

Zahn-Type Dip Cups

Viscosity Cups

BYK-Gardner Dip Viscosity Cups (Zahn Type) may be used anywhere – in shops, factories and laboratories – for quickly checking and adjusting the viscosity of many different types of liquids.

- Simple and durable
- Range from about 20 to 1800 centistokes
- Precision-drilled orifices
- Orifice diameters adjusted at the factory for appropriate results with applicable NIST traceable Newtonian oils
- In compliance with ASTM D 4212



Each cup has a 12-inch loop handle to allow the cup to be dipped by hand into a liquid container. At the center of this handle is a finger-ring for holding the cup in a vertical position during use. Results should be reported in Zahn-Seconds at a specified temperature for a particular cup. To convert Zahn-Seconds to centistokes, refer to ASTM D 4212.

The following formula can be applied to calculate the viscosity in centistokes.

Centistokes x Specific Gravity = Centipoise

Centistokes = $K \times (\text{efflux time} - C)$

The various parameters can be seen in the following table.

Conversion Factors	K	C
Cup #1	1.1	29
Cup #2	3.5	14
Cup #3	11.7	7.5
Cup #4	14.8	5
Cup #5	23	0

Standards

ASTM D816
ASTM D1064
ASTM D4212

Catalog Number	Short Description	Cup No.	Cup Type	Range	Efflux Time	Certificate	Weight	
2102	S90 Zahn Cup No.2	Cup No. 2	S90 Zahn	39 - 238 cSt	19 - 60 sec		0.2 kg	0.4 lb
2103	S90 Zahn Cup No.3	Cup No. 3	S90 Zahn	63 - 604 cSt	11 - 60 sec		0.2 kg	0.4 lb
2104	S90 Zahn Cup No.4	Cup No. 4	S90 Zahn	97 - 899 cSt	10 - 60 sec		0.2 kg	0.4 lb
2106	EZ Zahn Cup No.1	Cup No. 1	EZ Zahn	10 - 36 cSt	40 - 60 sec		0.2 kg	0.4 lb
2107	EZ Zahn Cup No.2	Cup No. 2	EZ Zahn	19 - 156 cSt	20 - 60 sec		0.2 kg	0.4 lb
2108	EZ Zahn Cup No.3	Cup No. 3	EZ Zahn	64 - 596 cSt	12 - 60 sec		0.2 kg	0.4 lb
2109	EZ Zahn Cup No.4	Cup No. 4	EZ Zahn	79 - 784 cSt	10 - 60 sec		0.2 kg	0.4 lb
6919	S90 Zahn Cup No.1	Cup No. 1	S90 Zahn	15 - 78 cSt	31 - 60 sec		0.2 kg	0.4 lb
6920	S90 Zahn Cup No.5	Cup No. 5	S90 Zahn	219 - 1627 cSt	10 - 60 sec		0.2 kg	0.4 lb
6922	EZ Zahn Cup No.5	Cup No. 5	EZ Zahn	161 - 1401 cSt	10 - 60 sec		0.2 kg	0.4 lb
8201	Zahn Type Cup No.1	Cup No. 1	Zahn Type	0 - 60 cSt	20 - 84 sec		0.2 kg	0.4 lb
8202	Zahn Type Cup No.2	Cup No. 2	Zahn Type	30 - 230 cSt	22 - 80 sec		0.2 kg	0.4 lb
8203	Zahn Type Cup No.3	Cup No. 3	Zahn Type	150 - 830 cSt	20 - 80 sec		0.2 kg	0.4 lb
8204	Zahn Type Cup No.4	Cup No. 4	Zahn Type	230 - 1100 cSt	20 - 80 sec		0.2 kg	0.4 lb
8205	Zahn Type Cup No.5	Cup No. 5	Zahn Type	460 - 1800 cSt	20 - 78 sec		0.2 kg	0.4 lb
8206	Cert. Zahn Type Cup No.1	Cup No. 1	Zahn Type certified	0 - 60 cSt	20 - 84 sec	included	0.2 kg	0.4 lb
8207	Cert. Zahn Type Cup No.2	Cup No. 2	Zahn Type certified	30 - 230 cSt	22 - 80 sec	included	0.2 kg	0.4 lb
8208	Cert. Zahn Type Cup No.3	Cup No. 3	Zahn Type certified	150 - 830 cSt	20 - 80 sec	included	0.2 kg	0.4 lb
8209	Cert. Zahn Type Cup No.4	Cup No. 4	Zahn Type certified	230 - 1100 cSt	20 - 80 sec	included	0.2 kg	0.4 lb
8210	Cert. Zahn Type Cup No.5	Cup No. 5	Zahn Type certified	460 - 1800 cSt	20 - 78 sec	included	0.2 kg	0.4 lb
8300	Cert. S90 Zahn Cup No.1	Cup No. 1	S90 Zahn certified	15 - 78 cSt	31 - 60 sec	included	0.2 kg	0.4 lb
8301	Cert. S90 Zahn Cup No.2	Cup No. 2	S90 Zahn certified	39 - 238 cSt	19 - 60 sec	included	0.2 kg	0.4 lb

Catalog Number	Short Description	Cup No.	Cup Type	Range	Efflux Time	Certificate	Weight	
8202	Zahn Type Cup No.2	Cup No. 2	Zahn Type	30 - 230 cSt	22 - 80 sec		0.2 kg	0.4 lb
8203	Zahn Type Cup No.3	Cup No. 3	Zahn Type	150 - 830 cSt	20 - 80 sec		0.2 kg	0.4 lb
8204	Zahn Type Cup No.4	Cup No. 4	Zahn Type	230 - 1100 cSt	20 - 80 sec		0.2 kg	0.4 lb
8205	Zahn Type Cup No.5	Cup No. 5	Zahn Type	460 - 1800 cSt	20 - 78 sec		0.2 kg	0.4 lb
8206	Cert. Zahn Type Cup No.1	Cup No. 1	Zahn Type certified	0 - 60 cSt	20 - 84 sec	included	0.2 kg	0.4 lb
8207	Cert. Zahn Type Cup No.2	Cup No. 2	Zahn Type certified	30 - 230 cSt	22 - 80 sec	included	0.2 kg	0.4 lb
8208	Cert. Zahn Type Cup No.3	Cup No. 3	Zahn Type certified	150 - 830 cSt	20 - 80 sec	included	0.2 kg	0.4 lb
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8301	Cert. S90 Zahn Cup No.2	Cup No. 2	S90 Zahn certified	39 - 238 cSt	19 - 60 sec	included	0.2 kg	0.4 lb
8302	Cert. S90 Zahn Cup No.3	Cup No. 3	S90 Zahn certified	63 - 604 cSt	11 - 60 sec	included	0.2 kg	0.4 lb
8303	Cert. S90 Zahn Cup No.4	Cup No. 4	S90 Zahn certified	97 - 899 cSt	10 - 60 sec	included	0.2 kg	0.4 lb
8304	Cert. S90 Zahn Cup No.5	Cup No. 5	S90 Zahn certified	219 - 1627 cSt	10 - 60 sec	included	0.2 kg	0.4 lb
8305	Cert. EZ Zahn Cup No.1	Cup No. 1	EZ Zahn certified	10 - 36 cSt	40 - 60 sec	included	0.2 kg	0.4 lb
8306	Cert. EZ Zahn Cup No.2	Cup No. 2	EZ Zahn certified	19 - 156 cSt	20 - 60 sec	included	0.2 kg	0.4 lb
8307	Cert. EZ Zahn Cup No.3	Cup No. 3	EZ Zahn certified	64 - 596 cSt	12 - 60 sec	included	0.2 kg	0.4 lb
8308	Cert. EZ Zahn Cup No.4	Cup No. 4	EZ Zahn certified	79 - 784 cSt	10 - 60 sec	included	0.2 kg	0.4 lb

Catalog Number	Short Description
4000	Viscosity Standard C10
4001	Viscosity Standard C20
4002	Viscosity Standard C35
4003	Viscosity Standard C60
4004	Viscosity Standard C100
4005	Viscosity Standard C200
4006	Viscosity Standard C350
4015	Viscosity Standard C600