249	0.9274

^a These tables for Group 0 and Group 1 have been adopted as standard by the Society as volume correction tables for asphaltic products on the joint recommendation of A.S.T.M. Committee D-4 on Road and Paving Materials and Committee D-8 on Bituminous Waterproofing and Roofing Materials.