

# FLEXOGRAPHIC PRINTING - VISCOSITY CONVERSION TABLES

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How to Read the Conversion Table: #2 Shell Cup will drain in 39 seconds on a sample whose viscosity is 20 centipoise

CENTIPOISE	7.50	10.0	15.0	20.0	25.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100	125	150	175	200	225	250	275	300	325	350	375	400	References
Shell Cup #2	18.3	22	30.4	39	47	56																				A-2482-RAW / Note 2
Shell Cup #2.5			19	25	30	35.6	46.6	57																		A-3225-TAW / Note 2&3
Shell Cup #3					18.6	22	28.6	35	42	48	55															A-2483-TCW / Note 2
Shell Cup #3.5							20	24.6	29.2	34	38.4	43	47.8	59.4												A-2666-TAW / Note 2&3
Shell Cup #4									18	21	24	27	30	37	45	52	60									A-2484-TAW / Note 2
Shell Cup #5													16	20	24	28	32	36	40	44	48	52	56	60	64	A-2485-TA W/ Note 2
Zahn Cup #1	30.5	32	35	38	42	45	52	60	68																	See Note 1
Zahn Cup #2				18	19	20	22.5	25	28	30	34	38	43	53	63	72										See Note 1
Zahn Cup #3													17	19.5	22	24.5	27	30	32	35.5	38	41	43	45	48.5	See Note 1
Zahn Cup #4																17	18	19.5	21	22.5	24	26	28	30	32	See Note 1
Ford Cup #3										32	37	40	43	53	63	73	83	93	103	113	120	130				See Note 1
Ford Cup #4										20	22	25	28	35	40	48	55	62	70	76	82	90	98	103		See Note 1
ISO Cup #4						26	33	39	46	53	60															A-4004-T
DIN Cup #4								20	22	24	26	28	30	35	40	46	50	56	61	71						A-4286-T
AFNOR Cup #4								20	22	24	26	28	30	35	40	46	50	56	61	71						File Notes
Norcross Cup #2	28	34	45	55	67	76																				A-1920-T
Norcross Cup #3					17	20	25	30	35	40	45	50	55	68	79											A-1920-T
Norcross Cup #4													18	22	27	32	36	40	44	48	53	57	61	65	68	A-1920-T
B4 Cup				17	18	19																				File Notes
M8BO - C Piston	742	740	740	738	738	738	735	735	735	735	735	735	730	730	730	725	725	725	725	725	725	725	725	720	720	File Notes

See Also A-4114-TW

## Notes & Comments:

Note 1: This data is based upon a table from Worthington Pump, 1956 which was based upon original test data no longer available. Not all 'Zahn' Cups match this data.

Note 2: This data is based upon original mechanical design of Shell Chemical. Equations in ASTM 4212 do not match actual values, as they were based upon prior data plots that are no longer available and do not match the actual cups.

Note 3: The 2 1/2 and 3 1/2 Shell Cup were introduced in the 1970's to provide additional viscosity range coverage.

Note 4: Typical piston size recommended for use in the Model M8BO process viscometer ( with length code C - other lengths may require different pistons ) - Contact Norcross for information.

Note 5: Data based on S.G. =1  
Centipoise = Centistokes X S.G.

Note 6: The Flexographic Technical Association published a study by the National Association of Printing Ink Manufacturers ( NAPIM ) in their June 1988 Issue of Flexo. This study compares and contrasts the Zahn / Shell / ISO & Din Cups. Copies of this can be obtained by contacting Norcross Corporation and requesting reprint 0142.

Bulletin  
V-1262-A