

## Shell Cup Information Package Conversion Table

### How to Read the Conversion Table:

#2 Shell Cup will drain in 39 seconds on a sample whose viscosity is 20 centipoise

Centipoise	2	3	5	7.5	10	15	20	25	30	40	50	60	70	80	90	100	125	150	175	200	225	250	275	300	325	350	375	400	500	600	700	See Note	
Shell Cup #1	21.5	26	35	46	57																											2	
Shell Cup #2				18.3	22	30.4	39	47	56																							2	
Shell Cup #2.5						19	25	30	35.6	46.6	57																					3	
Shell Cup #3								18.6	22	28.6	35	42	48	55																		3	
Shell Cup #3.5									17.5	20	24.6	29.2	34	38.4	43	47.8	59.4															2	
Shell Cup #4												18	21	24	27	30	37	45	52	60												2	
Shell Cup #5															16	20	24	28	32	36	40	44	48	52	56	60	64					2	
Shell Cup #6																							17.5	19	20.5	22.5	24	25	31.5	37.5	44	2	
Zahn #1				30.5	32	35	38	42	45	52	60	68																				1	
Zahn #2							18	19	20	22.5	25	28	30	34	38	43	53	63	72														1
Zahn #3																17	19.5	22	24.5	27	30	32	35.5	38	41	43	45	48.5				1	
Zahn #4																		17	18	19.5	21	22.5	24	26	28	30	32					1	
Ford Cup #3													32	37	40	43	53	63	73	83	93	103	113	120	130							1	
Ford Cup #4													20	22	25	28	35	40	48	55	62	70	76	82	90	98	103					1	
ISO Cup #4									26	33	39	46	53	60																		7	
DIN Cup #4										20	22	24	26	28	30	35	40	46	50	56	61	71											7
AFNOR #4										20	22	24	26	28	30	35	40	46	50	56	61	71										File Notes	
Norcross Cup #2		19	23	28	34	45	55	67	76																							7	
Norcross Cup #3								17	20	25	30	35	40	45	50	55	68	79															7
Norcross Cup #4															18	22	27	32	36	40	44	48	53	57	61	65	68					7	
B4 Cup							17	18	19																							File Notes	

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.

Note 7: ISO Cup #4- See drawing A-4004-T  
DIN Cup #4- See drawing A-4286-T  
Norcross Cup #2, #3, #4- See drawing A-1920-T