4/3/0/A
20/10/87

NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

GENERAL CERTIFICATE OF APPROVAL No 4/3/0/A

This is to certify that an approval for use for trade has been granted in respect of the patterns of

Pharmaceutical Dispensing Measures

as described in Australian Standard 1952.

This approval is issued upon completion of a review of NSC approval No 4/3/0, which is hereby cancelled.

This approval is subject to review on or after 1/10/92.

Signed

Executive Director

Descriptive Advice

Pattern: approved 8/9/87

. Pharmaceutical dispensing measures.

Australian Standard 1952 entitled Glass Dispensing Measures for Pharmaceutical Purposes describes the pattern.

NOTE: For the purposes of testing measures purporting to comply with this approval, according to the test procedure of Australian Standard 1952, the Recognised-Value Standard of Measurement of Density of Water, determined by the National Standards Commission on 21 March 1985, shall be used.

NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT ACT 1960

DETERMINATION BY THE NATIONAL STANDARDS COMMISSION

Recognized-Value Standard of Measurement of Density

Water

In pursuance of paragraphs 8A(1)(a) and (b) of the National Measurement Act 1960, the National Standards Commission hereby determines that the magnitude of the density of water d_t at a temperature t and a mean pressure p shall be a recognized-value standard of measurement, provided t lies within the range 0°C to 40°C and p lies within the range 2×10^4 Pa to 10^6 Pa.

For the purposes of this Determination -

(a) when p is 101 325 Pa and t is one of the temperatures listed in the attached table the magnitude of the density in $kg.m^{-3}$ is as stated in the table, which is derived from the following formula:

$$d_t = 999.972 - \frac{(t - 3.984\ 9)^2}{506.603\ 12} \times \frac{(t + 286.460\ 1)}{(t + 67.760\ 1)}$$

where d_t is the density in $kg.m^{-3}$, and

t is the temperature in °C;

(b) when p is 101 325 Pa and t is between two adjacent values of temperature listed in the attached table then the magnitude of the density in $kg.m^{-3}$ shall be determined from the table by linear interpolation;

(c) when p differs from 101 325 Pa the magnitude of the density in $kg.m^{-3}$ as stated in the attached table or derived therefrom in accordance with the above linear interpolation shall be algebraically increased by an amount equal to

$(5.061\ 9 - 0.030\ 9\ t + 0.000\ 361\ 4\ t^2) \times 10^{-7}(p - 101\ 325)$; and

(d) if the value of t used in the attached table and the above equations does not differ from the true mean temperature of the water by more than 0.1°C, if the value of p used in the equation does not differ from the true mean pressure within the water by more than 1 000 Pa, and if impurities in the water do not exceed 1 part in 10^5 by mass, the chance is not more than one in one hundred that the density so ascertained differs from the true density by more than 0.05 $kg.m^{-3}$.

Dated this 21st day of March 1985

THE COMMON SEAL OF THE NATIONAL STANDARDS COMMISSION was hereto affixed by authority of the Commission in the presence of

NATIONAL STANDARDS COMMISSION

THE DENSITY OF WATER IN KILOGRAMS PER CUBIC METRE

AS A FUNCTION OF THE TEMPERATURE IN DEGREES CELSIUS

TABLE 1A - 0.0°C to 20.0°C

TEMP	DENSITY	TEMP	DENSITY	TEMP	DENSITY	TEMP	DENSITY
0.0	999.839	5.0	999.964	10.0	999.700	15.0	999.100
0.1	999.846	5.1	999.962	10.1	999.691	15.1	999.084
0.2	999.853	5.2	999.960	10.2	999.682	15.2	999.069
0.3	999.859	5.3	999.958	10.3	999.673	15.3	999.054
0.4	999.865	5.4	999.956	10.4	999.663	15.4	999.038
0.5	999.871	5.5	999.954	10.5	999.654	15.5	999.023
0.6	999.877	5.6	999.952	10.6	999.645	15.6	999.007
0.7	999.883	5.7	999.949	10.7	999.635	15.7	998.991
0.8	999.888	5.8	999.946	10.8	999.625	15.8	998.975
0.9	999.893	5.9	999.943	10.9	999.615	15.9	998.959
1.0	999.898	6.0	999.940	11.0	999.605	16.0	998.943
1.1	999.903	6.1	999.937	11.1	999.595	16.1	998.927
1.2	999.908	6.2	999.934	11.2	999.585	16.2	998.910
1.3	999.913	6.3	999.930	11.3	999.574	16.3	998.894
1.4	999.917	6.4	999.927	11.4	999.564	16.4	998.877
1.5	999.921	6.5	999.923	11.5	999.553	16.5	998.860
1.6	999.925	6.6	999.919	11.6	999.542	16.6	998.843
1.7	999.929	6.7	999.915	11.7	999.531	16.7	998.827
1.8	999.933	6.8	999.910	11.8	999.520	16.8	998.809
1.9	999.936	6.9	999.906	11.9	999.509	16.9	998.792
2.0	999.940	7.0	999.902	12.0	999.497	17.0	998.775
2.1	999.943	7.1	999.897	12.1	999.486	17.1	998.757
2.2	999.946	7.2	999.892	12.2	999.474	17.2	998.740
2.3	999.949	7.3	999.887	12.3	999.463	17.3	998.722
2.4	999.952	7.4	999.882	12.4	999.451	17.4	998.704
2.5	999.954	7.5	999.877	12.5	999.439	17.5	998.687
2.6	999.956	7.6	999.871	12.6	999.427	17.6	998.669
2.7	999.959	7.7	999.866	12.7	999.415	17.7	998.650
2.8	999.961	7.8	999.860	12.8	999.402	17.8	998.632
2.9	999.962	7.9	999.854	12.9	999.390	17.9	998.614
3.0	999.964	8.0	999.848	13.0	999.377	18.0	998.596
3.1	999.966	8.1	999.842	13.1	999.364	18.1	998.577
3.2	999.967	8.2	999.836	13.2	999.352	18.2	998.558
3.3	999.968	8.3	999.830	13.3	999.339	18.3	998.540
3.4	999.969	8.4	999.823	13.4	999.326	18.4	998.521
3.5	999.970	8.5	999.816	13.5	999.312	18.5	998.502
3.6	999.971	8.6	999.810	13.6	999.299	18.6	998.483
3.7	999.971	8.7	999.803	13.7	999.286	18.7	998.463
3.8	999.972	8.8	999.795	13.8	999.272	18.8	998.444
3.9	999.972	8.9	999.788	13.9	999.258	18.9	998.425
4.0	999.972	9.0	999.781	14.0	999.244	19.0	998.405
4.1	999.972	9.1	999.773	14.1	999.230	19.1	998.386
4.2	999.972	9.2	999.766	14.2	999.216	19.2	998.366
4.3	999.971	9.3	999.758	14.3	999.202	19.3	998.346
4.4	999.971	9.4	999.750	14.4	999.188	19.4	998.326
4.5	999.970	9.5	999.742	14.5	999.173	19.5	998.306
4.6	999.969	9.6	999.734	14.6	999.159	19.6	998.286
4.7	999.968	9.7	999.725	14.7	999.144	19.7	998.266
4.8	999.967	9.8	999.717	14.8	999.130	19.8	998.245
4.9	999.965	9.9	999.708	14.9	999.115	19.9	998.225
5.0	999.964	10.0	999.700	15.0	999.100	20.0	998.204

NATIONAL STANDARDS COMMISSION

THE DENSITY OF WATER IN KILOGRAMS PER CUBIC METRE

AS A FUNCTION OF THE TEMPERATURE IN DEGREES CELSIUS

TABLE 1B - 20.0°C to 40.0°C

TEMP	DENSITY	TEMP	DENSITY	TEMP	DENSITY	TEMP	DENSITY
20.0	998.204	25.0	997.045	30.0	995.647	35.0	994.032
20.1	998.183	25.1	997.019	30.1	995.617	35.1	993.998
20.2	998.163	25.2	996.993	30.2	995.587	35.2	993.963
20.3	998.142	25.3	996.968	30.3	995.556	35.3	993.929
20.4	998.121	25.4	996.942	30.4	995.526	35.4	993.894
20.5	998.100	25.5	996.916	30.5	995.495	35.5	993.859
20.6	998.078	25.6	996.889	30.6	995.465	35.6	993.824
20.7	998.057	25.7	996.863	30.7	995.434	35.7	993.790
20.8	998.036	25.8	996.837	30.8	995.403	35.8	993.755
20.9	998.014	25.9	996.810	30.9	995.372	35.9	993.719
21.0	997.992	26.0	996.784	31.0	995.341	36.0	993.684
21.1	997.971	26.1	996.757	31.1	995.310	36.1	993.649
21.2	997.949	26.2	996.730	31.2	995.279	36.2	993.614
21.3	997.927	26.3	996.704	31.3	995.248	36.3	993.578
21.4	997.905	26.4	996.677	31.4	995.216	36.4	993.543
21.5	997.883	26.5	996.650	31.5	995.185	36.5	993.508
21.6	997.860	26.6	996.623	31.6	995.153	36.6	993.472
21.7	997.838	26.7	996.595	31.7	995.122	36.7	993.436
21.8	997.816	26.8	996.568	31.8	995.090	36.8	993.400
21.9	997.793	26.9	996.541	31.9	995.058	36.9	993.365
22.0	997.770	27.0	996.513	32.0	995.026	37.0	993.329
22.1	997.748	27.1	996.486	32.1	994.995	37.1	993.293
22.2	997.725	27.2	996.458	32.2	994.962	37.2	993.257
22.3	997.702	27.3	996.430	32.3	994.930	37.3	993.221
22.4	997.679	27.4	996.403	32.4	994.898	37.4	993.184
22.5	997.656	27.5	996.375	32.5	994.866	37.5	993.148
22.6	997.632	27.6	996.347	32.6	994.834	37.6	993.112
22.7	997.609	27.7	996.318	32.7	994.801	37.7	993.075
22.8	997.586	27.8	996.290	32.8	994.769	37.8	993.039
22.9	997.562	27.9	996.262	32.9	994.736	37.9	993.002
23.0	997.538	28.0	996.234	33.0	994.703	38.0	992.965
23.1	997.515	28.1	996.205	33.1	994.670	38.1	992.929
23.2	997.491	28.2	996.177	33.2	994.638	38.2	992.892
23.3	997.467	28.3	996.148	33.3	994.605	38.3	992.855
23.4	997.443	28.4	996.119	33.4	994.572	38.4	992.818
23.5	997.419	28.5	996.090	33.5	994.539	38.5	992.781
23.6	997.394	28.6	996.062	33.6	994.505	38.6	992.743
23.7	997.370	28.7	996.033	33.7	994.472	38.7	992.706
23.8	997.346	28.8	996.003	33.8	994.439	38.8	992.669
23.9	997.321	28.9	995.974	33.9	994.405	38.9	992.632
24.0	997.297	29.0	995.945	34.0	994.372	39.0	992.594
24.1	997.272	29.1	995.916	34.1	994.338	39.1	992.557
24.2	997.247	29.2	995.886	34.2	994.304	39.2	992.519
24.3	997.222	29.3	995.857	34.3	994.271	39.3	992.481
24.4	997.197	29.4	995.827	34.4	994.237	39.4	992.444
24.5	997.172	29.5	995.797	34.5	994.203	39.5	992.406
24.6	997.147	29.6	995.768	34.6	994.169	39.6	992.368
24.7	997.121	29.7	995.738	34.7	994.135	39.7	992.330
24.8	997.096	29.8	995.708	34.8	994.101	39.8	992.292
24.9	997.071	29.9	995.678	34.9	994.066	39.9	992.254
25.0	997.045	30.0	995.647	35.0	994.032	40.0	992.215