

# ASTM THERMOMETERS, TEST SPECIMENS AND GLASSWARE

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## ASTM THERMOMETERS

Koehler is pleased to offer our customers calibrated thermometers in addition to the wide range of ASTM thermometers available. Thermometers are calibrated to ASTM E-1 requirements in accordance with Method E-77 and are NIST traceable. Calibrated thermometers come with an ISO/IEC 17025 and ANSI/NCSL Z-540-1 Report of Calibration. When ordering, please indicate by catalog number the thermometer(s) which meet your testing requirements.

Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-01C	1C	—	Partial Immersion	-20 to +150°C
250-004-01C	1C	—	1C CERTIFIED @ ASTM specified test points of -20, 0, +50, 100, 150°C	
250-000-01F	1F	—	Partial Immersion	0 to 302°F
250-004-01F	1F	—	1F CERTIFIED @ ASTM specified test points of 0, 32, 122, 212, 302°F	
250-000-02C	2C	62C	Partial Immersion	-5 to +300°C
250-004-02C	2C	62C	2C CERTIFIED @ ASTM specified test points of 0, 75, 150, 225, 300°C	
250-000-02F	2F	62F	Partial Immersion	20 to 580°F
250-004-02F	2F	62F	2F CERTIFIED @ ASTM specified test points of 32, 150, 300, 450, 580°F	
250-000-03C	3C	73C	Partial Immersion	-5 to +400°C
250-004-03C	3C	73C	3C CERTIFIED @ ASTM specified test points of 0, 100, 200, 300, 370°C	
250-000-03F	3F	73F	Partial Immersion	20 to 760°F
250-004-03F	3F	73F	3F CERTIFIED @ ASTM specified test points of 32, 200, 370, 540, 700°F	
250-000-04C	4C	—	Acid Heat	-1 to +105°C
250-004-04C	4C	—	4C CERTIFIED @ ASTM specified test points of 0, 50, 100°C	
250-000-04F	4F	—	Acid Heat	30 to 220°F
250-004-04F	4F	—	4F CERTIFIED @ ASTM specified test points of 32, 122, 212°F	
250-000-05C	5C	1C	Cloud & Pour, High	-38 to +50°C
250-004-05C	5C	1C	5C CERTIFIED @ ASTM specified test points of -35, 0, +50°C	
250-000-05F	5F	1F	Cloud & Pour, High	-36 to +120°F
250-004-05F	5F	1F	5F CERTIFIED @ ASTM specified test points of -30, +32, 120°F	
250-000-06C	6C	2C	Cloud & Pour, Low	-80 to +20°C
250-004-06C	6C	2C	6C CERTIFIED @ ASTM specified test points of -70, -35, 0, +20°C	
250-000-06F	6F	2F	Cloud & Pour, Low	-112 to +70°F
250-004-06F	6F	2F	6F CERTIFIED @ ASTM specified test points of -94, -30, +32, 70°F	
250-000-07C	7C	5C	Distillation, Low	-2 to +300°C
250-004-07C	7C	5C	7C CERTIFIED @ ASTM specified test points of 0, 50, 100, 150, 200, 250, 300°C	
250-000-07F	7F	—	Distillation, Low	30 to 580°F
250-004-07F	7F	—	7F CERTIFIED @ ASTM specified test points of 32, 100, 200, 300, 400, 500, 570°F	
250-000-08C	8C	6C	Distillation, High	-2 to +400°C
250-004-08C	8C	6C	8C CERTIFIED @ ASTM specified test points of 0, 100, 200, 300, 370°C	
250-000-08F	8F	—	Distillation, High	30 to 760°F
250-004-08F	8F	—	8F CERTIFIED @ ASTM specified test points of 32, 200, 370, 540, 700°F	
250-000-09C	9C	15C	Pensky-Martens, Low	-5 to +110°C
250-004-09C	9C	15C	9C CERTIFIED @ ASTM specified test points of 0, 35, 70, 105°C	
250-000-09F	9F	15F	Pensky-Martens, Low	20 to 230°F
250-004-09F	9F	15F	9F CERTIFIED @ ASTM specified test points of 32, 100, 160, 220°F	
250-000-10C	10C	16C	Pensky-Martens, High	90 to 370°C
250-004-10C	10C	16C	10C CERTIFIED @ ASTM specified test points of 100, 200, 300, 370°C	
250-000-10F	10F	16F	Pensky-Martens, High	200 to 700°F
250-004-10F	10F	16F	10F CERTIFIED @ ASTM specified test points of 212, 390, 570, 700°F	
250-000-11C	11C	28C	Open Flash	-6 to +400°C
250-004-11C	11C	28C	11C CERTIFIED @ ASTM specified test points of 0, 100, 200, 300, 370°C	
250-000-11F	11F	28F	Open Flash	20 to 760°F
250-004-11F	11F	28F	11F CERTIFIED @ ASTM specified test points of 32, 200, 370, 540, 700°F	
250-000-12C	12C	64C	Gravity (Density)	-20 to +102°C
250-004-12C	12C	64C	12C CERTIFIED @ ASTM specified test points of -20, -10, 0, +10, 20, 30, 40, 50, 60, 70, 80, 90, 100°C	
250-000-12F	12F	64F	Gravity (Density)	-5 to +215°F
250-004-12F	12F	64F	12F CERTIFIED @ ASTM specified test points of -5, 15, 32, 60, 85, 110, 135, 160, 185, 210°F	

*Koehler now offers mercury-free, liquid-in-glass thermometers that have the performance of mercury. Please contact Koehler Customer Service for availability of non-mercury type thermometer of interest. Please note, not all ASTM thermometers are available as non-mercury type.*

## ASTM THERMOMETERS

Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-13C	13C	47C	Loss on Heat	155 to 170°C
250-004-13C	13C	47C	13C CERTIFIED @ ASTM specified test points of 155, 163, 170°C	
250-000-14C	14C	17C	Paraffin Wax Melting Point	38 to 82°C
250-004-14C	14C	17C	14C CERTIFIED @ ASTM specified test points of 40, 50, 60, 70, 80°C	
250-000-14F	14F	17F	Paraffin Wax Melting Point	100 to 180°F
250-004-14F	14F	17F	14F CERTIFIED @ ASTM specified test points of 100, 120, 140, 160, 180°F	
250-000-15C	15C	60C	Softening Point, Low	-2 to +80°C
250-004-15C	15C	60C	15C CERTIFIED @ ASTM specified test points of 0, 20, 40, 60, 80°C	
250-000-15F	15F	—	Softening Point, Low	30 to 180°F
250-004-15F	15F	—	15F CERTIFIED @ ASTM specified test points of 32, 70, 100, 140, 180°F	
250-000-16C	16C	61C	Softening Point, High	30 to 200°C
250-004-16C	16C	61C	16C CERTIFIED @ ASTM specified test points of 30, 60, 90, 120, 150, 180, 200°C	
250-000-16F	16F	—	Softening Point, High	85 to 392°F
250-004-16F	16F	—	16F CERTIFIED @ ASTM specified test points of 90, 140, 190, 240, 290, 340, 390°F	
250-000-17C	17C	—	Saybolt Viscosity	19 to 27°C
250-004-17C	17C	—	17C CERTIFIED @ ASTM specified test points of 21, 25°C	
250-000-17F	17F	—	Saybolt Viscosity	66 to 80°F
250-004-17F	17F	—	17F CERTIFIED @ ASTM specified test points of 70, 77°F	
250-000-18C	18C	23C	Saybolt Viscosity & Reid Vapor	34 to 42°C
250-004-18C	18C	23C	18C CERTIFIED @ ASTM specified test points of 38, 41°C	
250-000-18F	18F	23F	Saybolt Viscosity & Reid Vapor	94 to 108°F
250-004-18F	18F	23F	18F CERTIFIED @ ASTM specified test points of 100, 107°F	
250-000-19C	19C	—	Saybolt Viscosity	49 to 57°C
250-004-19C	19C	—	19C CERTIFIED @ ASTM specified test points of 50, 54°C	
250-000-19F	19F	—	Saybolt Viscosity	120 to 134°F
250-004-19F	19F	—	19F CERTIFIED @ ASTM specified test points of 122, 130°F	
250-000-20C	20C	—	Saybolt Viscosity	57 to 65°C
250-004-20C	20C	—	20C CERTIFIED @ ASTM specified test points of 60, 64°C	
250-000-20F	20F	—	Saybolt Viscosity	134 to 148°F
250-004-20F	20F	—	20F CERTIFIED @ ASTM specified test points of 140, 147°F	
250-000-21C	21C	—	Saybolt Viscosity	79 to 87°C
250-004-21C	21C	—	21C CERTIFIED @ ASTM specified test points of 82, 86°C	
250-000-21F	21F	—	Saybolt Viscosity	174 to 188°F
250-004-21F	21F	—	21F CERTIFIED @ ASTM specified test points of 180, 187°F	
250-000-22C	22C	24C	Saybolt Viscosity & Oxidation Stability	95 to 103°C
250-004-22C	22C	24C	22C CERTIFIED @ ASTM specified test points of 99, 102°C	
250-000-22F	22F	24F	Saybolt Viscosity & Oxidation Stability	204 to 218°F
250-004-22F	22F	24F	22F CERTIFIED @ ASTM specified test points of 210, 212°F	
250-000-23C	23C	—	Viscosity Engler	18 to 28°C
250-004-23C	23C	—	23C CERTIFIED @ ASTM specified test points of 20, 25°C	
250-000-24C	24C	—	Viscosity Engler	39 to 54°C
250-004-24C	24C	—	24C CERTIFIED @ ASTM specified test points of 40, 50°C	
250-000-25C	25C	—	Viscosity Engler	95 to 105°C
250-004-25C	25C	—	25C CERTIFIED @ ASTM specified test points of 95, 100°C	
250-000-26C	26C	—	Stability Test of Soluble Nitro-Cellulose	130 to 140°C
250-004-26C	26C	—	26C CERTIFIED @ ASTM specified test points of 130, 135, 140°C	
250-000-27C	27C	—	Turpentine Distillation	147 to 182°C
250-004-27C	27C	—	27C CERTIFIED @ ASTM specified test points of 155, 165, 175°C	
250-000-28C	28C	31C	Kinematic Viscosity @ 37.8C	36.6 to 39.4°C
250-004-28C	28C	31C	28C CERTIFIED @ ASTM specified test points of 0, 37.8, 39°C	
250-000-28F	28F	—	Kinematic Viscosity @ 100F	97.5 to 102.5°F
250-004-28F	28F	—	28F CERTIFIED @ ASTM specified test points of 32, 100, 102°F	

## ASTM THERMOMETERS

Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-29C	29C	34C	Kinematic Viscosity @ 54.4C	52.6 to 55.4°C
250-004-29C	29C	34C	29C CERTIFIED @ ASTM specified test points of 0, 54.4, 55°C	
250-000-29F	29F	—	Kinematic Viscosity @ 130F	127.5 to 132.5°F
250-004-29F	29F	—	29F CERTIFIED @ ASTM specified test points of 32, 130, 132°F	
250-000-30F	30F	32F	Kinematic Viscosity @ 210F	207.5 to 212.5°F
250-004-30F	30F	32F	30F CERTIFIED @ ASTM specified test points of 32, 210, 212°F	
250-000-31F	31F	—	Reid Vapor	–30 to +120°F
250-004-31F	31F	—	31F CERTIFIED @ ASTM specified test points of –20, +32, 100°F	
250-000-33C	33C	20C	Aniline Point	–38 to +42°C
250-004-33C	33C	20C	33C CERTIFIED @ ASTM specified test points of –35, –20, 0, +20, 40°C	
250-000-33F	33F	—	Aniline Point	–36.5 to +107.5°F
250-004-33F	33F	—	33F CERTIFIED @ ASTM specified test points of –31, –4, +32, 68, 104°F	
250-000-34C	34C	21C	Aniline Point	25 to 105°C
250-004-34C	34C	21C	34C CERTIFIED @ ASTM specified test points of 25, 45, 65, 85, 100°C	
250-000-34F	34F	—	Aniline Point	77 to 221°F
250-004-34F	34F	—	34F CERTIFIED @ ASTM specified test points of 77, 113, 149, 185, 212°F	
250-000-35C	35C	59C	Aniline Point	90 to 170°C
250-004-35C	35C	59C	35C CERTIFIED @ ASTM specified test points of 100, 120, 140, 160, 170°C	
250-000-35F	35F	—	Aniline Point	194 to 338°F
250-004-35F	35F	—	35F CERTIFIED @ ASTM specified test points of 212, 250, 285, 320, 338°F	
250-000-36C	36C	—	Titer Test	–2 to +68°C
250-004-36C	36C	—	36C CERTIFIED @ ASTM specified test points of 0, 15, 30, 45, 65°C	
250-000-37C	37C	77C	Solvents Distillation	–2 to +52°C
250-004-37C	37C	77C	37C CERTIFIED @ ASTM specified test points of 0, 15, 30, 50°C	
250-000-38C	38C	78C	Solvents Distillation	24 to 78°C
250-004-38C	38C	78C	38C CERTIFIED @ ASTM specified test points of 25, 40, 55, 75°C	
250-000-39C	39C	79C	Solvents Distillation	48 to 102°C
250-004-39C	39C	79C	39C CERTIFIED @ ASTM specified test points of 50, 65, 80, 100°C	
250-000-40C	40C	80C	Solvents Distillation	72 to 126°C
250-004-40C	40C	80C	40C CERTIFIED @ ASTM specified test points of 75, 90, 105, 125°C	
250-000-41C	41C	81C	Solvents Distillation	98 to 152°C
250-004-41C	41C	81C	41C CERTIFIED @ ASTM specified test points of 100, 115, 130, 150°C	
250-000-42C	42C	82C	Solvents Distillation	95 to 255°C
250-004-42C	42C	82C	42C CERTIFIED @ ASTM specified test points of 100, 150, 200, 250°C	
250-000-43C	43C	65C	Kinematic Viscosity	–51.6 to –34°C
250-004-43C	43C	65C	43C CERTIFIED @ ASTM specified test points of –50, –45, –40, –35, 0°C	
250-000-43F	43F	65F	Kinematic Viscosity	–61 to –29°F
250-004-43F	43F	65F	43F CERTIFIED @ ASTM specified test points of –60, –50, –40, –30, +32°F	
250-000-44C	44C	29C	Kinematic Viscosity @ 20C	18.5 to 21.5°C
250-004-44C	44C	29C	44C CERTIFIED @ ASTM specified test points of 0, 20, 21°C	
250-000-44F	44F	29F	Kinematic Viscosity @ 68F	66.5 to 71.5°F
250-004-44F	44F	29F	44F CERTIFIED @ ASTM specified test points of 32, 68, 70°F	
250-000-45C	45C	30C	Kinematic Viscosity @ 25C	23.6 to 26.4°C
250-004-45C	45C	30C	45C CERTIFIED @ ASTM specified test points of 0, 25, 26°C	
250-000-45F	45F	30F	Kinematic Viscosity @ 77F	74.5 to 79.5°F
250-004-45F	45F	30F	45F CERTIFIED @ ASTM specified test points of 32, 77, 79°F	
250-000-46C	46C	66C	Kinematic Viscosity @ 50C	48.6 to 51.4°C
250-004-46C	46C	66C	46C CERTIFIED @ ASTM specified test points of 0, 50, 51°C	
250-000-46F	46F	66F	Kinematic Viscosity @ 122F	119.5 to 124.5°F
250-004-46F	46F	66F	46F CERTIFIED @ ASTM specified test points of 32, 122, 124°F	

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Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-47C	47C	35C	Kinematic Viscosity @ 60C	58.6 to 61.4°C
250-004-47C	47C	35C	47C CERTIFIED @ ASTM specified test points of 0, 60, 61°C	
250-000-47F	47F	35F	Kinematic Viscosity @ 140F	137.5 to 142.5°F
250-004-47F	47F	35F	47F CERTIFIED @ ASTM specified test points of 32, 140, 142°F	
250-000-48C	48C	90C	Kinematic Viscosity @ 82.2C	80.6 to 83.4°C
250-004-48C	48C	90C	48C CERTIFIED @ ASTM specified test points of 0, 82.2, 83°C	
250-000-48F	48F	90F	Kinematic Viscosity @ 180F	177.5 to 182.5°F
250-004-48F	48F	90F	48F CERTIFIED @ ASTM specified test points of 32, 180, 182°F	
250-000-49C	49C	—	Stormer Viscosity	20 to 70°C
250-004-49C	49C	—	49C CERTIFIED @ ASTM specified test points of 20, 35, 50, 70°C	
250-000-50F	50F	—	Gas Calorimeter Inlet	54 to 101°F
250-004-50F	50F	—	50F CERTIFIED @ ASTM specified test points of 55, 60, 65, 70, 75, 80, 85, 90, 95, 100°F	
250-000-51F	51F	—	Gas Calorimeter Outlet	69 to 116°F
250-004-51F	51F	—	51F CERTIFIED @ ASTM specified test points of 70, 75, 80, 85, 90, 95, 100, 105, 110, 115°F	
250-000-52C	52C	—	Butadiene Boiling Point	-10 to +5°C
250-004-52C	52C	—	52C CERTIFIED @ ASTM specified test points of -10, 0, +5°C	
250-000-53C	53C	—	Benzene Freezing Pt	-0.6 to +10.4°C
250-004-53C	53C	—	53C CERTIFIED @ ASTM specified test points of 0, 5, 10°C	
250-000-54C	54C	18C	Congealing Point	20 to 100.6°C
250-004-54C	54C	18C	54C CERTIFIED @ ASTM specified test points of 20, 50, 75, 100°C	
250-000-54F	54F	18F	Congealing Point	68 to 213°F
250-004-54F	54F	18F	54F CERTIFIED @ ASTM specified test points of 70, 120, 170, 210°F	
250-000-56C	56C	—	Bomb Calorimeter	19 to 35°C
250-004-56C	56C	—	56C CERTIFIED @ ASTM specified test points of 19, 21, 23, 25, 27, 29, 31°C	
250-000-56F	56F	—	Bomb Calorimeter	66 to 95°F
250-004-56F	56F	—	56F CERTIFIED @ ASTM specified test points of 66, 70, 74, 78, 82, 88, 92, 95°F	
250-000-57C	57C	—	Tag Closed Tester Low Range	-20 to +50°C
250-004-57C	57C	—	57C CERTIFIED @ ASTM specified test points of -20, 0, 25, +50°C	
250-000-57F	57F	—	Tag Closed Tester Low Range	-4 to +122°F
250-004-57F	57F	—	57F CERTIFIED @ ASTM specified test points of -3, +32, 77, 122°F	
250-000-58C	58C	—	Tank Gauging	-34 to +49°C
250-004-58C	58C	—	58C CERTIFIED @ ASTM specified test points of -30, 0, +25, 45°C	
250-000-58F	58F	—	Tank Gauging	-30 to +120°F
250-004-58F	58F	—	58F CERTIFIED @ ASTM specified test points of -20, +32, 80, 120°F	
250-000-59C	59C	—	Tank Gauging	-18 to +82°C
250-004-59C	59C	—	59C CERTIFIED @ ASTM specified test points of 0, 25, 55, 80°C	
250-000-59F	59F	—	Tank Gauging	0 to 180°F
250-004-59F	59F	—	59F CERTIFIED @ ASTM specified test points of 32, 80, 130, 180°F	
250-000-60C	60C	—	Tank Gauging	77 to 260°C
250-004-60C	60C	—	60C CERTIFIED @ ASTM specified test points of 100, 175, 255°C	
250-000-60F	60F	—	Tank Gauging	170 to 500°F
250-004-60F	60F	—	60F CERTIFIED @ ASTM specified test points of 212, 350, 490°F	
250-000-61C	61C	63C	Petrolatum Melting Point	32 to 127°C
250-004-61C	61C	63C	61C CERTIFIED @ ASTM specified test points of 40, 60, 80, 100, 120°C	
250-000-61F	61F	—	Petrolatum Melting Point	90 to 260°F
250-004-61F	61F	—	61F CERTIFIED @ ASTM specified test points of 100, 150, 200, 250°F	
250-000-62C	62C	—	Reference Standard	-38 to +2°C
250-004-62C	62C	—	62C CERTIFIED @ ASTM specified test points of -37, -30, -20, -10, 0°C	
250-000-62F	62F	—	Reference Standard	-36 to +35°F
250-004-62F	62F	—	62F CERTIFIED @ ASTM specified test points of -35, -15, 0, +15, 32°F	

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Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-63C	63C	—	Reference Standard	-8 to +32°C
250-004-63C	63C	—	63C CERTIFIED @ ASTM specified test points of -7, 0, +10, 20, 30°C	
250-000-63F	63F	—	Reference Standard	18 to 89°F
250-004-63F	63F	—	63F CERTIFIED @ ASTM specified test points of 20, 32, 50, 70, 88°F	
250-000-64C	64C	—	Reference Standard	25 to 55°C
250-004-64C	64C	—	64C CERTIFIED @ ASTM specified test points of 0, 25, 35, 45, 55°C	
250-000-64F	64F	—	Reference Standard	77 to 131°F
250-004-64F	64F	—	64F CERTIFIED @ ASTM specified test points of 32, 80, 95, 115, 130°F	
250-000-65C	65C	—	Reference Standard	50 to 80°C
250-004-65C	65C	—	65C CERTIFIED @ ASTM specified test points of 0, 50, 60, 70, 80°C	
250-000-65F	65F	—	Reference Standard	122 to 176°F
250-004-65F	65F	—	65F CERTIFIED @ ASTM specified test points of 32, 125, 145, 160, 175°F	
250-000-66C	66C	—	Reference Standard	75 to 105°C
250-004-66C	66C	—	66C CERTIFIED @ ASTM specified test points of 0, 75, 85, 95, 105°C	
250-000-66F	66F	—	Reference Standard	167 to 221°F
250-004-66F	66F	—	66F CERTIFIED @ ASTM specified test points of 32, 168, 185, 200, 220°F	
250-000-67C	67C	—	Reference Standard	95 to 155°C
250-004-67C	67C	—	67C CERTIFIED @ ASTM specified test points of 0, 100, 110, 130, 150°C	
250-000-67F	67F	—	Reference Standard	203 to 311°F
250-004-67F	67F	—	67F CERTIFIED @ ASTM specified test points of 32, 205, 240, 275, 310°F	
250-000-68C	68C	—	Reference Standard	145 to 205°C
250-004-68C	68C	—	68C CERTIFIED @ ASTM specified test points of 0, 150, 170, 190, 205°C	
250-000-68F	68F	—	Reference Standard	293 to 401°F
250-004-68F	68F	—	68F CERTIFIED @ ASTM specified test points of 32, 300, 340, 370, 400°F	
250-000-69C	69C	—	Reference Standard	195 to 305°C
250-004-69C	69C	—	69C CERTIFIED @ ASTM specified test points of 0, 200, 235, 270, 305°C	
250-000-69F	69F	—	Reference Standard	383 to 581°F
250-004-69F	69F	—	69F CERTIFIED @ ASTM specified test points of 32, 400, 460, 520, 580°F	
250-000-70C	70C	—	Reference Standard	295 to 405°C
250-004-70C	70C	—	70C CERTIFIED @ ASTM specified test points of 0, 300, 335, 370, 400°C	
250-000-70F	70F	—	Reference Standard	563 to 761°F
250-004-70F	70F	—	70F CERTIFIED @ ASTM specified test points of 32, 570, 640, 700, 760°F	
250-000-71C	71C	72C	Oil in Wax	-37 to +21°C
250-004-71C	71C	72C	71C CERTIFIED @ ASTM specified test points of -35, -18, 0, +20°C	
250-000-71F	71F	72F	Oil in Wax	-35 to +70°F
250-004-71F	71F	72F	71F CERTIFIED @ ASTM specified test points of -30, 0, +32, 70°F	
250-000-72C	72C	67C	Kinematic Viscosity @ -17.8C	-19.4 to -16.6°C
250-004-72C	72C	67C	72C CERTIFIED @ ASTM specified test points of -19, -17.8, 0°C	
250-000-72F	72F	67F	Kinematic Viscosity @ 0F	-2.5 to +2.5°F
250-004-72F	72F	67F	72F CERTIFIED @ ASTM specified test points of -2, 0, +32°F	
250-000-73C	73C	68C	Kinematic Viscosity @ -40C	-41.4 to -38.6°C
250-004-73C	73C	68C	73C CERTIFIED @ ASTM specified test points of -41, -40, 0°C	
250-000-73F	73F	68F	Kinematic Viscosity @ -40F	-42.5 to -37.5°F
250-004-73F	73F	68F	73F CERTIFIED @ ASTM specified test points of -42, -40, +32°F	
250-000-74C	74C	69C	Kinematic Viscosity @ -53.9C	-55.4 to -52.6°C
250-004-74C	74C	69C	74C CERTIFIED @ ASTM specified test points of -55, -53.9, 0°C	
250-000-74F	74F	69F	Kinematic Viscosity @ -65F	-67.5 to -62.5°F
250-004-74F	74F	69F	74F CERTIFIED @ ASTM specified test points of -67, -65, +32°F	
250-000-75F	75F	—	Coolant Freezing Point	-35 to +35°F
250-004-75F	75F	—	75F CERTIFIED @ ASTM specified test points of -35, 0, +32°F	

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## ASTM THERMOMETERS

Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-76F	76F	—	Coolant Freezing Point	-65 to +5°F
250-004-76F	76F	—	76F CERTIFIED @ ASTM specified test points of -65, -30, +32°F	
250-000-77F	77F	—	Saybolt Viscosity	245 to 265°F
250-004-77F	77F	—	77F CERTIFIED @ ASTM specified test points of 250, 260°F	
250-000-78F	78F	—	Saybolt Viscosity	295 to 315°F
250-004-78F	78F	—	78F CERTIFIED @ ASTM specified test points of 300, 310°F	
250-000-79F	79F	—	Saybolt Viscosity	345 to 365°F
250-004-79F	79F	—	79F CERTIFIED @ ASTM specified test points of 350, 360°F	
250-000-80F	80F	—	Saybolt Viscosity	395 to 415°F
250-004-80F	80F	—	80F CERTIFIED @ ASTM specified test points of 400, 410°F	
250-000-81F	81F	—	Saybolt Viscosity	445 to 465°F
250-004-81F	81F	—	81F CERTIFIED @ ASTM specified test points of 450, 460°F	
250-000-82C	82C	—	Fuel Rating, Engine	-15 to +105°C
250-004-82C	82C	—	82C CERTIFIED @ ASTM specified test points of 0, 50, 100°C	
250-000-82F	82F	—	Fuel Rating, Engine	0 to 220°F
250-004-82F	82F	—	82F CERTIFIED @ ASTM specified test points of 32, 100, 200°F	
250-000-83C	83C	—	Fuel Rating, Air	15 to 70°C
250-004-83C	83C	—	83C CERTIFIED @ ASTM specified test points of 25, 70°C	
250-000-83F	83F	—	Fuel Rating, Air	60 to 160°F
250-004-83F	83F	—	83F CERTIFIED @ ASTM specified test points of 85, 135°F	
250-000-84C	84C	—	Fuel Rating, Orifice	25 to 80°C
250-004-84C	84C	—	84C CERTIFIED @ ASTM specified test points of 30, 80°C	
250-000-84F	84F	—	Fuel Rating, Orifice	75 to 175°F
250-004-84F	84F	—	84F CERTIFIED @ ASTM specified test points of 100, 150°F	
250-000-85C	85C	—	Fuel Rating, Surge	40 to 150°C
250-004-85C	85C	—	85C CERTIFIED @ ASTM specified test points of 50, 150°C	
250-000-85F	85F	—	Fuel Rating, Surge	100 to 300°F
250-004-85F	85F	—	85F CERTIFIED @ ASTM specified test points of 150, 250°F	
250-000-86C	86C	—	Fuel Rating, Mix	95 to 175°C
250-004-86C	86C	—	86C CERTIFIED @ ASTM specified test points of 100, 175°C	
250-000-86F	86F	—	Fuel Rating, Mix	200 to 350°F
250-004-86F	86F	—	86F CERTIFIED @ ASTM specified test points of 225, 325°F	
250-000-87C	87C	—	Fuel Rating, Coolant	150 to 205°C
250-004-87C	87C	—	87C CERTIFIED @ ASTM specified test points of 160, 200°C	
250-000-87F	87F	—	Fuel Rating, Coolant	300 to 400°F
250-004-87F	87F	—	87F CERTIFIED @ ASTM specified test points of 300, 400°F	
250-000-88C	88C	—	Vegetable Oil Flash	10 to 200°C
250-004-88C	88C	—	88C CERTIFIED @ ASTM specified test points of 40, 100, 150, 200°C	
250-000-88F	88F	—	Vegetable Oil Flash	50 to 392°F
250-004-88F	88F	—	88F CERTIFIED @ ASTM specified test points of 110, 212, 300, 392°F	
250-000-89C	89C	—	Solidification Point	-20 to +10°C
250-004-89C	89C	—	89C CERTIFIED @ ASTM specified test points of -20, -10, 0, +10°C	
250-000-90C	90C	—	Solidification Point	0 to 30°C
250-004-90C	90C	—	90C CERTIFIED @ ASTM specified test points of 0, 10, 20, 30°C	
250-000-91C	91C	—	Solidification Point	20 to 50°C
250-004-91C	91C	—	91C CERTIFIED @ ASTM specified test points of 20, 30, 40, 50°C	
250-000-92C	92C	—	Solidification Point	40 to 70°C
250-004-92C	92C	—	92C CERTIFIED @ ASTM specified test points of 40, 50, 60, 70°C	
250-000-93C	93C	—	Solidification Point	60 to 90°C
250-004-93C	93C	—	93C CERTIFIED @ ASTM specified test points of 60, 70, 80, 90°C	

## ASTM THERMOMETERS

Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-94C	94C	—	Solidification Point	80 to 110°C
250-004-94C	94C	—	94C CERTIFIED @ ASTM specified test points of 80, 90, 100, 110°C	
250-000-95C	95C	—	Solidification Point	100 to 130°C
250-004-95C	95C	—	95C CERTIFIED @ ASTM specified test points of 100, 110, 120, 130°C	
250-000-96C	96C	—	Solidification Point	120 to 150°C
250-004-96C	96C	—	96C CERTIFIED @ ASTM specified test points of 120, 130, 140, 150°C	
250-000-97C	97C	—	Tank Gauging	-18 to +49°C
250-004-97C	97C	—	97C CERTIFIED @ ASTM specified test points of -15, 0, +20, 45°C	
250-000-97F	97F	—	Tank Gauging	0 to 120°F
250-004-97F	97F	—	97F CERTIFIED @ ASTM specified test points of 0, 32, 70, 110°F	
250-000-98C	98C	—	Tank Gauging	16 to 82°C
250-004-98C	98C	—	98C CERTIFIED @ ASTM specified test points of 20, 40, 60, 80°C	
250-000-98F	98F	—	Tank Gauging	60 to 180°F
250-004-98F	98F	—	98F CERTIFIED @ ASTM specified test points of 60, 100, 140, 180°F	
250-000-99C	99C	—	Weathering Test	-50 to +5°C
250-004-99C	99C	—	99C CERTIFIED @ ASTM specified test points of -46, -32, -18, 0°C	
250-000-99F	99F	—	Weathering Test	-58 to +41°F
250-004-99F	99F	—	99F CERTIFIED @ ASTM specified test points of -50, -25, 0, +32°F	
250-000-100C	100C	—	Solidification Point	145 to 205°C
250-004-100C	100C	—	100C CERTIFIED @ ASTM specified test points of 145, 165, 185, 205°C	
250-000-101C	101C	—	Solidification Point	195 to 305°C
250-004-101C	101C	—	101C CERTIFIED @ ASTM specified test points of 200, 250, 300°C	
250-000-102C	102C	83C	Solvents Distillation	123 to 177°C
250-004-102C	102C	83C	102C CERTIFIED @ ASTM specified test points of 125, 140, 155, 175°C	
250-000-103C	103C	84C	Solvents Distillation	148 to 202°C
250-004-103C	103C	84C	103C CERTIFIED @ ASTM specified test points of 150, 165, 180, 200°C	
250-000-104C	104C	85C	Solvents Distillation	173 to 227°C
250-004-104C	104C	85C	104C CERTIFIED @ ASTM specified test points of 175, 190, 205, 225°C	
250-000-105C	105C	86C	Solvents Distillation	198 to 252°C
250-004-105C	105C	86C	105C CERTIFIED @ ASTM specified test points of 200, 215, 230, 250°C	
250-000-106C	106C	87C	Solvents Distillation	223 to 277°C
250-004-106C	106C	87C	106C CERTIFIED @ ASTM specified test points of 225, 240, 255, 275°C	
250-000-107C	107C	88C	Solvents Distillation	248 to 302°C
250-004-107C	107C	88C	107C CERTIFIED @ ASTM specified test points of 250, 265, 280, 300°C	
250-000-108F	108F	—	Saybolt Viscosity	270 to 290°F
250-004-108F	108F	—	108F CERTIFIED @ ASTM specified test points of 275, 285°F	
250-000-109F	109F	—	Saybolt Viscosity	320 to 340°F
250-004-109F	109F	—	109F CERTIFIED @ ASTM specified test points of 325, 335°F	
250-000-110C	110C	93C	Kinematic Viscosity @ 135C	133.6 to 136.4°C
250-004-110C	110C	93C	110C CERTIFIED @ ASTM specified test points of 0, 135, 136°C	
250-000-110F	110F	—	Kinematic Viscosity @ 275F	272.5 to 277.5°F
250-004-110F	110F	—	110F CERTIFIED @ ASTM specified test points of 32, 275, 277°F	
250-000-111C	111C	—	Tar Acid Distillation	170 to 250°C
250-004-111C	111C	—	111C CERTIFIED @ ASTM specified test points of 170, 200, 250°C	
250-000-112C	112C	—	Solidification Benzene	4 to 6°C
250-004-112C	112C	—	112C CERTIFIED @ ASTM specified test points of 0, 4, 5, 6°C	
250-000-113C	113C	89C	Bituminous Materials Softening Point	-1 to +175°C
250-004-113C	113C	89C	113C CERTIFIED @ ASTM specified test points of 0, 50, 100, 150, 175°C	
250-000-113F	113F	89F	Bituminous Materials Softening Point	30 to 350°F
250-004-113F	113F	89F	113F CERTIFIED @ ASTM specified test points of 32, 122, 212, 302, 347°F	

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## ASTM THERMOMETERS

Catalog Number	ASTM Designation	IP Reference	Name	Range
250-000-114C	114C	14C	Aviation Fuel Freezing Point	-80 to +20°C
250-004-114C	114C	14C	114C CERTIFIED @ ASTM specified test points of -75, -60, -40, 0°C	
250-000-114F	114F	—	Aviation Fuel Freezing Point	-112 to +70°F
250-004-114F	114F	—	114F CERTIFIED @ ASTM specified test points of -103, -76, -40, +32°F	
250-000-115C	115C	—	Beckman Differential	0 to 6°C CERTIFICATION DOES NOT APPLY
250-000-116C	116C	—	Bomb Colorimeter	18.9 to 25.1°C
250-004-116C	116C	—	116C CERTIFIED @ ASTM specified test points of 19, 20, 21, 22, 23, 24, 25°C	
250-000-117C	117C	—	Bomb Calorimeter	23.9 to 30.1°C
250-004-117C	117C	—	117C CERTIFIED @ ASTM specified test points of 24, 25, 26, 27, 28, 29, 30°C	
250-000-118C	118C	—	Kinematic Viscosity @ 30C	28.6 to 31.4°C
250-004-118C	118C	—	118C CERTIFIED @ ASTM specified test points of 0, 30, 31°C	
250-000-118F	118F	—	Kinematic Viscosity @ 86F	83.5 to 88.5°F
250-004-118F	118F	—	118F CERTIFIED @ ASTM specified test points of 32, 86, 88°F	
250-000-119C	119C	—	Coolant Freezing Point	-38.3 to -30°C
250-004-119C	119C	—	119C CERTIFIED @ ASTM specified test points of -38, -30, 0°C	
250-000-119F	119F	—	Coolant Freezing Point	-37 to -22°F
250-004-119F	119F	—	119F CERTIFIED @ ASTM specified test points of -36, -22, +32°F	
250-000-120C	120C	92C	Kinematic Viscosity @ 40C	38.6 to 41.4°C
250-004-120C	120C	92C	120C CERTIFIED @ ASTM specified test points of 0, 40, 41°C	
250-000-121C	121C	32C	Kinematic Viscosity @ 100C	98.6 to 101.4°C
250-004-121C	121C	32C	121C CERTIFIED @ ASTM specified test points of 0, 100, 101°C	
250-000-122C	122C	94C	Brookfield Viscosity	-45 to -35°C
250-004-122C	122C	94C	122C CERTIFIED @ ASTM specified test points of -45, -40, -35°C	
250-000-123C	123C	95C	Brookfield Viscosity	-35 to -25°C
250-004-123C	123C	95C	123C CERTIFIED @ ASTM specified test points of -35, -30, -25°C	
250-000-124C	124C	96C	Brookfield Viscosity	-25 to -15°C
250-004-124C	124C	96C	124C CERTIFIED @ ASTM specified test points of -25, -20, -15°C	
250-000-125C	125C	97C	Brookfield Viscosity	-15 to -5°C
250-004-125C	125C	97C	125C CERTIFIED @ ASTM specified test points of -15, -10, -5°C	
250-000-126C	126C	71C	Kinematic Viscosity @ -26.1C	-27.4 to -24.6°C
250-004-126C	126C	71C	126C CERTIFIED @ ASTM specified test points of -27, -26.1, 0°C	
250-000-126F	126F	71F	Kinematic Viscosity @ -15F	-17.5 to -12.5°F
250-004-126F	126F	71F	126F CERTIFIED @ ASTM specified test points of -17, -15, +32°F	
250-000-127C	127C	99C	Kinematic Viscosity @ -20C	-21.4 to -18.6°C
250-004-127C	127C	99C	127C CERTIFIED @ ASTM specified test points of -21, -20, 0°C	
250-000-128C	128C	33C	Kinematic Viscosity @ 0C	-1.4 to +1.4°C
250-004-128C	128C	33C	128C CERTIFIED @ ASTM specified test points of 0, 1°C	
250-000-128F	128F	33F	Kinematic Viscosity @ 32F	29.5 to 34.5°F
250-004-128F	128F	33F	128F CERTIFIED @ ASTM specified test points of 32, 34°F	
250-000-129C	129C	36C	Kinematic Viscosity @ 93.3C	91.6 to 94.4°C
250-004-129C	129C	36C	129C CERTIFIED @ ASTM specified test points of 0, 93.3, 94°C	
250-000-129F	129F	36F	Kinematic Viscosity @ 200F	197.5 to 202.5°F
250-004-129F	129F	36F	129F CERTIFIED @ ASTM specified test points of 32, 200, 202°F	
250-000-130C	130C	—	Tank Gauging	-7 to +105°C
250-004-130C	130C	—	130C CERTIFIED @ ASTM specified test points of 0, 35, 70, 105°C	
250-000-130F	130F	—	Tank Gauging	20 to 220°F
250-004-130F	130F	—	130F CERTIFIED @ ASTM specified test points of 32, 100, 160, 220°F	
250-000-132C	132C	—	Kinematic Viscosity @ 150C	148.6 to 151.4°C
250-004-132C	132C	—	132C CERTIFIED @ ASTM specified test points of 0, 150, 151°C	

# GLASS APPARATUS FOR ASTM TEST METHODS

## **C70 Determination of the Percentage of Voids and Surface Moisture in Fine Aggregates**

K00C70 Specific Gravity Flask, Chapman, graduated at 200mL and 375-450mL

## **C128 Determination of Specific Gravity of Hydraulic Cement, Sand, Powdered Materials**

K0C128 Specific Gravity Flask, Le Chatelier, 250mL, 17mL Bulb, Graduated Neck

## **C135 Determination of Specific Gravity of Pigments, Drying Oils, Varnishes, Resins, etc.**

KDOC135-10 Pycnometer, 10mL, with Thermometer and Cap

KDOC135-25 Pycnometer, 25mL, with Thermometer and Cap

KDOC135-50 Pycnometer, 50mL, with Thermometer and Cap

KDOC135-100 Pycnometer, 100mL, with Thermometer and Cap

## **C188 Determination of Specific Gravity of Hydraulic Cement, Sand, Other Powdered Materials**

K0C128 Specific Gravity Flask, Le Chatelier, 250mL, 17mL Bulb, Graduated Neck

## **D20 Distillation of Bituminous Products**

K00D20-300 Flask, Distillation, 300mL, Side Arm, 10mm ID x 220mm

K00D20-500 Flask, Distillation, 500mL, Side Arm, 10mm ID x 220mm

## **D29 Analysis of Dry Shellac and Shellac Varnishes**

K00D29-125 Iodine Flask, 125mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-250 Iodine Flask, 250mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-300 Iodine Flask, 300mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-500 Iodine Flask, 500mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-1000 Iodine Flask, 1000mL, S/T 24/40 Mercury Seal w/Hollow Stopper

## **D70 Specific Gravity and Density of Semi-Solid Bituminous Materials**

K00D70 Pycnometer Bottle, 24-30mL, Uncalibrated

## **D115 Determination of Specific Gravity of Solid (Bituminous) Materials, Asphalt Cements, and Soft Tar Pitches**

KOD115-750 Specific Gravity Flask, 750mL, w/Capillary Stem and Cap

KOD115-750 Specific Gravity Flask, 1000mL, w/Capillary Stem and Cap

## **D153 Determination of Specific Gravity of Pigments, Drying Oils, Varnishes, Resins, etc.**

K0C135-10 Pycnometer, 10mL, with Thermometer and Cap

K0C135-25 Pycnometer, 25mL, with Thermometer and Cap

K0C135-50 Pycnometer, 50mL, with Thermometer and Cap

K0C135-100 Pycnometer, 100mL, with Thermometer and Cap

## **D215 Determination of Carbon Dioxide and Sulfur Dioxide in Carbonates**

KOD215 Alkalimeter, Knorr, 250mL Flask, S/T 24/40 and S/T 16

## **D297 Direct Determination of Isoprene Polymer Using Heating Mantles.**

KOD297 Rubber Distillation System consisting of 500mL Steam Generating Flask, 100mL Digestion Flask, Claisen Head, Spray Bulb, Condensing Adapter, two 500mL Receiving Flasks, and Condenser (supplied **without heat mantles**)

## **D301 Determination of Consistency of Soluble Nitrocellulose by Falling Ball Method**

KOD301 Falling Ball Viscosity Tube, 1" x 14", graduated 10" apart, with 5 Steel Balls, .312" OD

## **D322 Determination of Dilution in Crankcase Oil**

KOD322-5 Distillation Receiver, S/T 24/40, graduated 5mL in 0.1mL divisions

KOD322-12 Distillation Receiver, S/T 24/40, graduated 12.5mL x 0.1 divisions

## **D369 Determination of Specific Gravity**

KOD369-1 Specific Gravity Bottle, Gas-Lussac, 1mL, Unadjusted

KOD369-2 Specific Gravity Bottle, Gas-Lussac, 2mL, Unadjusted

KOD369-5 Specific Gravity Bottle, Gas-Lussac, 5mL, Unadjusted

KOD369-10 Specific Gravity Bottle, Gas-Lussac, 10mL, Unadjusted

## **D402 Distillation of Cut-Back Asphaltic (Bituminous) Products**

KOD402-F Flask, Distillation, 500mL, Side arm 13x220mm

KOD402-C Condenser, Liebig, Plain, 300mm

KOD402-A Adapter, Glass, 105 Degree, 18mm ID x 5mm ID

## **D422 Soil Testing Hydrometer Cylinders**

KOD422-1000 Hydrometer Cylinder, 1000mL TC, 460mm tall

KOD422-1205 Hydrometer Cylinder, graduated 1130 and 1205mL, 460mm tall

## **D453 Determination of Tar Acid**

KOD453 Separatory Funnel, Tar Acid, S/T 19 Stopper, 2mm Stopcock, Graduated Stem between Bulbs, 65 to 100mL in 0.2mL divisions

## **D555 Iodine Determination**

K00D29-125 Iodine Flask, 125mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-250 Iodine Flask, 250mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-300 Iodine Flask, 300mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-500 Iodine Flask, 500mL, S/T 24/40 Mercury Seal w/Hollow Stopper

K00D29-1000 Iodine Flask, 100mL, S/T 24/40 Mercury Seal w/Hollow Stopper

## **D565 Carbonizable Substances in White Mineral Oil**

KOD565 Test Tube, Ground Stopper, 15x140, graduated 5 and 10mL

## **D612 Carbonizable Substances in Paraffin Wax**

KOD565 Test Tube, Ground Stopper, 15x140, graduated 5 and 10mL

## **D789 Determination of Relative Viscosity of Polymer Solution in Formic Acid Solution**

KOD789 Viscometry Apparatus, consisting of 25mL Pipette, 50mL Flask with S/T 19/22 joints, and Pipette Adapter

## GLASS APPARATUS FOR ASTM TEST METHODS

### D848 Acid Wash Color of Industrial Aromatic Hydrocarbons

KOD848-A	Sample Bottle, 1 ounce capacity, flat bottom, square, glass stoppered and graduated at 7mL and 28mL
KOD848-B	Individual Color Standard Bottle, 1 ounce capacity, flat bottom, square, glass stoppered, with a Specified number (0-14)
KOD848-C	Set of Fifteen (15) Color Standard Bottles numbered 0-14, empty
KOD848-D	Individual Color Standard Bottle, filled with specific number solution
KOD848-E	Set of Fifteen(15) Color Standard bottles (0-14) filled
KOD848-F	Color Standard Set with Case, lighted white plexiglass, full set of color standards sealed in bottles, and two sample bottles

### D854 Determination of Specific Gravity

KOD369-1	Specific Gravity Bottle, Gas-Lussac, 1mL, Unadjusted
KOD369-2	Specific Gravity Bottle, Gas-Lussac, 2mL, Unadjusted
KOD369-5	Specific Gravity Bottle, Gas-Lussac, 5mL, Unadjusted
KOD369-10	Specific Gravity Bottle, Gas-Lussac, 10mL, Unadjusted

### D888 Determination of Dissolved Oxygen in Water

KOD888	Gas Collecting Tube, McLean type, 500mL, 3mm Stopcocks, graduated 2mL on Tube Ends
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### D889 Determination of Volatile Oil in Rosin

KOD889	Distillation Receiver, 5mL in 0.1mL divisions, S/T 24/40
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### D891 Determination of Specific Gravity of Liquid Chemicals, Halogenated Organic Solvents, Ethylene Glycols, Propylene Glycols

KOD891-25	Specific Gravity Bottle for Volatile Liquids, 25mL, Jacketed
KOD891-50	Specific Gravity Bottle for Volatile Liquids, 50mL, Jacketed

### D914 Testing Ethylcellulose and Methylcellulose

KOD914	Apparatus for Testing Ethylcellulose
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### D941 Density and Relative Density (Specific Gravity) of Liquids by Lipkin Bicapillary Pycnometer

KOD941	Pycnometer, side-arm type, 4.5 ±0.5mL, Weight less than 30g
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### D1015 Freezing Points of High Purity Hydrocarbons

KD1015-FT	Freezing Point Tube, Glass, with Hi-Vac Stopcock
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### D1016 Purity of Hydrocarbons from Freezing Points

KD1015-AS	Apparatus for Obtaining Sample, consisting of Dewar Flask, 50mL Condensing Tube, 3-way Stopcock, and Connecting Tubes 10mm OD with S/J 18/7 Ball and Socket Joints
KD1015-NG	Distilling Apparatus for Gaseous Substances, consisting of two Dewar Flasks, Distilling Tube, and Receiver
KD1015-NL	Distilling Apparatus for Normally Liquid Substances, consisting of Dewar Flask, Receiver, and 200mL Flask with Cap

### D1018 Hydrogen in Petroleum Fractions

KD1018-A	Absorber Only, Turner Type
KD1018-B	Lamp Burner, S/T 14/20 Joints, Concentric Tubes
KD1018-CH	Hydrogen Determination Chimney

KD1018-D-1	Erlenmeyer Flask, 14/10 S/T Outer Joint, 25mL
KD1018-D-2	Standard Burner, 14/10 S/T Inner Joints
KD1018-D-3	Chimney for Lamp Hydrogen Apparatus
KD1018-E	Absorption Bulbs
KD1018-F	Drierite U-Tube

### D1065 Determination of Unsaponifiable Matter In Gum and Wood Rosin

KD1065	Extraction Apparatus, Ether, S/T 24/40, 400mm Condenser, 250mL Flask
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### D1072 Total Sulfur in Fuel Gases

KD1072-B	Burner, S/T 14/10 Joint, Gas
KD1266-C	Chimney, S/T 14/10 and S/T 24/40 Joints
KD1266-A	Absorber, S/T 24/40 Joints, Parallel Chambers, AU Shape
KD1266-ST	Spray Trap, S/T 24/40 Joint, 65mm OD

### D1091 Phosphorus Lubricating Oils s in And Additives

KD1091	Flask, Kjeldahl, Digestion, 300mL, with Ground Glass Stopper
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### D1093 Centrifuge Tube, 100mL

K00D96-8	Centrifuge Tube, Conical, A8-Inch (203mm), 100mL
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### D1120 Determination of Equilibrium Boiling Point of Engine Antifreezes Miscible With Water

KD1120	Distillation Apparatus, 100mL Flask, 200mm Condenser, S/T 19/38
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### D1168 Testing Hydrocarbon Waxes for Electrical Insulation

KD1168	Dilatometer, 0-2mL in 0.02mL divisions, S/T 14/20 Joint, 2mm Stopcock
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### D1173 Test For Foaming Properties of Surface-Active Agents

KD1173	Pour Foam Test Apparatus, Ross-Miles, 200mL Pipette, Receiver graduated at 50mL and 250mL, Teflon Stopcocks, 2mm and 6mm Bore, Jacketed
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### D1217 Density and Relative Density of Liquids By Bingham Pycnometer

KD1217-P	Pycnometer, Bingham type, Stoppered, 25mL 1.0 - 1.1mm neck
KD1217-PC	Pycnometer Cleaning Apparatus, Hot Chromic Acid, consisting of 3-way Stopcock with Joint Inside Chamber

### D1266 Sulfur in Petroleum Products (Lamp)

KD1266-A	Absorber, S/T 24/40 Joints, Parallel Chambers, AU shape
KD1266-C	Chimney, S/T 14/10 and S/T 24/40 Joints
KD1266-ST	Spray Trap, S/T 24/40 Joint, 65mm OD
KD1266-SF	Standard Flask, 25mL, S/T 14/10 Joint, with Hooks
KD1266-FA	Flask for Aromatic Samples with Side Arm
KD1266-SB	Standard Burner, S/T 14/10 Joints
KD1266-BA	Burner for Aromatic Samples

### D1347 Standard Method of Testing Methylcellulose

KD914	Apparatus for Testing Ethylcellulose
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### D1394 Jones-Blair Reductor

KD1394	Column, Jones-Blair Reductor, 19mm ID x 450mm Long, 4mm stpk
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## GLASS APPARATUS FOR ASTM TEST METHODS

### D1480 Density and Relative Density of Viscous Materials by Bingham Pycnometer

KD1480 Pycnometer, Bingham Type, Stoppered, 2mm ID neck, 10mL

### D1481 Density and Relative Density of Viscous Materials by Lipkin Bicapillary Pycnometer

KD1481 Pycnometer, Side-Arm Type, Weight less than 35 grams, 10mL

### D1505 Density Gradient Determination

KD1505-C Density Gradient Column, Jacketed, 38mm ID x 44" long

KD1505-F Density Float (specify exact density and color identification)

### D1541 Iodine Flasks

K00D29-125 Iodine Flask, 125mL, S/T 24/40 Mercury Seal  
w/Hollow Stopper

K00D29-250 Iodine Flask, 250mL, S/T 24/40 Mercury Seal  
w/Hollow Stopper

K00D29-300 Iodine Flask, 300mL, S/T 24/40 Mercury Seal  
w/Hollow Stopper

K00D29-500 Iodine Flask, 500mL, S/T 24/40 Mercury Seal  
w/Hollow Stopper

K00D29-1000 Iodine Flask, 1000mL, S/T 24/40 Mercury Seal  
w/Hollow Stopper

### D1607 Sampling Nitrogen Dioxide in Small Concentrations

KD1607 Gas Bubbler Apparatus, S/T 29/42, S/J 18/7, Coarse Pencil Frit

### D1638 Specific Gravity of Pigments, Drying Oils, Varnishes, Resins, etc.

KOC135-10 Pycnometer, 10mL, with Thermometer and Cap

KOC135-25 Pycnometer, 25mL, with Thermometer and Cap

KOC135-50 Pycnometer, 50mL, with Thermometer and Cap

KOC135-100 Pycnometer, 100mL, with Thermometer and Cap

### D1839 Amyl Nitrate in Diesel Fuels

KD1839-F Flask, Distilling, 300mL, S/T 24/40 Joint

KD1839-DC Distillate Collector, S/T 24/40 Joints

KD1839-C Condenser, Allihn, 300mm, S/T 24/40 Joint

KD1839-VF Volumetric Flask, 100mL, Stoppered

KD1839-FF Funnel for Volumetric Flask

### D1949 Separation of Tetraethyllead and Tetramethyllead in Gasoline

KD1949-F Flask, 200mL, S/T 24/40 Joint

KD1949-DC Distilling Column, 12mm IDx300, Vacuum Jacketed (w/o Beads)

KD1949-C Condenser, Liebig type, S/T 10/30 Top Joint, 100mm

### D1963 Specific Gravity of Pigments, Drying Oils, Varnishes, Resins, etc.

KOC135-10 Pycnometer, 10mL, with Thermometer and Cap

KOC135-25 Pycnometer, 25mL, with Thermometer and Cap

KOC135-50 Pycnometer, 50mL, with Thermometer and Cap

KOC135-100 Pycnometer, 100mL, with Thermometer and Cap

### D1966 Determination of Water and Sediment By Centrifuge Method

KD1966 Centrifuge Tube, Pear-Shape, 100mL  
with Lower Stem Graduated to 1.5mL in 0.1mL divisions

### D2001 Depentanization of Gasoline and Naphthas

KD2001-A Distillation Column, Jacketed, 13mm ID

KD2001-B Reflux Condenser Head for Distillation Column

KD2001-C Trap for Light End Depentanization

KD2001-D Receiver, Graduated, 12.5mL, S/T 19/38 Male Joint

KD2001-E Dewar Flask, for Immersion of Receiver

KD2001-F Flask, Distilling, 100mL, R.B., S/T 24/40 Joint

### D2002 Isolation of Representative Saturates Fractions from Low-Olefinic Petroleum Naphthas

KD2002-C-1 Alternate Analytical Absorption Column, w/top adapter

KD2002-C Absorption Column, Analytical, Water Jacketed

KD2002-ER Eluant Reservoir, 250mL, S/J 28/15 Joints with Stopper

KD2002-R Receiver, 10mL with TFE Stopcock and S/T 14/35 Joint

### D2003 Isolation of Representative Saturates

#### Fraction from High-Olefinic Petroleum Naphthas

KD2003-AC Absorption Column, Water Jacketed, S/J 28/15  
and S/T 14/35 Joints

KD2003-R Receiver, Graduated, 10mL, S/T 14/35 Joint, TFE Stopcock

### D2007 Characteristic Groups in Rubber Extender and Processing Oils and other Petroleum-Derived Oils by the Clay-Gel Absorption Chromatographic Method

KD2007-C Clay-Gel Percolating Column (2 required), S/T 24/40,  
Fritted Disc

KD2007-F Distillation Flask, 3-neck, 500mL, S/T 24/40 Joint,  
for Extraction

KD2007-H Distillation Head with Vigreux Column, S/T 24/40,  
TFE Stopcock

KD2007-CT Connecting Tube from Flask to Column, S/T 24/40  
*(If ordered with Flask, Head, and Column, Tube can be  
supplied custom fitted. Otherwise user must heat glass tube  
to soften and align and conform to fit properly, or install a  
flexible connection device such as teflon bellows or slip-fit  
teflon tubing sleeve).*

KD2007-RC Reflux Condenser, S/T 24/40, Friedrichs

KD2007-B Beaker, Anticreep, 150mL

KD2007-APC Azobenzene Percolation Column, 12x600mm, 125mL Reservoir

KD2007-MV Teflon Metering Stopcock for Azobenzene Percolation Column

### D2036 Determination of Cyanides in Water

KD2036 Complete Distillation Apparatus, consisting of 1000mL  
2-neck Flask, Cold Finger Condenser, Absorber Trap, Inlet Tube

### D2111 Determination of Specific Gravity of Liquid Chemicals, Halogenated Organic Solvents Ethylene Glycols and Propylene Glycols

KOD891-25 Specific Gravity Bottle for Volatile Liquids, 25mL, Jacketed

KOD891-50 Specific Gravity Bottle for Volatile Liquids, 50mL, Jacketed

### D2162 Basic Calibration of Master Viscometers And Viscosity Oil Standards

KD2162-C1 Cannon Master Viscometer,  
Approximately 0.001-0.003cSt/s

KD2162-C3 Cannon Master Viscometer,  
Approximately 0.003-0.009cSt/s

KD2162-U1 Ubbelohde Master Viscometer,  
Approximately 0.001-0.003cSt/s

KD2162-U3 Ubbelohde Master Viscometer,  
Approximately 0.003-0.009cSt/s

## GLASS APPARATUS FOR ASTM TEST METHODS

### D2184 Determination of Isotopic Concentration of Heavy Water.

KD2184-P Pycnometer, 25mL, S/T 7/15 Stopper  
KD2184-MS2 Matched Set of two Pycnometers

### D2352 Determination of Carbon Dioxide and Sulfur Dioxide in Carbonates

KD215 Alkalimeter, Knorr, 250mL Flask, S/T 24/40 and S/T 16

### D2363 Testing of Hydroxypropyl Methylcellulose

KD2363 Complete apparatus for Steam Distillation including Steam Boiler Tube with Inlet Adapter, 25mL Boiling Flask with Side Neck, Vigreux Column, 110mm long Liebig Type Condenser, and Vertical Adapter for delivery (S/T 14/20 Joints) (boiler has S/T 24/40 joints)

### D2385 Hydrogen Sulfide and Mercaptan Sulfur In Natural Gas (Cadmium Sulfate Iodometric Titration Method)

KD2385-GWB Gas Washing Bottle, 70x280mm, Coarse Fritted Disc, S/T 24/40  
KD2385-ST Spray Trap, S/T 24/40 Joint, 65mm OD Bulb

### D2420 Hydrogen Sulfide in LP Gases by Lead Acetate Method

KD2420 Apparatus including Cylinder, Stoppers, Watch Glass and Glass Rod

### D2533 Vapor-Liquid Ratio of Spark-Ignition Engine Fuels

KD2533 Buret, Vapor-Liquid Ratio, Graduated 0 - 35mL

### D2549 Separation of Representative Aromatics and Nonaromatics Fractions of High-Boiling Oils by Elution Chromatography

KD2549-C2 Chromatographic Column, 10x760mm, 100mL bulb, for 2 gram  
KD2549-C10 Chromatographic Column, 15x1150mm, 200mL bulb, for 10 gram

### D2569 Distillation of Pitch

KD2569-F Flask, Distillation, 300mLx131mm tall w/side arm 10x220mm  
KD2569-F Condenser, Air, 13x360mm

### D2619 Hydrolytic Stability of Hydraulic Fluids (Beverage Bottle Method)

K00D96-8 Centrifuge Tube, Conical, A8-Inch (203mm), 100mL

### D2717 Thermal Conductivity of Liquids

KD2717 Thermal Conductivity Cell, Platinum Resistance Thermometer

### D2748 Determination of Pyridine Bases in Acids

KD2748 Distillation Apparatus Consisting of 1000mL Boiling Flask, Bulb Trap Adapter, Connection Adapter, 600mm Liebig Type Condenser, and Lower Drip Adapter, S/T 24/40 Joints

### D2780 Solubility of Fixed Gases in Liquids

KD2780-PS Ambient Pressure Saturator, Glass, 1000mL, S/T 27 Joint, PTFE Stopcock w/O-Rings, Upper Head for Gas Inlet, Outlet and Dispersion Element, and Heating Mantel and Thermocouple wire x 6 ft long  
KD2780-ES Gas Extraction System consisting of KD2780-ES1 through KD2780-ES7  
KD2780-ES1 Reflux Condenser, Liebig, S/T 24/40, 300mm  
KD2780-ES2 Gas Extraction Chamber, 60 x 280mm, S/J 12/2 Joints  
KD2780-ES3 Boiler Flask, 500mL, Round Bottom, S/J 35/25 Socket Joint, with Adapter, 35/25 x 12/2 S/J Joint  
KD2780-ES4 Gas Buret, Water Jacketed, 100mL, with 3-Way, TEE Bore Stopcock and S/J 12/2 Joint  
KD2780-ES5 Leveling Bulb, 500mL  
KD2780-ES6 Connecting Manifold with 3 - TFE 120 Degree Stopcocks  
KD2780-ES7 Manometer, Open End, 1-Meter, S/J 12/2 Connection

### D2879 Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope

KD2879 Isoteniscope Pressure Manometer, 8mm Od x 500mm w/bulb

### D2886 Vacuum Trap

KD2886 Vacuum Trap, 22x125mm, Inlet & Outlet Arms 10mm OD

### D2892 Distillation of Crude Petroleum (15- Theoretical Plate Column)

Quotations submitted on request. Specify Type, Scale, and Sizes of Components Required.

### D2910 Extraction Apparatus

KD2910 Complete Extraction Apparatus consisting of 3000 mL Solvent Flask, Extractor Body with Extraction Chamber, Siphon Tube, Removable Filter and Top Lid, and Allihn Condenser 250mm. Joints are S/T 45/50

### D2912 Oxidant Content of Atmosphere

KD2912 Impinger, Midget, S/T 24/40, 25mm Body, 5mm Inlet, 1mm Nozzle, Body Graduated 0-25mL in 5mL Divisions

### D2913 Mercaptan Content of Atmosphere

KD2913 Impinger, Midget, S/T 24/40, 25mm Body Graduated to 25mL in 5mL Divisions, 5mm ID inlet, Coarse Fritted Pencil at Tip

### D2914 Oxidant Content of Atmosphere

KD2912 Impinger, Midget, S/T 24/40, 25mm Body, 5mm Inlet, 1mm Nozzle, Body Graduated 0-25mL in 5mL Divisions

### D2972 Determination of Arsenic in Water

KD2972 Arsenic Determination Apparatus consisting of 125mL Erlenmeyer Flask, Scrubber Tube, and Absorber Tube, S/T 24/40 and S/J 12/2

### D3120 Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry

KD3120 Pyrolysis Tube, Quartz, S/J 18/9 Ball exit, 6mm Inlets, Septum

### D3234 Abrasion Resistance of Petroleum Wax Coatings

KD3234-T Glass Tube, 1" ID x 12" Long, with Support Device for #12 Sieve  
KD3234-S Screen Sieve, Size #12, cut 1" Diameter  
KD3234-F Separatory Funnel, 500mL, 4mm TFE Stopcock, Stem Cut Short

## GLASS APPARATUS FOR ASTM TEST METHODS

### D3242 Acidity in Aviation Turbine Fuel

KD3242 Titration Flask, 500mL, Erlenmeyer Shape, with Inlet Tube

### D3246 Sulfur in Petroleum Gas By Oxidative Microcoulometry

KD3120 Pyrolysis Tube, Quartz, S/J 18/9 Ball exit, 6mm Inlets, Septum

### D3431 Trace Nitrogen in Liquid Petroleum Hydrocarbons (Microcoulometric Method)

KD3120 Pyrolysis Tube, Quartz, S/J 18/9 Ball exit, 6mm Inlets, Septum

### D3505 Density of Liquid Hydrocarbon Materials

KOD941 Pycnometer, Side Arm Type, 4.5 ±0.5mL, Weight less than 30g

### D3608 Sampling Low Concentrations of Nitrogen Dioxide

KD1607 Gas Bubbler Apparatus, S/T 29/42, S/J 18/7, Coarse Pencil Fit

### D3712 Analysis of Oil-Soluble Petroleum Sulfonates by Liquid Chromatography

KD3712-C Chromatographic Column, 22 x 300mm w/250mL Reservoir, 28/15

KD3712-P Pycnometer for Determining Specific Gravity, 50mL ±1.0mL

### D3825 Dynamic Surface Tension by the Fast-Bubble Technique

KD3825 Glass Bubbler Unit, Jacketed, without Pressure Transducer

### D3831 Manganese in Gasoline by Atomic Absorption Spectrometry

KD3831 Automatic Pipette, 9.0mL, with Auto-zero and TFE Stopcock

### D3867 Test for Nitrite-Nitrate in Water

KD3867 Cadmium Reduction Column, 5x200mm, 85mL Reservoir

### D3904 Oil from Oil Shale (Resource Evaluation by the USBM Fischer Assay Procedure)

KD3904-R Receiver, 100mL Centrifuge Tube, Pear Shape

KD3904-A Adapter, S/T 24/40, to Receive Product from Retort

KD3904-C Condenser, Allihn, 300mm, S/T 24/40

### D3907 Testing Fluid Cracking Catalysts by Microactivity Test

KD3907-R Glass Reactor body, 18mmx376mm, S/T 28/15 and 12/5 O-ring Joints

KD3907-PR Product Receiver, Liquid, S/T 12/5 O-ring Joints

### D3908 Hydrogen Chemisorption on Supported Platinum on Alumina Catalysts by Volumetric Vacuum Method.

KD3908 Sample Cell, S/T 10/30 Joints, 2mm Vacuum Stopcocks

### D3945 Shear Stability of Polymer-Containing Fluids Using a Diesel Injector Nozzle

KD3945-CV Cooling Vessel, Jacketed, 25mm IDx180mm long, TFE Stopcock

KD3945-FR Fluid Reservoir, 250mL, w/Distributor Plate and 3-way Stopcock

### D4006 Water in Crude Oil by Distillation

KD4006-A Distillation Trap, 5mL in 0.05

KD4006-B Drying tube for Distillation Apparatus

KD4006-C Condenser, 400mm, Liebig, S/T 24/40

KD4006-F Flask, 1000mL, S/T 24/40, Round Bottom

### D4180 Vibratory Packing Density of Formed Catalyst Carriers

KD4180 Feed Funnel, 100mm x 20mm ID

### D4484 Inorganic Particles in Marine Residual Fuel Oils by Selective Centrifugal Separation

KD2709 Centrifuge Tube, Conical, 100mL, Tip Graduated to .05mL in .01 Divisions

### D4486 Kinematic Viscosity of Volatile and Reactive Liquids

KD4486 Viscometer for Vulnerable Liquids (specify approximate constant)

### D4512 Vibrated Apparent Packing Density of Fine Catalyst Particles and Powder

KD4180 Feed Funnel, 100mm x 20mm ID

### D4629 Organically Bound Trace Nitrogen in Liquid Petroleum Hydrocarbons by Oxidative Combustion and Chemiluminescence Detection

KD4629 Pyrolysis Tube, Quartz, S/J 18/9 Ball outlet, 6mm Inlets, Septum

### D4814 Automotive Spark-Ignition Engine Fuel

KD2533 Buret, Vapor-Liquid Ratio, Graduated, 0-35mL

### D4871 Guide for Universal Oxidation/Thermal Stability Test Apparatus

KD4871-TC Test Cell, 38 x 300mm, S/T 34/45 Joint

KD4871-C Condenser, Allihn, 330mm, S/T 34/45 Joint, Top 9mm ID

KD4871-G11 Gas Inlet Tube, 8x850mm with Capillary Tip (no Support Ring)

KD4871-G11A Alternate Gas Inlet Tube, 8x850mm with Capillary Tip but w/Support Ring

KD4871-G12 Gas Inlet Tube, 8x455mm, Capillary Tip, Top Bent 90 Degrees

KD4871-BH Basic Head, S/T 34/45 Joint, Septum Port, Screw Cap Joint

KD4871-1H Intermediate Head, S/T 34/45, 170mm long, Septum Port

KD4871-SH Sampling Head, S/T 34/45 x 175mm long, Septum Port

KD4871-SR Support Ring, 9.5mm IDx12.7mm ODx7mm long with 4 Hooks

KD4871-SP Spacer Ring, 9.5 mm ID x 12.7mm OD x 7mm Long

# STANDARDIZED METAL TEST SPECIMENS

For those specimens not previously mentioned in this catalog, following is a list, by test method, of available standardized metal test specimens. Please contact Koehler Customer Service for additional information.

## Test Method No.

### Federal Test Methods

791-2503	791-5309
791-2504	791-5310
791-3007	791-5311
791-3462	791-5312
791-3805	791-5314
791-3810	791-5315
791-3814	791-5321
791-4001	791-5322
791-4011	791-5323
791-5304	791-5324
791-5305	791-5325
791-5306	791-5329
791-5307	791-5331
791-5308	791-6503
	791-7001

### ASTM Methods

D115	D2619
D609	D2688
D849	D2783
D897	D2847
D1261	D3810
D1275	D4635
D1384	D4871
D1402	E8
D2266	F483
D2511	F484
D2570	F519
D2596	

### Military Standards (MIL)

MIL-A-7866	MIL-L-7808
MIL-A-8243	MIL-L-7870
MIL-B-81705	MIL-L-8937
MIL-C-6529	MIL-L-23398
MIL-C-11796	MIL-L-23699
MIL-C-15074	MIL-L-23699B
MIL-C-19853A	MIL-L-25017C
MIL-C-16173	MIL-L-46000
MIL-C-22230	MIL-L-46010
MIL-C-23411	MIL-L-B1329
MIL-C-25769H	MIL-R-81294
MIL-C-46113	MIL-R-25143A
MIL-C-81309A	MIL-S-8660
MIL-L-6085	