

物理・物性値 標準物質総合カタログ

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価格についてはオープン価格で行っておりますので、お手数でもお問合せ下さい。

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熱分析

Enthalpy / Heat capacity
指差熱/エンタルピー/熱容量

Cat.No.	品名	容量	Melting Temperature	Enthalpy of Fusion
LGC2601	Indium	0.5g	156.61°C	3.296 KJ/mol
SRM2232	Indium	1g	156.5985°C	28.51 J/g
LGC2603	Naphthalene	0.5g	80.23°C	18.923 KJ/mol
LGC2604	Benzil	0.5g	94.85°C	23.26 KJ/mol
LGC2605	Acetanilide	0.5g	114.34°C	21.793 KJ/mol
LGC2606	Benzoic acid	0.5g	122.35°C	17.98 KJ/mol
LGC2607	Diphenylacetic acid	0.5g	147.19°C	31.16 KJ/mol
LGC2608	Lead	0.5g	327.47°C	4.765 KJ/mol
LGC2609	Tin	0.5g	231.92°C	7.187 KJ/mol
LGC2610	Biphenyl	0.5g	68.93°C	18.60 KJ/mol
SRM2234	Gallium-DSC enthalpy	1.5g	302.9146 °C	80.097 KJ/g
SRM2235	Bismuth-DSC enthalpy	1.5g	544.556 K	53.146 J/g
LGC2611	Zinc	0.5g	419.53°C	7.103 KJ/mol
LGC2612	Aluminium	0.5g	660.33°C	10.827 KJ/mol
LGC2613	Phenyl salyciate	0.5g	41.79°C	19.18 KJ/mol
NMIJ5806-a	単結晶シリコン	5Φx1mm	使用温度範囲	50~350 K
SRM2225	Mercury-DSC enthalpy	2.5g	234.30°C	11.469 KJ/mol
SRM705a	Polystyrene 熱容量/分子量	5g		
	Mn : menbrance osmometry	170,900 g/mol	LV in benzene(25°C)	74.3mL/g
	Mw : light scattering	179,300 g/mol	LV in benzene(35°C)	74.5mL/g
	Mw : sedimentation equilibrium	189,800 g/mol	LV in cyclohexane(35°C)	35.4mL/g
SRM720	Synthetic Sapphire-Enthalpy and Heat Capacity	15g	Enthalpy and Heat Capacity	10~2250 K
SRM781D2	Molybdenum-Enthalpy and Heat Capacity	each	Enthalpy and Heat Capacity	273.15~2800K
SRM1514	Thermal Analysis Purity Set	Set of 4 vials: 0.5 g each		

シクロヘキサン	NMIJ CRM5401-a	1.5mL
固相間相移転温度		186.18K
融点		279.86K
固相間相移転エンタルピー		80.2J/g
融解エンタルピー		31.9J/g

Freezing Point

Cat.No.	品名	容量	Freezing Point °C
SRM1744	Aluminium	200g	660.323
SRM1745	Indium	200g	156.5985
SRM1746	Silver	300g	961.78
SRM1747	Tin	300g	231.928
SRM1748	Zinc	1 cell	419.527
SRM740a	Zinc	200g	419.527
SRM45d	Copper	450g	1084.8
SRM49e	Lead	600g	327.453

Flash Point

Cat.No.	品名	容量 (mL)	Flash Point °C
ERML-FC031a	p-Xylene	100	27
ERML-FC032a	n-Nonane	100	32.5
ERML-FC033a	n-Decane	100	50
LGC2000	Diethyl phthalate	500	159.0

Melting Point

Cat.No.	品名	容量	Melting Point °C
ERM-FC030a	Phenyl salicylate	0.25g	41.82
ERM-FC029a	4-Nitrotoluene	2g	51.66
ERM-FC028a	Naphthalene	0.5g	80.34
NCS AS93102b	Naphthalene	2g	80.08
ERM-FC027	Benzil	0.25g	94.90
ERM-FC026a	Acetanilide	0.25g	114.19
ERM-FC025a	Benzoic acid	0.25g	122.36
ERM-FC024a	Diphenylacetic acid	0.25g	147.26
NCS AS93104b	1,6-Adipic acid	2g	151.62
ERM-FC023a	Anisic acid	0.25g	183.50
NCS AS93105b	Anisic acid	2g	183.28
ERM-FC022a	2-Chloroanthraquinone	0.25g	209.73
NCS AS93106b	Anthracene	2g	215.88
NCS AS93107b	p-Nitrobenzoic acid	2g	239.58
ERM-FC21a	Carbazole	0.5g	245.41
LGC2410	Anthraquinone	0.25g	284.48
NCS AS93108b	Anthraquinone	2g	284.55
SRM743	Mercury	680g	-38.8344
SRM742	Alunina	10g	2052
SRM1751	Gallium	200g	29.7646
SRM1969	Rubidium=Melting, Triple point	unit	39.30
SRM1970	Succinonitrile=Melting, Triple point	unit	58.0642
SRM1971	Indium=Melting, Triple point	each	156.598
SRM1968	Gallium=Melting, Triple point	200g	29.7646
SRM1972	1,3-Dioxolan-2-one(ethylene carbonate)=Melting, Triple point	60g	36.3143

Combustion Calorimetry (powder form) / 燃焼熱量

These SRMs are for use as standards for calibration of combustion bomb calorimeters used in checking the performance of apparatus and analytical procedures and for the characterization of high purity compounds, fuels, and related fuel materials.

Cat.No.	品名	容量 (in g)	Heat of Combustion (in MJ/kg)*
SRMS39j	Benzoic acid	30	26.434
SRM1656	Thianthrene	30	33.480
SRM1657	Synthetic Refuse-Derived Fuel	100	13.87**
SRM2151	Nicotinic Acid	25	22.184
SRM2152	Urea	25	10.536
SRM2683c	S & Hg in Coal S=1.955%, Hg=90.0 μg/g	50	(30.24)
SRM1656	Synthetic Refuse - Derived Fuel	100	13.87
SRM2682b	Sulfur and Mercury in Coal, Sub-Bituminous: %S = 0.4917; mercury 108.8 μg/Kg % Ash =		在庫切れ
SRM2684b	Sulfur and Mercury in Coal, Bituminous: % S = 3.06; Mercury = 97.4 μg/kg; % Ash = 11.0		在庫切れ
SRM2685b	Sulfur and Mercury in Coal, Bituminous: % S = 4.730; Mercury 146.2 μg/Kg % Ash = 15.94		在庫切れ
SRM2692b	Sulfur and Mercury in Coal, Bituminous: % S = 1.170; Mercury 133.3 μg/Kg % Ash = 7.94		在庫切れ

*The calorific values (MJ/kg) may decrease upon the aging or normal oxidation of the coals. NIST will continue to monitor these calorific values and report any substantive change to the purchaser.

**Gross calorific value or HHV (Higher Heating Value).

Solution Calorimetry

Cat.No.	品名	容量 (in g)	Heat of Solution (in MJ/kg)
SRM1655	Potassium Chloride (Water Solution Calorimetry)	30	Absorbed (0.235)

Thermal Conductivity of Graphite and Iron (rod form)

熱伝導:黒鉛・鉄

Cat.No.	品名	サイズ(cm)	Conductivity	Temperature Range
RM 8420	Electrolytic Iron	0.64D × 5.0	77.9Wm ⁻¹ k ⁻¹ at 293 K	2 to 1000 (K)
NMIJ RM1401-a	等方性黒鉛	形状1: 10Φ × 1.0mm 形状2: 10Φ × 2.0mm		300K-900K
BCR039C	Pyrex glass (the function to calculate λ for temperature between -75 and 195°C is given in the CoA)	30 × 30 × 50	Thermal conductivity at 23 °C 1.143 8 (W/mK) (± 1.7 %)	Density(kg/m ³) 2222 - 2226
IRMM440A	Resin bonded fiber board	30 × 30 × 3.5	0.0293949+(0.0001060 · T)+(2.047 × 10 ⁻⁷ · T ²) W/mk	-10 and 50 °C
IRMM440B	Resin bonded fiber board	50 × 50 × 3.5		
IRMM440C	Resin bonded fiber board	60 × 60 × 3.5		
IRMM440D	Resin bonded fiber board	100 × 100 × 3.5		

ガラス・セラミクス

GLASS-CERAMIC BCR724	
Thermal Diffusivity, α	
Certified value 1)	Uncertainty 2)
[m ² /s · 10 ⁻⁶]	[%]
$\alpha = 4.406 - 1.351 \cdot 10^{-2} \cdot T + 2.133 \cdot 10^{-5} \cdot T^2 - 1.541 \cdot 10^{-8} \cdot T^3 + 4.147 \cdot 10^{-12} T^4$	6.1
Thermal Conductivity, λ	
Certified value 1)	Uncertainty 2)
[W/(m·K)]	[%]
$\lambda = 2.332 + 515.1 / T$	6.5

Thermal Expansion of Metal, Glass (rod form)

熱膨張(金属・シリコン・ガラス)

Cat.No.	品名	Temperature Range	サイズ(cm)
SRM731L1	Borosilicate Glass - Thermal Expansion	80 to 680(K)	0.64 × 5.1
SRM731L2	Borosilicate Glass - Thermal Expansion	80 to 680(K)	0.64 × 10.2
SRM731L3	Borosilicate Glass - Thermal Expansion	80 to 680(K)	0.64 × 15.2
SRM738	Stainless Steel (AISI 446)	293 to 780(K)	0.64 × 5.1
NMIJ1101-a	単結晶シリコン	293.154から1000K	4.5x4.5x60、9x9x60(mm)
NMIJ1102-a	ガラス状炭素	293.154から1100K	6x6x160、6x6x20(mm)
NMIJ5803-a	単結晶シリコン 低温用	使用温度範囲: 20k-300k	形状1: 10x10x30mm 形状1: 10x10x60mm
NMIJ1103-a	単結晶シリコン	20から300K	10x10x30、10x10x60(mm)
NMIJ1104-a	ガラス状炭素	293.5K から 300K	10 × 6 × 6 (mm)

熱拡散(黒鉛)

Cat.No.	品名	Temperature Range	サイズ(mm)
NMIJ5804-a	等方性黒鉛	300から1500K	φ 10: 1.4, 2.0, 2.8, 4.0

薄膜の熱拡散時間

Cat.No.	品名	仕様	参考値
NMIJ RM1301-a	窒化チタン薄膜	薄膜部分: 9.5mmx9.5mmx680nm(窒化チタン) 基盤部分: 10mmx10mmx0.52mm(合成石英ガラス)	139.7 × 10 ⁻⁹ s

縦波音速

Cat.No.	品名	Temperature Range	サイズ(mm)
NMIJ	ノンドープ単結晶シリコン	296から1273K	10 x 19 x 18

Thermal Resistance of Glass, Silica, and Polystyrene (solid forms)**熱抵抗(ガラス・シリカ・ポリスチレン)**

Cat.No.	品名	サイズ(cm)	Temperature Range	Thermal Resistance
SRM1449	Fumed Silica Board	60 × 60 × 2.54	297.1	1.2
SRM1450d	Fibrous Glass Board	61 × 61 × 2.54	280 to 340	
SRM1452	Fibrous Glass blanket for high precisor	60 × 60 × 2.54		
SRM1453	Expanded Polystyrene Board	66 × 93 × 1.34	285 to 310	0.4
SRM1459	Fumed Silica Board	30 × 30 × 2.54	297.1	1.2

Glass Liquidus Temperature (solid form)

This SRM is for checking test methods and for calibrating equipment used to determine the liquidus temperature of glass by the gradient furnace methods per ASTM C 829.

SRM	品名	容量	Method	Temperature (°C)
SRM773	Soda-Lime-Silica	2.5 × 2.5 × 0.6 (cm)	A (boat) B (perforated plate)	988 991
SRM1416	Aluminosilicate	22 lengths of 12.7 cm tube (250 g)		1147

Thermocouple Materials

For further information see SP 260-56, SP 260-134 and SP 260-139

Cat.No.	品名	容量	Temperature Range(°C)
SRM1967	Platinum Wire, High Purity (99.999 + %)	0.051D x 100 cm	-197 to 1767
SRM1749	Gold vs. Platinum Thermocouple Thermometer	1 each	0 to 1000
SRM1750	Standard Platinum Resistance Thermometer	1 each	13.8033 to 429.7485 K

ELECTRICAL PROPERTIES 電気特性**Electrical Resistivity and Conductivity of Silicon (block and wafer forms)**

SRMs 2526 and 2527 are sets of 16 silicon chips, each mounted on beveling blocks, intended to provide a number of resistivity scale reference points for calibrating spreading resistance measurements for the semiconductor industry. SRM 2526 is (111) p-type, SRM 2527 is (111) n-type. SRMs 2541 through 2547 consist of single wafers intended for use as reference standards for sheet resistance and resistivity measurements utilizing the four-point probe method. SRMs 2541, 2542, and 2543 are made of Czochralski-grown, boron-doped silicon with (100) crystallographic orientation; SRMs 2544, 2545, 2546, and 2547 are float zone (111) orientation and phosphorus-doped by the neutron transmutation doping process.

Cat.No.	品名	Resistivity ($\Omega \cdot \text{cm}$)	容量 (mm)
SRM2541	Silicon Resistivity	0.01	100D × 0.625
SRM2543	Silicon Resistivity	1	100D × 0.625
RM 8420	Electrolytic Iron	0.004 to 0.909	0.64D × 5.0

Electrical Properties of Glass (bar form)

SRM 624 is for checking test methods and for calibrating equipment used to determine the dc volume resistivity of glass per ASTM C 657. SRM 774 is for checking methods used to determine dielectric constant and ac loss characteristics of insulating materials per ASTM D 150.

Cat.No.	品名	Value	容量(cm)
SRM624	Lead-silicon - dc Resistivity	$\log_{10} \rho$ 11.07 $\Omega \cdot \text{cm}$ at 250° C $\log_{10} \rho$ 9.9 $\Omega \cdot \text{cm}$ at 300° C $\log_{10} \rho$ 8.88 $\Omega \cdot \text{cm}$ at 350° C	200g
SRM774	Lead-Silica, for dielectric	K ~ 7.47 at 100 Hz	5 × 5 × 2.5

Electrophoretic mobility

Cat.No.	品名	Certificate Value
SRM1980	Goethite(alpha-FeOOH)	2.53 $\mu\text{m cm/V s}$

Optoelectronics (solid forms)

電気光学

Cat.No.	品名	Certified Property
SRM2514	Wavelength Calibration Reference for 1560 nm to 1595 nm(Carbon Monoxide 12C16O)	41 lines in 3n band, in nm
SRM2515	Wavelength Calibration Reference for 1595 nm to 1630 nm(Carbon Monoxide 13C16O)	41 lines in 3n band, in nm
SRM2517a	Wavelength Reference Absorption Cell (Acetylene)	$\nu_1 + \nu_3$ band, in nm
SRM2518	Polarization Mode Dispersion Standard	Wavelength-averaged DGD
SRM2519a	Wavelength Reference Absorption Cell (Hydrogen Cyanide)	$2\nu_3$ band, in nm
SRM2520	Optical Fiber Diameter Standard	125 $\mu\text{m D}$, nominal
SRM2522	Pin Gauge Standard for Optical Fiber Ferrules	126 $\mu\text{m D}$, nominal
SRM2523	Optical Fiber Ferrule Geometry Standard	2.5 mm D, nominal
SRM2538	Polarization-Mode Dispersion	Wavelength-averaged DGD
RM8130	Coplanar Waveguide	Multiline coplanar waveguide 12 verification devices

粘度分析

Viscosity of Glass (bar form)

SRMs 710a, 711a, and 717a are for checking the performance of high temperature viscosity equipment (rotating cylinders) and low temperature viscosity equipment (fiber elongation, beam bending, parallel plates, etc.).

Cat.No.	品名	Temperature ($^{\circ}\text{C}$) at Log 10 Viscosity ($\text{Pa} \cdot \text{s}$)					
		1	2	3	4	5	6
SRM710a	Soda-Lime-Silica	1464	1205	1037	918		
SRM717a	Borosilicate	1555.4	1256.5	1065.1	932.1	834	758

Viscosity Fixpoints (solid forms)

Cat.No.	品名	Softening Point	Annealing Point	Strain Point	容量
		($^{\circ}\text{C}$)	($^{\circ}\text{C}$)	($^{\circ}\text{C}$)	
SRM709	Extra Dense Lead Silica	384	328	311	4 cm \times 4 cm \times 5 cm
SRM714	Alkaline Earth Alumina Silicate				在庫切れ
SRM717a	Borosilicate	719	513	470	4.2 cm \times 4.2 cm \times 12.5 cm

Values in parentheses are not certified and are given for information only.

Viscosity oil standards

Cat.No.	品名	Kinematic viscosity(noemal)	Dynamic viscosity(noemal)	容量
PSL2700V01	N4-Viscosity oil standard	0.47mm ² /s,cSt(20°C)	0.31mPa.scP(20°C)	500mL
		0.45mm ² /s,cSt(25°C)	0.29mPa.scP(25°C)	
		0.40mm ² /s,cSt(40°C)	0.26mPa.scP(40°C)	
PSL2700V02	N8-Viscosity oil standard	0.95mm ² /s,cSt(20°C)	0.73mPa.scP(20°C)	500mL
		0.89mm ² /s,cSt(25°C)	0.68mPa.scP(25°C)	
		0.75mm ² /s,cSt(40°C)	0.56mPa.scP(40°C)	
PSL2700V03	N1.0-Viscosity oil standard	1.3mm ² /s,cSt(20°C)	1.0mPa.scP(20°C)	500mL
		1.2mm ² /s,cSt(25°C)	0.93mPa.scP(25°C)	
		0.97mm ² /s,cSt(40°C)	0.76mPa.scP(40°C)	
		0.91mm ² /s,cSt(50°C)	0.71mPa.scP(50°C)	
PSL2700V04	S3-Viscosity oil standard	4.6mm ² /s,cSt(20°C)	3.9mPa.scP(20°C)	500mL
		4mm ² /s,cSt(25°C)	3.3mPa.scP(25°C)	
		2.9mm ² /s,cSt(40°C)	2.4mPa.scP(40°C)	
		2.4mm ² /s,cSt(50°C)	1.9mPa.scP(50°C)	
PSL2700V05	S6-Viscosity oil standard	1.2mm ² /s,cSt(100°C)	0.9mPa.scP(100°C)	500mL
		11mm ² /s,cSt(20°C)	9.1mPa.scP(20°C)	
		8.9mm ² /s,cSt(25°C)	7.6mPa.scP(25°C)	
		5.7mm ² /s,cSt(40°C)	4.8mPa.scP(40°C)	
		4.4mm ² /s,cSt(50°C)	3.7mPa.scP(50°C)	
PSL2700V06	N10-Viscosity oil standard	1.8mm ² /s,cSt(100°C)	1.4mPa.scP(100°C)	500mL
		21mm ² /s,cSt(20°C)	18mPa.scP(20°C)	
		17mm ² /s,cSt(25°C)	15mPa.scP(25°C)	
		10mm ² /s,cSt(40°C)	8.8mPa.scP(40°C)	
		7.3mm ² /s,cSt(50°C)	6.2mPa.scP(50°C)	
PSL2700V07	S20-Viscosity oil standard	2.7mm ² /s,cSt(100°C)	2.2mPa.scP(100°C)	500mL
		4.4mm ² /s,cSt(20°C)	39mPa.scP(20°C)	
		34mm ² /s,cSt(25°C)	31mPa.scP(25°C)	
		18mm ² /s,cSt(40°C)	16mPa.scP(40°C)	
		13mm ² /s,cSt(50°C)	11mPa.scP(50°C)	
PSL2700V08	N35-Viscosity oil standard	3.8mm ² /s,cSt(100°C)	3.2mPa.scP(100°C)	500mL
		87mm ² /s,cSt(20°C)	76mPa.scP(20°C)	
		66mm ² /s,cSt(25°C)	57mPa.scP(25°C)	
		32mm ² /s,cSt(40°C)	27mPa.scP(40°C)	
		21mm ² /s,cSt(50°C)	16mPa.scP(50°C)	
PSL2700V09	S60-Viscosity oil standard	5.3mm ² /s,cSt(100°C)	4.3mPa.scP(100°C)	500mL
		170mm ² /s,cSt(20°C)	76mPa.scP(20°C)	
		120mm ² /s,cSt(25°C)	57mPa.scP(25°C)	
		54mm ² /s,cSt(40°C)	27mPa.scP(40°C)	
		35mm ² /s,cSt(50°C)	18mPa.scP(50°C)	
PSL2700V10	N100-Viscosity oil standard	7.3mm ² /s,cSt(100°C)	4.3mPa.scP(100°C)	500mL
		330mm ² /s,cSt(20°C)	290mPa.scP(20°C)	
		230mm ² /s,cSt(25°C)	210mPa.scP(25°C)	
		97mm ² /s,cSt(40°C)	84mPa.scP(40°C)	
		60mm ² /s,cSt(50°C)	50mPa.scP(50°C)	
PSL2700V11	S200-Viscosity oil standard	11mm ² /s,cSt(100°C)	9mPa.scP(100°C)	500mL
		660mm ² /s,cSt(20°C)	580mPa.scP(20°C)	
		460mm ² /s,cSt(25°C)	400mPa.scP(25°C)	
		180mm ² /s,cSt(40°C)	150mPa.scP(40°C)	
		105mm ² /s,cSt(50°C)	90mPa.scP(50°C)	
PSL2700V12	N350-Viscosity oil standard	16mm ² /s,cSt(100°C)	13mPa.scP(100°C)	500mL
		1300mm ² /s,cSt(20°C)	1100mPa.scP(20°C)	
		850mm ² /s,cSt(25°C)	750mPa.scP(25°C)	
		310mm ² /s,cSt(40°C)	270mPa.scP(40°C)	
		170mm ² /s,cSt(50°C)	150mPa.scP(50°C)	
		23mm ² /s,cSt(100°C)	19mPa.scP(100°C)	

PSL2700V13	S600-Viscosity oil standard	2400mm ² /s,cSt(20°C)	2100mPa.scP(20°C)	500mL
		1600mm ² /s,cSt(25°C)	1400mPa.scP(25°C)	
		520mm ² /s,cSt(40°C)	450mPa.scP(40°C)	
		280mm ² /s,cSt(50°C)	240mPa.scP(50°C)	
		33mm ² /s,cSt(100°C)	28mPa.scP(100°C)	
PSL2700V14	N1000-Viscosity oil standard	3400mm ² /s,cSt(20°C)	2900mPa.scP(20°C)	500mL
		2400mm ² /s,cSt(25°C)	2000mPa.scP(25°C)	
		940mm ² /s,cSt(40°C)	800mPa.scP(40°C)	
		550mm ² /s,cSt(50°C)	460mPa.scP(50°C)	
		350mm ² /s,cSt(100°C)	280mPa.scP(100°C)	
PSL2700V15	S2000-Viscosity oil standard	9600mm ² /s,cSt(20°C)	7600mPa.scP(20°C)	500mL
		5900mm ² /s,cSt(25°C)	4900mPa.scP(25°C)	
		1700mm ² /s,cSt(40°C)	1500mPa.scP(40°C)	
		890mm ² /s,cSt(50°C)	770mPa.scP(50°C)	
		69mm ² /s,cSt(100°C)	62mPa.scP(100°C)	
PSL2700V16	N1002-Viscosity oil standard	20000mm ² /s,cSt(20°C)	17000mPa.scP(20°C)	500mL
		12000mm ² /s,cSt(25°C)	11000mPa.scP(25°C)	
		3400mm ² /s,cSt(40°C)	2900mPa.scP(40°C)	
		1600mm ² /s,cSt(50°C)	1400mPa.scP(50°C)	
		280mm ² /s,cSt(100°C)	238mPa.scP(100°C)	
PSL2700V17	S8000-Viscosity oil standard	41000mm ² /s,cSt(20°C)	33000mPa.scP(20°C)	500mL
		25000mm ² /s,cSt(25°C)	20000mPa.scP(25°C)	
		6700mm ² /s,cSt(40°C)	5900mPa.scP(40°C)	
		3200mm ² /s,cSt(50°C)	2800mPa.scP(50°C)	
		240mm ² /s,cSt(100°C)	200mPa.scP(100°C)	
PSL2700V18	N15000-Viscosity oil standard	77000mm ² /s,cSt(20°C)	68000mPa.scP(20°C)	500mL
		47000mm ² /s,cSt(25°C)	41000mPa.scP(25°C)	
		13000mm ² /s,cSt(40°C)	11000mPa.scP(40°C)	
		6100mm ² /s,cSt(50°C)	5400mPa.scP(50°C)	
		3000mm ² /s,cSt(100°C)	2600mPa.scP(100°C)	
PSL2700V19	S3000-Viscosity oil standard	89000mm ² /s,cSt(20°C)	80000mPa.scP(20°C)	500mL
		23000mm ² /s,cSt(25°C)	21000mPa.scP(25°C)	
		11000mm ² /s,cSt(40°C)	9500mPa.scP(40°C)	
		630mm ² /s,cSt(50°C)	540mPa.scP(50°C)	

DENSITY / 密度**Density (liquid form)**

Cat.No.	品名	Density(kg/cm ³)	容量
SRM211d	Toluene	871.476(15°C)	4 x 5mL
		866.828(20°C)	
		862.170(25°C)	
SRM2214	Isooctone(2,2,4-Trimethylpentane)	695.969(15°C)	4 x 5mL
		691.872(20°C)	
		687.753(25°C)	
HDF01	2,2,4-Trimethylpentane	Liquid density (20°C) 692	10mL
HDF02	Dodecane	Liquid density (20°C) 750	10mL
HDF04	Base lubricating oil approx.8mPa.s at 40°C	Liquid density (20°C) 867	10mL
HDF05	Base lubricating oil approx.30mPa.s at 41°C	Liquid density (20°C) 871	10mL
HDF06	Base lubricating oil approx.110mPa.s at 42°C	Liquid density (20°C) 881	10mL
HDF07	Base lubricating oil approx.160mPa.s at 43°C	Liquid density (20°C) 887	10mL
HDF08	Ethanol in water approx.41% ABV	Liquid density (20°C) 947	10mL
HDF09	Ethanol in water approx.11% ABV	Liquid density (20°C) 984	10mL
HDF10	Ethanol in water approx.10% by weight	Liquid density (20°C) 1036	10mL
HDF11	Ethanol in water approx.17% at 20°C	Liquid density (20°C) 1191	10mL
HDF13	Sodium bromide in water	Liquid density (20°C) 1206	10mL
HDF12	Tetrachloroethylene	Liquid density (20°C) 1623	10mL
GUM1.1	n-Hexane	Density (20°C) 659	10mL
GUM1.2	n-Heptane	Density (20°C) 683	10mL
GUM1.3	2,2,4-Trimethylpentane	Density (20°C) 691	10mL
GUM1.4	n-Nonane	Density (20°C) 717	10mL
GUM1.5	n-Octane	Density (20°C) 702	10mL
GUM1.6	Methylcyclohexane	Density (20°C) 769	10mL
GUM1.7	Cyclohexane	Density (20°C) 778	10mL
GUM1.8	Toluene	Density (20°C) 866	10mL
GUM1.10	2,4-Dichlorotoluene	Density (20°C) 1249	10mL
GUM1.11	Tetrachloroethylene	Density (20°C) 1623	10mL

Particule Size / 微粒子

ポリマー系

Cat No.	品名	保証幅 (μm)	容量
SRM1963a	Polystyrene (0.5% in H ₂ O)	101.8(nm)	5ml vial
SRM1691	Polystyrene (0.5% in H ₂ O)	0.269	5ml vial
SRM1690	Polystyrene (0.5% in H ₂ O)	0.895	5ml vial
CRM 165	Latex spheres, nominal 2 μ	2.223 ± 0.013	2mL suspension
CRM 166	Latex spheres, nominal 4.8 μ	4.821 ± 0.019	2mL suspension
CRM 167	Latex spheres, nominal 9.6 μ	9.475 ± 0.018	2mL suspension
SRM1965	Polystyrene	9.94 (hexagonal array) 9.89 (unordered lusters)	1 slide
SRM1961	Polystyrene (0.5% in H ₂ O)	29.64	5ml vial

鉍物系

Cat No.	品名	保証幅 (μm)	容量
SRM659	Silicon Nitride	0.2 - 10	5vialsx2.5g
CRM 066	Quartz Stokes' diameter	0.35-3.50	10g powder
SRM1978	Zirconium Oxide	0.33 2.19	5 g
CRM 070	Quartz Stokes' diameter	1.2-20	10g powder
CRM 067	Quartz Stokes' diameter	2.4-32	10g powder
SRM1984	Tungsten Carbide/Cobalt	9-30	14 g
SRM1982	Zirconium Oxide	10 - 150	10 g
CRM 069	Quartz Stokes' diameter	14-90	10g powder
SRM1985	Tungsten Carbide/Cobalt	18 - 55	14 g
CRM 130	Quartz Volume diameter	50-220	50g powder
CRM 068	Quartz Volume diameter	160-630	100g sand
CRM 131	Quartz Volume diameter	480-1800	200g powder
CRM 132	Quartz Volume diameter	1400-5000	700g gravel

ガラス系

Cat No.	品名	保証幅 (μm)	容量
SRM1021	Glass Beads	2-13	4g
SRM1003c	Glass Beads	10-60 (600-325mesh)	25 g
SRM1004b	Glass Beads	53-125(325-100mesh)	43 g
SRM1017b	Glass Beads	100-400(140-45mesh)	70 g
SRM1018b	Glass Beads	220-750 (60-25mesh)	87 g
SRM1019b	Glass Beads	750-1450(20-10mesh)	200 g
SRM8010	Sand	A(30-100 mesh)	3x150 g
		B(70-750 mesh)	
		C(100-325 mesh)	

Particle Count Materials

Cat.No.	品名	規格	容量
SRM2806a	Medium Test Dust in Hydraulic Fluid	在庫切れ	
SRM8631a	Medium Test Dust (MTD)	4 μm to 40 μm	20 g
RM8632	Ultrafine Test Dust	1 μm to 50 μm	20g

Particulate/Biomaterials

RM8011	Gold Nanoparticles, Nominal 10 nm Diameter (2 x 5 mL ampoules)
	Properties: - Reference Values for Particle Size - Information Values for Chemical and Electrochemical Properties
RM8012	Gold Nanoparticles, Nominal 30 nm Diameter (2 x 5 mL ampoules)
	Properties: - Reference Values for Particle Size - Information Values for Chemical and Electrochemical Properties
RM8013	Gold Nanoparticles, Nominal 60 nm Diameter (2 x 5 mL ampoules)
	Properties: - Reference Values for Particle Size - Information Values for Chemical and Electrochemical Properties

ERM-FD 304 COLLOIDAL SILICA 10mL		
Equivalent sphere hydrodynamic particle diameter		
	Certified value [nm]	Uncertainty [nm]
Scattering intensity-weighted harmonic mean diameter (DLS)	42.1	0.6
Extinction intensity-based modal Stokes (CLS)	33	3.0
Number-based modal diameter (TEM/SEM)	(27.8)	(1.5)

ERM-FD 100 Colloidal Silica in water 9mL		
Equivalent spherical diameter		
	Certified value [nm]	Uncertainty [nm]
Intensity-weighted harmonic mean diameter (DLS)	19	0.6
Intensity-based modal Stokes diameter (CLS)	20.1	1.3
Number-based modal diameter (TEM/SEM)	19.4	1.3
Intensity-weighted mean diameter (SAXS)	21.8	0.7
Equivalent spherical diameter, volume-weighted mean (SAXS)	(20.4)	(1.6)
Zeta Potential	(- 43.0 mV)	(22 mV)

Surface Area / 比表面積標準物質

Cat. No.	材 質	Specific Surface Area(m ² ·g ⁻¹) (BET)		容 量
CRM 169	α-alumina	0.104 ± 0.012		60g
BAMPM-101	SiO ₂	0.177 ± 0.004		10g
CRM 175	Tungsten	0.181 ± 0.031		200g
CRM 170	α-alumina	1.05 ± 0.05		60g
CRM 172	Quartz	2.56 ± 0.10		10g
SRM1900	Silicon Nitride	Multi Point : 2.85	Single Point : 2.79	4 g
CRM 171	alumina	2.954 ± 0.13		50g
BAMPM-102	α-Alumina	5.41 ± 0.04		10g
CRM 173	Titanium dioxide	8.23 ± 0.21		46g
SRM1918	Silica-alumina	Mean Pore Diameter 8.847nm	Median Pore Diameter 8.503nm	12g
		Total Intruded Volume 0.547nm ³ /g		
SRM2206	Controlled Pore Glass300nm	M P: 10.99(m ² ·g)	S P: 10.73(m ² ·g)	5g
SRM2207	Controlled Pore Glass18nm	M P: 177.8(m ² ·g)	S P: 1774.2(m ² ·g)	5g
SRM1898	Titanium Dioxide	Multi Point : 55.55	Single Point : 53.85	15g
BAMPM-104	Al ₂ O ₃ type150	79.8 ± 0.4	Specific pore volume 0.210 cm ³ /g	10g
			Mean pore radius 5.31nm	
SRM 2206	Controlled Pore Glass 300nm	Multi Point : 10.99	Single Point : 10.73	5g
BAMPM-103	Al ₂ O ₃ type60	156.0 ± 1.3		10g
		Specific pore volume 0.250 cm ³ /g		
		Mean pore radius 3.18		
SRM 2207	Controlled Pore Glass 18nm	Multi Point : 177.8	Single Point : 174.2	5 g

ERM-FD107 Faujasite type zeolite Φ 1.8mm	specific surface area (m^2/g)		10g / pellets	Sorptive: Nitrogen
	specific pore volume (m^3/g)			
	$p/p_0=0.99$			
	mean pore radius(nm)			
	Most frequent pore radius(nm)			
	Specific micropore volume(cm^3/g)	0.217 ± 0.005		
Median pore width(nm)	0.86 ± 0.03			
ERM-FD120 Alpha-Al ₂ O ₃ Φ 900 μ m	Pore volume (in m^3/g) at 50MPa		15g/Beads	
	Pore volume (in m^3/g) at 100MPa	545.0 ± 12.2		
	Pore volume (in m^3/g) at 195MPa	546.7 ± 12.7		
	Pore volume (in m^3/g) at 200MPa	546.8 ± 12.7		
	Pore volume (in m^3/g) at 395MPa	548.1 ± 13.1		
	Mean pore diameter d_{50} (nm)	228.0 ± 5.9		
	Most frequent pore diameter $d_{p,m}$ (nm)	232.2 ± 8.8		
ERM-FD121 Porous glass Φ 55 μ m	Pore volume (in m^3/g) at 100MPa	621.8 ± 12.9	12g/Beads	
	Pore volume (in m^3/g) at 195MPa	621.9 ± 12.9		
	Pore volume (in m^3/g) at 200MPa	621.9 ± 12.9		
	Pore volume (in m^3/g) at 395MPa	624.6 ± 13.4		
	Mean pore diameter d_{50} (nm)	15.1 ± 0.2		
	Most frequent pore diameter $d_{p,m}$ (nm)	15.3 ± 0.2		
ERM-FD122 Porous glass Φ 90 μ m	Pore volume (in m^3/g) at 100MPa	919.7 ± 16.8	10g/Beads	
	Pore volume (in m^3/g) at 195MPa	922.5 ± 17.5		
	Pore volume (in m^3/g) at 200MPa	922.6 ± 17.5		
	Pore volume (in m^3/g) at 395MPa	924.4 ± 17.2		
	Mean pore diameter d_{50} (nm)	139.0 ± 3.7		
	Most frequent pore diameter $d_{p,m}$ (nm)	140.2 ± 3.9		
BAM-P127/ SRM1917 Alumina 1 ϕ	Pore volume (in m^3/g) at 50MPa	69.4 ± 8.0	10g Beads	
	Pore volume (in m^3/g) at 100MPa	625.4 ± 13.6		
	Pore volume (in m^3/g) at 195MPa	637.1 ± 14.4		
	Pore volume (in m^3/g) at 200MPa	—		
	Pore volume (in m^3/g) at 395MPa	638.6 ± 21.6		
	Mean pore diameter d_{50} (nm)	24.2 ± 1.0		
	Most frequent pore diameter $d_{p,m}$ (nm)	23.9 ± 2.8		

Pressure volume curve (mercury intrusion curve)

ERM-FD123 10nm x 20nm (6 filter tubes)

Pressure range between 0.28 and 1.41 Mpa

Quantity	Certified values α m	0.9 – confidence-interval	0.95 – confidence-interval	0.99 – confidence-interval	unit
y_1 $V_{p,1.41MP}$	99.52	± 2.88	3.44	4.54	$\text{mm}^3 \text{g}^{-1}$
Specific pore volume at 1.41MPa					
y_2	0.4966	± 0.0151	0.0180	0.0238	Mpa
y_3	0.2151	± 0.0131	0.0156	0.0206	MPa
p_{50}	0.4829	± 0.0200	0.0239	0.0315	Mpa
d_{50}	3.0520	± 0.1285	0.2021	0.02021	μ m

ERM-FD124

Pressure range between 0.24 and 1.55 Mpa

Quantity	Certified values α m	0.95- prediction-interval	unit
y_1 $V_{p,1.55MPa}$ Specific pore volume at 1.55MPa	158.1	148.4 - 167.8	$mm^3 g^{-1}$
y_2	0.5021	0.474 - 0.530	MPa
y_3	0.2616	0.223 - 0.300	MPa
p_{50}	0.4795	0.451 - 0.508	MPa
d_{50}	3.074	2.89 - 3.26	μm

ERM-FD125

Pressure range between 0.12 and 0.88 Mpa

Quantity	Certified values α m	0.9 - confidence-interval	0.95 - confidence-interval	0.99 - confidence-interval	unit
y_1 $V_{p,0.88MP}$ Specific pore volume at 0.88MPa	207.9	199.5 - 216.3	197.8 - 218.0	194.6 - 221.2	$mm^3 g^{-1}$
y_2	0.2646	0.2533 - 0.2760	0.2511 - 0.2782	0.2467 - 0.2825	Mpa
y_3	0.1366	0.1216 - 0.1516	0.1187 - 0.1546	0.1130 - 0.1603	MPa
p_{50}	0.2554	0.2476 - 0.2633	0.2460 - 0.2649	0.2430 - 0.2679	Mpa
d_{50}	5.796	5.616 - 5.977	5.581 - 6.012	5.512 - 6.081	μm

ERM-FD126

Pressure range between 0.55 and 2.1 Mpa

Quantity	Certified values α m	0.95- prediction-interval	unit
y_1 $V_{p,2.1MPa}$ Specific pore volume at 2.1MPa	110.9	102.4 - 119.4	$mm^3 g^{-1}$
y_2	0.8682	0.8274 - 0.9091	MPa
y_3	0.2965	0.2660 - 0.3271	MPa
p_{50}	0.8441	0.8025 - 0.8856	MPa
d_{50}	1.746	1.661 - 1.832	μm

Micropore volume and width

Cat.No.	品名	Micropore volume (cm^3/g^1)	Median micropore width(nm)
BCR704 (10g)	Faujasite type zeolite	0.205	0.668
BCR705 (10g)	Linde type A zeolite	0.181	0.592

SURFACE FINISH

Surface Roughness (block form)

These SRMs are for calibrating stylus instruments that measure surface roughness. These electroless-nickel coated steel block have a sinusoidal roughness profile machined on the top surface.

Cat. No.	Type	Roughness, Ra (mm)	Wavelength, D (mm)	容量 (cm)
SRM2071b	Sinusoidal Roughness			在庫切れ
SRM2072	Sinusoidal Roughness			在庫切れ
SRM2073a	Sinusoidal Roughness	3.0	100	block: 2.4 × 3.3
SRM2074	Sinusoidal Roughness	1.0	40	block: 2.4 × 3.3
SRM2075	Sinusoidal Roughness	1.0	800	block: 2.4 × 3.3

Abrasive wear

Cat.No.	品名	ASTM G65 abrasion test	容量
SRM1857	D-2 Tool steel	2 blocks	

Surface tension

Cat No.	品名	Surface tension	容量
GUM 11.1	Isooctone	18 mN/m at 20°C	30mL
GUM 11.2	Benzene	28 mN/m at 20°C	30mL
GUM 11.3	Glycerol	62 mN/m at 20°C	30mL

METROGY / 度量衡

Optical Microscope Linewidth Measurement

Cat.No.	品名	Pich(μm)	サイズ
SRM 2059	Photomask Linewidth Calibration Standard		在庫切れ
SRM 2059	Photomask Linewidth Calibration Standard		在庫切れ
SRM2800	Microscope Magnification Standard		在庫切れ

Scanning electron microscope

Cat.No.	品名	Spacings	サイズ
SRM8091	SEM Sharpness Standard		2 x 2 mm
SRM2800	Microscope Magnification Standard		在庫切れ

Depth Profiling (wafer form)

SRMs 2133, 2134 and 2137 are for calibrating the secondary ion response to minor and trace element levels in a silicon matrix. SRM 2133 is certified for phosphorus; SRM 2134 is certified for arsenic; SRM 2137 is certified for boron. SRM 2135c is for calibrating equipment used to measure sputtered depth and erosion rates in surface analysis. SRM 2135c is certified for total chromium and total nickel thickness, for individual layer uniformity, for nickel/chromium bilayer uniformity, and for individual layer thickness.

Cat. No.	品名	Value	容量/形状(cm)
SRM2133	Phosphorus Implant in Si Depth Profile	^{31}P : 0.04927 $\mu\text{g}/\text{cm}^2$ (9.58×10^{14} atoms/ cm^2)	1 cm x 1 cm crystal
SRM2134	Arsenic Implant in Silicon Profile Standard	^{75}As : 0.09120 $\mu\text{g}/\text{cm}^2$ (7.330×10^{14} atoms/ cm^2)	1 cm x 1 cm crystal
SRM2135c	Nickel-Chromium Thin-Film Depth Profile Standard	Cr: 41.3 $\mu\text{g}/\text{cm}^2$ Ni: 49.4 $\mu\text{g}/\text{cm}^2$	1 x 2.54 x 0.04
SRM2137	Boron Implant in Silicon Depth Profile Standard	^{10}B : 0.01692 $\mu\text{g}/\text{cm}^2$ (1.018×10^{15} atoms/ cm^2)	1 x 1

Coating Thickness

Cat.	品名	Coating Thickness, nominal(mils)	(μm)	形状(mm)
SRM1358b	Copper and chromium on	0.8, 3.1, 9.8, 39	20, 80, 255, 1000	45 x 45
SRM1359b	Copper and chromium on	2.0, 5.5, 20, 32	48, 140, 505, 800	45 x 45
SRM1361b	Copper and chromium on	0.2, 0.5, 1.0, 2.0	6, 12, 25, 48	45 x 45
SRM1362b	Copper and chromium on	1.6, 3.1, 5.5, 7.9	40, 80, 140, 205	45 x 45
SRM1363b	Copper and chromium on	9.8, 16, 20, 26	255, 385, 505, 635	45 x 45
SRM1364b	Copper and chromium on	32, 39, 59, 79	800, 1000, 1525, 1935	45 x 45

Material for thin film and surface technology

	Layer		Substrate		Certified quantity
	Material	Nominal layer thickness	Material	Substrate dimensions	
BAM-L100	Ti/Al	5 x (100/250)nm	100Cr6 steel	ϕ 30 x 5	total layer thickness
BAM-L101	TiO ₂ /SiO ₂ multilayer	6 x (100/100)nm	BK7 glass	30 x 30 x 1	total layer thickness
BAM-L102	TiN single layer	2500nm	100Cr6 steel	ϕ 30 x 5	layer thickness
BAM-L103	VN single layer	2500nm	100Cr6 steel	ϕ 30 x 5	layer thickness
BAM-L104	TiC single layer	2500nm	100Cr6 steel	ϕ 30 x 5	layer thickness
BAM-L105	VC single layer	2500nm	100Cr6 steel	ϕ 30 x 5	layer thickness

Superconducting Critical Current (wire form)

This SRM is for checking the performance of measurement systems used in superconductor technology. It consists of 2.2 m of a multifilamentary niobium titanium, copper-stabilized superconducting wire wound in a single layer onto a spool with a core diameter of 8.7 cm.

Cat.No.	品名	Magnetic Field(T)	Critical Current(A)
SRM1457	Niobium-Titanium Wire	2	293.3
		4	187.38
		6	124.72
		8.000	69.72

Microscale Dimensional Measurement Standards

Cat.No.	品名	サイズ
SRM2800	Microscope Magnification Standard	在庫切れ
SRM5000	Overlay Wafer Standard	17.6 mm × 16.0 mm
SRM5001	Two-Dimensional Grid Photomask Standard	15.2 cm × 15.2 cm × 0.64 cm

X-線 分析

X線回折

Cat.No.	品名	XRD Application	容量	Lattice Parameters(in nm)
640d	Silicon Powder	Line Position and Line Shape	7.5 g	Parameters 0.543 123
656	Silicon Nitride	Quantitative Analysis	10g x 2	a-(0.7752630 / 0.5619372) b-(0.7602293 / 0.2906827)
660b	Lanthanum Hexaboride Powder	Line Position and Line Shape	6 g	0.415 689
674b	X-Ray Powder Diffraction	Quantitative Analysis	set of 5	
	CeO ₂ (fluorite structure)		10g	(0.5411102)
	Cr ₂ O ₃ (corundum structure)		10g	(0.4958979 / 1.359592)
	TiO ₂ (rutile)		10g	(0.4593927 / 0.2958875)
	ZnO (wurtzite structure)		10g	(0.3249897 / 0.520653)
675	Mica	Line Position - Low 2θ	7.5g	0.998104
1878a	Respirable Quartz	Quantitative Analysis		在庫切れ
1879a	Respirable Cristobalite	Quantitative Analysis	5 g	
1976b	Alumina Plate, Sintered	Instrument Response	25.6mm Φ x 2.2mm thickness	0.4758846 / 1.299306
1990	Ruby Sphere	Single Crystal Diffractometer	3 spheres	a: 0.476080 nm
				c: 1.299568 nm

Values in parentheses are not certified but are provided as reference values or are given for information only.

X-Ray and Photography (chart and step tablet forms)

Cat.No.	品名	容量
SRM1010a	Microcopy Resolution Test Chart	Set of 5 charts
SRM5001	Two -Dimensional Grid Photomask Standard	

Solder Thickness for X-Ray Fluorescence

Cat.No.	品名	構成比	Coating Mass/Area	Cating Thickness	
				μ m	μ m
SRM2321	Tin -lead alloy on copper	60%Sn, 40%Pb	6.8mg/cm ²	295	7.5

蛍光X線分析用薄膜標準物質

X-Ray Fluorescence Calibration Standards



元 素
Li (LiF)
Na (NaCl)*
Mg
Al
Si (SiO)
P (GaP)**
S (CuSx)
Cl (NaCl, KCl)*
K (KCl, KI)
Ca (CaF2)
Sc (ScF3)
Ti
V
Cr
Mn
Fe
Co
Ni
Cu
Zn (ZnTe)**
Ga (GaP)**
Ge
As (GaAs)
Se
Br (CsBr)
Rb (RbI)
Sr (SrF2)
Y (YF3)
Nb (NbO3)
Mo (MoO3)
Rh

元 素
Pd
Ag
Cd (CdSe)**
In
Sn
Sb
Te
I (RbI, KI)*
Cs (CsBr)*
Ba (BaF2)
La (LaF3)
Ce (CeF3)
Pr (PrF3)
Nd (NdF3)
Sm (SmF3)
Eu (EuF3)
Gd (GdF3)
Tb (TbF3)
Dy (DyF3)
Ho (HoF3)
Er (ErF3)
Tm (TmF3)
Yb (YbF3)
Lu (LuF3)
W (WO3)
Pt
Au
Ag-Hg amalgam***
Tl (TlCl)
Pb
Bi

* dual element standards, beware duplication

** variable stoichiometry(thickness certified for TOTAL of both elements)

*** Hg thicness certified to +/- 10%

仕様:規格

基台は丸型です。

お選び頂いた元素に、基台と元素を蒸着させるフィルム及び位置をお決め下さい。

① Mount(基台)のサイズと材質

外径	25mm	32mm	36mm	47mm*	} この組合せの中からお選び下さい。
内径	19mm	25mm	29mm	39mm	

* 47mmの場合は元素の金額より10%加算されます。

材質 : アクリルリング 厚さ : 約 1.5mm

② Backing(フィルム)の材質と厚さ

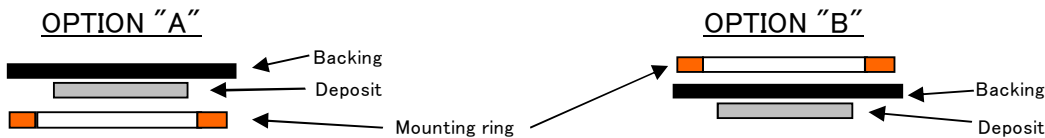
a, b いずれかのBacking をお選び下さい。

a : 2.5 μ , 3.5 μ , 6.3 μ Mylar Polyester film (6.3 μ = 約 1mg/cm² thick) よりお選び下さい。
* 2.5 μ の場合は元素の金額より10%加算されます。

b : Nuclepore Polycarbonate Aerosol Membranes (0.4 μ pore size 約1mg/cm² thick)

③ Mount と Backing の位置

基台とフィルムの位置について「オプションA」か「オプションB」のいずれかをお選び下さい。



④ 元素の厚さ

公称値 : 50 μ g/cm² (誤差は約±20% 以内)

(Thicker and deposits may be available but must be individually quoted. Standarda are fabricated to \pm 20% of the soecified thicness with the actual thickness determined to \pm 5% where possible.)

⑤ 添付データについて

下記のようなSpec date が添付されます。

例) 元素を Aluminium、 基台を外形36mm・内径を29mm、フィルムをマイラー6.3 μ 、位置をオプションBにした場合

XRF Calibration Standard Certification

STANDARD	Aluminium as Al metal	
SERIAL NUMBER	14515	
AREAL DENSITY ELEMENT 1	39.1 μ g/cm ² +/- 5% as Al	ELEMENT 2
BACKING MATERIAL	6.3 μ m Mylar	
MOUNT	36mm O.D., 29mm I.D. Acrylic ring	
OTHER INFORMATION	Deposit sides face away from ring (Option "B")	

BASIC STANDARD SET FOR WDS & EDS***Product Code GP25***

This standard block is ideal for general purpose applications including routine Silicate Analysis, Material Science and Metallurgical analysis by EDS or WDS. Standard block contains the following 25 materials giving standards for the elements listed.

**Basic Standard Set**

1 inch diameter, 8mm thick

Std	Element	Standard (* Natural Material)
1	Na	Albite, Na/*
2	Mg	Periclase, MgO
3	Al	Corundum, Al ₂ O ₃
4	Si,Ca	Wollastonit*
5	Ga, P	Gallium Phosphide, GaP
6	Fe, S	Pyrite, FeS*
7	K	Orthoclase, KAlSi ₃ O ₈
8	Ti	Metal
9	V	Metal
10	Cr	Metal
11	Mn	Metal
12	Fe	Metal
13	Co	Metal
14	Ni	Metal
15	Cu	Metal
16	Zn	Metal
17	Ge	Metal
18	Sb	Metal
19	Zr	Metal
20	Nb	Metal
21	Mo	Metal
22	Ag	Metal
23	Ba	Barite, Ba/*
24	Ta	Metal
25	W	Metal

RARE EARTH ELEMENT (REE) GLASS STANDARDS FOR WDS***Product Code REE6G***

These REE standards consist of a set of six Si-Al-Ca based glasses. Four of the glasses contain either three or four of the 14 REEs, (one glass also contains Yttrium as it is often found in association with the REE's), each REE and Yttrium being present at a concentration of 4 wt%. The REE elements assigned to each glass is such that minimum X-ray peak overlap is encountered. A fifth glass contains all the REEs at 0.5 wt% concentration. The sixth glass is REE free and is used as a zero standard. Typical area of each glass after polishing approximately 3mm square.

Glass 1. Y, Glass 4. Nd, Tb, & Lu at 4 wt%
 Glass 2. C Glass 5. All the REE at 0.5 wt%
 Glass 3. L; Glass 6. REE free blank



1 inch diameter, 8mm thick

COMPREHENSIVE STANDARD SET FOR EDS & WDS**Product Code GP40**

This more comprehensive standard block is also ideal for routine Silicate Analysis, Material Science and Metallurgical analysis by EDS or WDS. Standard block contains the following 40 materials giving standards for the elements listed below.



1 inch diameter, 8mm thick

Comprehensive standard block

Std	Element	Standard (* Natural Material)
1	Na	Jadeite, N.*
2	Mg	Periclase, MgO
3	Al	Corundum, Al ₂ O ₃
4	Si,Ca	Wollastonit*
5	Ga, P	Gallium Phosphide, GaP
6	Fe, S	Pyrite, Fe ₂ S ₃ *
7	K	Orthoclase, KAlSi ₃ O ₈
8	Ti	Metal
9	V	Metal
10	Cr	Metal
11	Mn	Metal
12	Fe	Metal
13	Co	Metal
14	Ni	Metal
15	Cu	Metal
16	Zn	Metal
17	Ge	Metal
18	Sb	Metal
19	Zr	Metal
20	Nb	Metal
21	Mo	Metal
22	Ag	Metal
23	Ba	Barite, Ba ₂ *
24	Ta	Metal
25	W	Metal
26	Ca, F	Fluorite, C*
27	Sr, F	Strontium *
28	Sn	Cassiterite*
29	Rh	Metal
30	Cd, S	Cadmium Sulphide, CdS
31	In, As	Indium Arsonide, InAs
32	Hg, Te	Mercury Telluride, HgTe
33	Bi,	Metal
34	Au	Metal
35	Pt	Metal
36	Hf	Metal
37	Pb, Te	Lead Telluride, PbTe
38	Se	Selenium
39	Y	Metal
40	La, B	Lanthanum Hexaboride, LaB ₆

RARE EARTH ELEMENT (REE) GLASS STANDARDS FOR EDS and WDS

Product Code REE16G

A standard set consisting of sixteen Si-Al-Ca based glasses. Fourteen of the glasses each containing a single REE oxide at 12 wt%, additionally a glass containing Yttrium oxide at 12wt% is included as it is often found in association with the REE's, one of the glasses is REE free and is for use as a zero standard.

REE6G and REE16G STANDARDS COMBINED IN ONE BLOCK

Product Code REE22G

A standard set consisting of all the 6 REE glasses in product code REE6G and the 16 glasses in product code REE16G.

This standard block is intended for the microanalyst who requires all the REE glasses available situated in one block.

All the above glasses can be supplied as a set or supplied individually in customer specified standard blocks. These glass standards have all been chemically analysed in duplicate and the glasses are issued with a certificate of analysis from a certified laboratory. They have all been tested for homogeneity by EPMA. These glasses have been developed to replace the fluorides and pure metals traditionally used as standards for REE analysis. REE glasses have the advantage of providing a standard which is easily polished, free from surface oxidation and generally lowers the amplitude of the analysis ZAF correction.

高分子 特性**Molecular Mass/Weight****NIST Polymers (liquid, pellet, and powder forms)**

型番	品名	容量
705a	Polystyrene	5 g
706a	Polystyrene	18 g
1473b	Low Density Polyethylene Resin	60 g
1474a	Polyethylene Resin	60 g
1476a	Branched Polyethylene Resin	12 g
1478	Polystyrene, Narrow Mol. Wt.	2 g
1479	Polystyrene, Narrow Mol. Wt.	2 g
1484a	Polyethylene, Linear	0.3 g
1487	Poly (methyl methacrylate)	2 g
1488	Poly (methyl methacrylate)	2 g
1489	Poly (methyl methacrylate)	2 g
1496	Polyethylene Gas Pipe Resin	0.9 kg
2490	Non-Newtonian Polymer Solution for Rheological Measurements	100 mL
2881	Polystyrene Absolute Molecular Mass Distribution Standard	0.3 g
8394	Tissue Engineering Reference Scaffolds for Cell Culture	24 scaffolds
8395	Tissue Engineering Reference Scaffold	1 scaffold
8396	Tissue Engineering Reference Scaffold	1 scaffold
8397	Tissue Engineering Reference Scaffold	1 scaffold
8456	Ultra High Molecular Weight Polyethylene	each
8457	Ultra High Molecular Weight Polyethylene	10 cubes x 0.5 cm

NIST 標準ポリマー

RM8456	Ultra High Molecular Weight Polyethylene : 60 in x 3 in diameter (bar) (152.4 cm x 7.62 cm diameter)
	Properties: - Young's Modulus - Yield Strength - Ultimate Strength - Elongation
RM8457	Ultra High Molecular Weight Polyethylene 10 (0.5 cm) cubes (same material as RM 8456)
	Properties: - Young's Modulus - Yield Strength - Ultimate Strength - Elongation

BAM 標準ポリマー

Cat.No.	品名	MW by light scattering g/mol	IV by viscosity mL/g	Average MW (Mw & Mn) g/mol	Mw/Mn MALDI-TOF-mass spectrometry
BAM-P001	Polystyrene Amorphous material	87600 ± 2,91	42,37 ± 1.96		
BAM-P002	Polystyrene Pellets	205600 ± 1.49	68,38 ± 3.85		
BAM-P005	Polystyrene Pellets	349800 ± 2.77	104.28 ± 2,20		
BAM-P003	PMMA Crystalline material	107050 ± 2.33	31.48 ± 3.85		
BAM-P006	PMMA Amorphous material	365500 ± 2.96	90.63 ± 1.16		
BAM-P007	PMMA Crystalline material	360200 ± 2,73	84,80 ± 2.14		
BAM-P004	PEO Crystalline material		14,28 ± 3.74	Mw:6065 ± 1.46 Mn:5960 ± 1.02	1.02 ± 0.98
BAM-P008	PEO Crystalline material		20.91 ± 5.37	Mw:11400 ± 1.16 Mn:11300 ± 0.95	1.01 ± 0.0
BAM-P009	Poly(lactide) Granulate	77450 ± 2.16	61.19 ± 2.62		
BAM-P010	Poly(lactide) Crystalline material	225200 ± 5.98	125.29 ± 2.43		

**Viscosity
粘度**

SRM	品名	容量
2490	Non-Newtonian Polymer Solution for Rheology Polyisobutylene Dissolved in 2,6,10,14-Tetramethylpentadecane	100 mL
2492	Bingham Paste Mixture for Rheological Measurements	kit for two batches

**Melt Flow Rate
融解流量率**

SRM	品名	容量(g)
SRM1473b	Polyethylene Resin, low density, melt flow = 1.13 g/10 min	50
SRM1474a	Polyethylene Resin, melt flow = 5.10 g/10 min	60
SRM1475a	Polyethylene, Linear, 2.02 g/min density 0.97844g/cm ³	50
SRM1496	Polyethylene Gas Pipe Resin, melt flow (Unpigmented) 0.26 g/10min Limiting viscosity number in tetrahydrofuran(25°C)37.4mL/g	900

産総研(NMIJ) 標準ポリマー

ポリスチレン2400 CRM5001-a 0.2g		
重量平均分子量Mw		2423 ± 20
数平均分子量Mn		2307 ± 18
ピーク平均分子量Mp		2469 ± 17
多分散度 Mw/Mn		1.050 ± 0.016

ポリスチレン500 CRM5002-a 0.4g		
重量平均分子量Mw		501.7 ± 6.8
数平均分子量Mn		436.2 ± 5.6
ピーク平均分子量Mp		475.3 ± 8.0
多分散度 Mw/Mn		1.150 ± 0.030

ポリカーボネート46000	CRM5003-a	0.2g
質量平均分子量Mw	4.58 x 10 ⁴ ± 0.36 x 10 ⁴ g/mol	

ポリスチレン100	CRM5004-a	0.4g
重量平均分子量Mw	1012.9 ± 8.6	
数平均分子量Mn	868.3 ± 7.3	
ピーク平均分子量Mp	1021.4 ± 6.1	
多分散度 Mw/Mn	1.167 ± 0.019	

ポリエチレングリコール400	CRM5005-a	1g
重量平均分子量Mw	431.2 ± 5.7	
数平均分子量Mn	409.0 ± 4.4	

ポリエチレングリコール1000	CRM5006-a	1g
重量平均分子量Mw	1084.7 ± 20.8	
数平均分子量Mn	1040.6 ± 17.6	

ポリエチレングリコール1500	CRM5007-a	1g
重量平均分子量Mw	1601.0 ± 66.8	
数平均分子量Mn	1560.6 ± 60.0	

ポリスチレン(多分散)	CRM5008-a	5g
重量平均分子量Mw	276,000 ± 15,000	
数平均分子量Mn	94,600 ± 6,400	
多分散度 Mw/Mn	2.94 ± 0.17	

ポリスチレン8500 NMIJ	CRM5009-a	0.3g
参考値 数平均分子量	8570 ± 190	

Biomaterials (solid forms)

Cat No. / 品名	Properties:	容量
RM8457 Ultra high molecular weight polyethylene	- Young's Modulus - Yield Strength - Ultimate Strength - Elongation	10 (0.5 cm) cubes
RM8456 Ultra High Molecular Weight Polytheylene	- Young's Modulus - Yield Strength - Ultimate Strength - Elongation	60 in x 3 in diameter (bar) (152.4 cm x 7.62 cm diameter)

OPTICAL PROPERTIES / 光学特性

Molecular Absorption (film, filter, solid, and solution forms) / 分子吸光標準物質

Cat.No.	品名	Wavelength Range (in nm)	容量
SRM931g	Liquid Filters, Absorbance	302 to 678	Set of 12 ampoules
SRM935a	Potassium Dichromate, UV Absorbance	235 to 350	15 g
SRM1921b	Infrared Transmission Wavelength	3 μm to 18 μm	1 card
SRM1935a	Potassium Dichromate Solution/UV Absorbance Standard	235, 247, 313, 350	set of 10
SRM2031b	Metal-on-Quartz Filters, Transmittance		在庫切れ
SRM2035a	Near IR Transmissions, Wavelength	975 to 1946	filter
SRM2036	Near IR Wavelength /Wavenumber Reflection	975 to 1946	25 mm diameter
ERM-FB010a	UV-Visible wavelength Holmium/Neodymium oxide solution	219 to 865 at 0.5, 1, 2 nm	1 cuv
ERM-FB011a	UV-Visible absorbance Sodium nitrate/cobalt chloride/nickel chloride solution	299.4, 395.0, 512.5, 719.0 at 1nm bandwidth	3 standards + 1 blank
ERM-FB012a	IR wavelength - Polystyrene in hexane	3026.0, 1601.1, 1028.8, 698.0cm ⁻¹	5 x 1mL
ERM-FB020a	UV-Visible wavelength for HPLC detectors-Holmium/Neodymium oxide solution	241 to 797 at 1, 4, 7, 10nm	2 x 3mL
ERM-FB021a	UV-Visible wavelength for HPLC detectors-Sodium nitrate/Cobalt chloride/Nickel chloride solution	299.4, 395, 512, 719.0 at 1, 4, 7, 10nm	8 x 3mL

Molecular Luminescence (solid form) 蛍光標準物質

Cat.No.	Description	Wavelength Range (nm)	容量
SRM1932	Fluorescein	488 to 491	3 x 2 mL
SRM2241	Relative Intensity Correction, Raman Spectroscopy	785	
SRM	Relative Intensity Correction Standard for Raman Spectroscopy	532	
SRM2243	Relative Intensity Correction, Raman Spectroscopy		在庫切れ

屈折率

Cat.No.	品名	Refractive Index	Degrees Brix	容量
EREM-BD011a	Orange Juice	1.3348	1.26	3mL
EREM-BD012a	Orange Juice	1.3521	12.72	3mL
EREM-BD013a	Orange Juice	1.3673	22.07	3mL
EREM-BD014a	Orange Juice	1.4320	55.55	3mL
EREM-BD015a	Orange Juice	1.4529	64.73	3mL

Certified values are given for the refractive indices at six wavelengths, at 20 ° C, and for the change in n with respect to temperature, dn/dT valid over the temperature range from 15 ° C to 35 ° C:

Cat.No.	品名	Wavelength(nm)	n (at 20 ° C)	dn/dT ° C ⁻¹
SRM1922	Liquid Refractive Index - Mineral Oil 30mL	467.8	1.47685 ± 2x10 ⁻⁵	-3.74x10 ⁻⁴ ± 3x10 ⁻⁶
		480	1.47583 ± 3x10 ⁻⁵	-3.75x10 ⁻⁴ ± 4x10 ⁻⁶
		508.6	1.47373 ± 2x10 ⁻⁵	-3.72x10 ⁻⁴ ± 2x10 ⁻⁶
		546.1	1.47149 ± 2x10 ⁻⁵	-3.70x10 ⁻⁴ ± 2x10 ⁻⁶
		643.8	1.46744 ± 2x10 ⁻⁵	-3.66x10 ⁻⁴ ± 3x10 ⁻⁶
		589.3	1.46945 ± 6x10 ⁻⁵	-3.68x10 ⁻⁴ ± 2x10 ⁻⁶

The refractive index corresponds to approximately 71.6 on the Brix scale.

Cat.No.	品名	Refractive index	容量
PRG 7.21	Water	1.333 at 20°C	10mL
PRG 7.1	2,2,4-Trimethylpentan	1.391 at 20°C	10mL
PRG 7.11	Methylsilicon oil	1.405 at 20°C	10mL
PRG 7.2	Methylcyclohexane	1.423 at 20°C	10mL
PRG 7.12	Silicon oil DC 556	1.462 at 20°C	10mL
PRG 7.20	Paraffin oil	1.475 at 20°C	10mL
PRG 7.5	Toluene	1.496 at 20°C	10mL
PRG 7.6	Chlorobenzene	1.524 at 20°C	10mL
PRG 7.13	Silicon oil AN 140	1.560 at 20°C	10mL
PRG 7.8	1-Bromonaphthalene	1.657 at 20°C	10mL
PRG 7.9	1-Iodonaphthalene	1.702 at 20°C	10mL
RPC18061	Refractive index liquids	Refractive index range 1.400-1.458 (interval 0.002)	30 x 7mL
RPC18062	Refractive index liquids	Refractive index range 1.400-1.458 (interval 0.004)	15 x 7mL
RPC18065	Refractive index liquids	Refractive index range 1.400-1.458 (interval 0.01)	6 x 7mL
RPC1806X	Refractive index liquids	Refractive index range 1.400-1.458 (interval 0.002)	1 x 7mL
RPC1806Y	Refractive index liquids	Refractive index range 1.400-1.458 (interval 0.002)	1 x 30mL
RPC18091	Refractive index liquids	Refractive index range 1.460-1.640 (interval 0.002)	91 x 7mL
RPC18092	Refractive index liquids	Refractive index range 1.460-1.640 (interval 0.004)	46 x 7mL
RPC18095	Refractive index liquids	Refractive index range 1.460-1.640 (interval 0.01)	19 x 7mL
RPC1809X	Refractive index liquids	Refractive index range 1.460-1.640 (interval 0.002)	1 x 7 mL
RPC1809Y	Refractive index liquids	Refractive index range 1.460-1.640 (interval 0.002)	1 x 30mL
RPC18121	Refractive index liquids	Refractive index range 1.642-1.700 (interval 0.002)	30x7mL
RPC18122	Refractive index liquids	Refractive index range 1.642-1.700 (interval 0.004)	15 x 7mL
RPC18125	Refractive index liquids	Refractive index range 1.642-1.700 (interval 0.01)	6 x 7mL
RPC1812X	Refractive index liquids	Refractive index range 1.642-1.700 (interval 0.002)	1 x 7mL
RPC1812Y	Refractive index liquids	Refractive index range 1.642-1.700 (interval 0.002)	1 x 30mL

Optical Rotation (powder form)

旋光標準物質

Cat.No.	品名	Optical Rotation (in mrad)—Aqueous Solution				容量 (g)
		Wavelength (100 mm cell)				
		546 nm	589 nm	633 nm	882.6 nm	
GUM8.1	Sucrose(Saccharose)	78.35°	66.53°			100g
SRM17f	Sucrose	355.68	302.03	259.51	129.41	60
SRM917c	D-Glucose (Dextrose)					50

Materials with integral optical properties

	BAM-V001 S1E	BAM-V002 S1E
品名	polished black glass	commercial retroreflective film used for traffic signs
サイズ	about 100x100mm	about 100x100mm
Optical property	specular gloss	coefficient of retroreflection
Method for estimating the certificate value	DIN67530, ISO2318	DIN67520, CIE-Pub.54
Essential parameters for measurement	illumination angle: 20°C, 60°C, 85°C	observation angle 0.1 to 2 °C entrance angle: -60°C to 60°C rotation angle 0 to 360 °C
Certified value	about 95 units	10 to 50 cd/(lxmm) [customer defined]
Uncertainty ($K=2$)	0.3 units	5%
Validity of the certified value	1 year	1 year
Traceability to	PTB	PTB
Delivery of the material	typically by the customer	typically by the customer

Materials with is spectral optical properties

	BAM-V004/5 S1E	BAM-V007 S1E	BAM-V006 S1E	BAM-V008 S1E
品名	reflection non-fluorescent reference object	transparent reference object	reflecting fluorescent reference object	reflecting fluorescent reference object
サイズ	typical 50 x 50mm	typical 50 x 50mm	typical 50 x 50mm	typical 50 x 50mm
Optical property	special radiance factor	special transmittance factor	bispectral transition factor	total radiance factor
Method for estimating the certificate value	DIN 5033	DIN 5033	Two-Monochromator-Method	DIN 5033
Measuring geometry	45/0, d/8, or 8/d in- or excluding specular reflection	0/0	45/0	45/0
Wavelength region	380-720 nm	300-2500 nm	300-800 nm	300-800 nm
Stepwidth and optical properties	10 nm	10 nm	10 nm	10 nm
Calculated spectral properties			total, fluorescent, and reflected radiance factor	
Calculated spectral properties	X, Y, Z L, a, b or others		X, Y, Z L, a, b or others	X, Y, Z L, a, b or others
Uncertainty ($K=2$)	1%	1 % to 2 %	1 % to 2 %	2%
Validity of the certified value	1 year	1 year	1 year	1 year
Traceability to	PTB	PTB	PTB	PTB
Delivery of the material	typically by the customer	typically by the customer	typically by the customer	typically by the customer

Optical Microscope Linewidth Measurement (photomask)

SRM 2800 is used in calibrating magnification and consists of a pattern of parallel lines whose nominal distances from the centerline range from $\pm 1\mu\text{m}$ to $\pm 5\text{mm}$. Certified values are given for the center-to-center distance of each line from the centerline; the linewidths are not certified.

Cat.No.	品名	Linewidth	Pitch	容量(cm)
SRM2800	Microscope Magnification	-	-	在庫切れ

Colour measurement

Cat.No.	品名	規格
BCR400	Red ceramic tile(tomato paste colour)	
BCR406A	Opal glass	50mm ϕ x 14mm
BCR406B	Opal glass	100mm ϕ x 15mm

Microscale Dimensional Measurement

Cat.No.	品名	規格(形状)
SRM5000	Overlay Wafer Standard	each
SRM5001	Two-Dimensional Grid Photomask, Std	cell
RM8820	Scanning Electron Microscope Scale Calibration Artifact	1 chip

イオン活性分析

pH Calibration (powder form)

pH計測

These SRMs are used to prepare solutions of known hydrogen ion activity to calibrate commercial pH instruments. SRMs 186g and 191c are each certified for use as an admixture only. SRM 186g

(186-I-g and 186-II-g) may be used to prepare solutions with a pH of 6.8640 at 25°C, or physiological buffer solutions with a pH of 7.4157 at 25°C.

Cat.No.	品名	pH(S) Values (at 25oC)	容量 (in g)
SRM 185i	Potassium Hydrogen Phthalate, pH Standard	4.005	60
SRM186g	pH Standards: Phosphate buffers (Potassium Dihydrogen Phosphate, Disodium Hydrogen Phosphate)	お問い合わせ下さい	1 set (30 g, 45 g)
SRM187e	Sodium Tetraborate Decahydrate (Borax)	9.182	30
SRM188	Potassium Hydrogen Tartrate	3.557	60
SRM189c	Potassium Tetroxalate	1.677	65
SRM191d	pH Standards, (set of 191d-I + 191d-II)	10.014	1 set
SRM2193a	Calcium Carbonate	12.469	30
RM8040	Sodium oxalate(reductometric)	Reductiometric Assay 99.951%	60

Biological bufeer system

Cat.No.	品名	保証値	容量
SRM2181	HEPES free acid	0.05M pH(0-50°C) : 7.832 - 7.216	60g
		0.08M pH(0-50°C) : 7.853 - 7.222	
SRM2182	HEPES Sodium salt	0.05M pH(0-50°C) : 7.832 - 7.216	60g
		0.08M pH(0-50°C) : 7.853 - 7.222	
SRM2183	MOPSO free acid	0.05M pH(0-50°C) : 7.260 - 6.528	60g
		0.08M pH(0-50°C) : 7.268 - 6.534	
SRM2184	NaMOPSOate free acid	0.05M pH(0-50°C) : 7.260 - 6.528	60g
		0.08M pH(0-50°C) : 7.268 - 6.534	

pD計測

These SRMs are for the preparation of solutions of known deuterium ion activity to calibrate pH instruments to indicate pD data. SRMs 2186II, and 2191a and 2192a are certified for use as admixtures only.

Cat.No.	品名	pD(S) Values (at 25°C)	容量
SRM2185	Potassium Hydrogen Phthalate	4.518	60g
SRM2186	Potassium Dihydrogen Phosphate	7.428	30g
SRM2186II	Disodium Hydrogen Phosphate	7.428	30g
SRM2191a	Sodium Bicarbonate	10.732	30g
SRM2192a	Sodium Carbonate	10.732	30g

Ion-Selective Electrode Calibration (powder form)

These SRMs are certified for the calibration of ion-selective electrodes and have conventional ionic activities based on the Stokes-Robinson hydration theory for ionic strengths greater than 0.1mol/L.

Cat.No.	品名	Certified Component	容量 (g)
SRM2201	Sodium Chloride	pNa, pCl	125
SRM2202	Potassium Chloride	pK, pCl	在庫切れ
SRM2203	Potassium Fluoride	pF	125

Electrolytic Conductivity (liquid form)**電気伝導**

Cat.No.	品名	Nominal Conductivity (μ S/cm) at 25°C	容量 (in mL)
SRM3190	HCl in deionized Water	26.4	在庫切れ
SRM3191	Aqueous Electrolytic Conductivity	99.94	500
SRM3192	KCl in deionized Water	496.73	在庫切れ
SRM3193	KCl in deionized Water	996.51	在庫切れ
SRM3198	KCl in n-propanol/deionized Water	5.20	在庫切れ
SRM3199	KCl in n-propanol/deionized Water	15.36	在庫切れ
GUM5.1	KCl solution	11.3 S/m at 25°C	100
GUM5.2	KCl solution	1.285 S/m at 26°C	100
GUM5.3	KCl solution	0.1410 S/m at 27°C	100
GUM5.4	KCl solution	0.01483 S/m at 28°C	100
GUM5.5	KCl solution	0.0720 S/m at 29°C	100
GUM5.6	KCl solution	0.0293 S/m at 30°C	100

reagecon electrolytic conductivity standard

Cat.No.	品名	Electrolytic Conductivity (μ S/cm) at 25°C	容量 (in mL)
REACKC84	Conductivity standard	84	500
REACKCS	Conductivity standard	147	500
REACKCL	Conductivity standard	1413	500
REACKC12880	Conductivity standard	12880	500
REACKC13	Conductivity standard	1.30	500
REACK136	Conductivity standard		6x250
REACKC5	Conductivity standard	5	500
REACKC10	Conductivity standard	10	500
REACKC20	Conductivity standard	20	500
REACKC50	Conductivity standard	50	500
REACKC100	Conductivity standard	100	500
REACKC200	Conductivity standard	200	500
REACKC500	Conductivity standard	500	500
REACKC1000	Conductivity standard	1000	500
REACKC5M	Conductivity standard	5000	500

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REACKC10M	Conductivity standard	10000	500
REACKC20M	Conductivity standard	20000	500
REACKC50M	Conductivity standard	50000	500
REACKC100M	Conductivity standard	100000	500
REACKC150M	Conductivity standard	150000	500
REACKC200M	Conductivity standard	200000	500
REACKC300M	Conductivity standard	300000	500
REACKC350M	Conductivity standard	350.000	500
REACKC450M	Conductivity standard	450000	500
REACKC500M	Conductivity standard	500000	500

Conductivity standards according to the European Pharmacopoeia (Chapter 2)

Cat.No.	品名	Electrolytic Conductivity (μ S/cm) at 20°C	Resistivity	容量 (in mL)
REAEP1330	Conductivity standard	1330	752	500
REAEP133	Conductivity standard	133	7519	500
REAEP266	Conductivity standard	26.6	37594	500

FIRE RESEARCH

Surface Flammability(ASTM E 162-78)

SRM1002c	Hard Board - Surface flammability	Flame Spread Index, I = 203 Heat Evolution Factor, Q = 42.0	在庫切れ
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Cigarette Ignition Strength, Standard

SRM1082	Cigarette ignition strength standard		10 packs
	ignition Strength	ASTM-IP Method	Certified Value & Expanded Uncertainty
	(on 10 layers of filter paper)	E2187-04(a)	12.6 % \pm 3.3%

工学性能試験

Microindentation Hardness (block form)

Unit Size : 1.15cm x 1.15cm (unless otherwise noted)

Cat No.	品名	Load (Newtons)	Hardness, nominal (kgf/mm ²)
SRM1893	Bright Copper (Knoop)	0.245, 0.490, 0.981	125
SRM1894a	Bright Copper (Vickers)	0.245, 0.490, 0.981	125
SRM1895	Bright Nickel (Knoop)	0.245, 0.490, 0.981	600
SRM1896b	Bright Nickel (Vickers)	0.245, 0.490, 0.981	600
SRM1905	Bright Nickel (Knoop)	2.943	600
SRM1906	Bright Nickel (Knoop)	4.905	600
SRM1907	Bright Nickel (Knoop)	9.81	600
SRM1908	Bright Nickel (Vickers)	2.943	each
SRM1909	Bright Nickel (Vickers)	9.81	each
SRM2798a	Bright Nickel (Vickers)	4.905	600
SRM2830	Ceramic, Silicon Nitride (Knoop)	19.6	1500
SRM2831	Ceramic, Tungsten Carbide (Vickers)	9.8	1530

Mechanical properties

ERMI-FA013	Charpy specimens 30 J (bars)	Absorbed energy(KV)at 20 ± 2°C 30 J nominal	set 5
ERMI-FA014	Charpy specimens 60 J (bars)	Absorbed energy(KV)at 20 ± 2°C 60 J nominal	set 5
ERMI-FA015	Charpy specimens 80 J (bars)	Absorbed energy(KV)at 20 ± 2°C 80 J nominal	set 5
ERMI-FA016	Charpy specimens 120 J (bars)	Absorbed energy(KV)at 20 ± 2°C 120 J nominal	set 5
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ERMI-FA415	Charpy specimens 160 J (bars)	Absorbed energy(KV)at 20 ± 2°C 160 J nominal	set 5
SRM2092	Low-Energy (4340 Alloy Steel)	Energy Range (J) 13 to 20	set
SRM2096	Low-Energy Charpy (88-136J)	Energy Range (J) 88 to 136	set
SRM2097	High Energy Charpy (Self-Verification)	Energy and Expanded (-40°C± 1°C) 101.9	set
BCR425	Nimonic 75 Creep rate	Creep rate at 400h 72 x 10 ⁻⁶ /h time to 2% strain 278h time to 4% strain 557h	set 3
BCR661A	Nimonic 75 for ambient air tansile properties	0.2%proof stress R _{p0.2} 300 ± 7 Mpa 0.5%proof stress R _{p0.5} 318 ± 7 Mpa Tensile stress R _m 750 ± 13 Mpa Elongation at fracture /40.9 ± 0.9% Reduction in area at fracture Z 60± 4%	set 3
BCR661B	Nimonic 75 for ambient air tansile properties	0.2%proof stress R _{p0.3} 300 ± 7 Mpa 0.5%proof stress R _{p0.6} 318 ± 7 Mpa Tensile stress R _m 750 ± 13 Mpa Elongation at fracture /40.9 ± 0.9% Reduction in area at fracture Z 60± 4%	rod
BCR692	Scratch test reference material		coupons
SRM2100	Fracture Toughness of Ceramics:Silicon Nitride Flexure Specime	4.57MPa·m ^{1/2}	5bars

Rockwell Hardness

SRM2810	Rockwell C Scale Hardness (high Range)	Nominal Hardness(HRC) 25	each
SRM2811	Rockwell C Hardness, Mid Range	Nominal Hardness(HRC) 45	each
SRM2812	Rockwell C Scale Hardness (high Range)	Nominal Hardness(HRC) 62	each
RM8130	Coplaner waveguide calibration set		each
RM8458	Artificial flaw for eddy current nondestructive evaluation	Flaw size 3.0mmx0.1mm	7 x 7 x 2(cm)

SRM2816	Rockwell Hardness 15N Scale Low Range (Nominal 72 HR 15N)	Nominal Hardness	1 block
SRM2817	Rockwell Hardness 15N Scale Mid Range (Nominal 83 HR 15N)	Nominal Hardness	1 block
SRM2818	Rockwell Hardness 15N Scale,High Range (Nominal 91 HR 15N)	Nominal Hardness	1 block
SRM2819	Rockwell Hardness 30N Scale Low Range (Nominal 45 HR30N)	Nominal Hardness	1 block
SRM2820	Rockwell Hardness 30N Scale Mid Range (Nominal 64 HR30N)	Nominal Hardness	1 block
SRM2821	Rockwell Hardness 30N Scale High Range (Nominal 79 HR30N)	Nominal Hardness	1 block

Tape Adhesion Testing

SRM1810a	Lineboard – Tape adhesion testing (sheet form)	50 sheets : 21.6x28cm
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Bleached Kraft Pulp

Cat.No.	品名	規格
RM8495	Narthern Softwood	10 lap sheets : 0.5kg
RM8496	Eucalyptus Hardwoods	10 lap sheets : 0.5kg

Magnetic Moment Standard

SRM762	Magnetic moment standard- Nickle disk $\delta = 54.78\text{Am}^2/\text{kg} \pm 0.15\text{Am}^2/\text{kg}(54.78\text{emu}/\text{g} \pm 0.15\text{emu}/\text{g})$	6 ϕ x 0.13mm
SRM2853	Magnetic moment standard yttrium iron garnet sphere	sphere:1mm ϕ (2.8mg)
SRM772a	Nickel sphere for magnetic moment $m=3.47\text{mA}\cdot\text{m}^2 \pm 0.01\text{mA}\cdot\text{m}^2 (3.47\text{emu} \pm 0.01\text{emu})$	sphere:2.383mm ϕ

Secondary Ferrite Number(FN) Materials

Cat.No.	Ferrite Number	サイズ
RM8480	0 to 30	10 x 12 x 20 mm
RM8481	30 to 120	10 x 12 x 20 mm

ゴム(Rubber), その他**Standard reference elastomers (SRE) from vulcanized rubbers**

エラストマー(弾性体)

Cat. No.	品名	規格
BAM-E001	Rubber test sheet	for determination of abrasion resistance of vulcanized rubber according to DIN 53516 and ISO 4649-2002 reference compound No.1
BAM-E002	Abrasive paper sheet	according to DIN 53516 and ISO 4649-2002 ; Annex A
BAM-E003	Rubber test sheet	for determination of abrasion resistance of vulcanized rubber according to ISO 4649-2002 reference compound No.2
BAM-E004	Rubber sole sheet	for measuring the electrostatic charging of floor by a walking test
BAM-E005	Rubber base ring	for the portable tester for measuring the surface roughness of streets (Efflux meter according to MOORE)
BAM-E006 /BAM-E007	Rubber silinder	for the British portable for measuring the surface grip property of streets (skid resistance tester ; SRT) according to ASTM E 303-93 and for the friction measuring device for the determination of the PSV-value(polished stone value)
BAM-E008	Elastomer	DIN 53538 SRE-NBR 1/ISO 13226 SRE-NBR 28/PX designated for hydraulic area(valcanized with peroxide, low elongation at break)
BAM-E009	Elastomer	DIN 53538 SRE-NBR 28/ISO 13226 SRE-NBR 28/SX designated for automotive area(valcanized with thiurame, high elongation at break)
BAM-E010	Elastomer	DIN 53538 SRE-NBR 34/ISO 13226 SRE-NBR 34/SX designated for automotive area(valcanized with thiurame, high elongation at break)
BAM-E011	Elastomer	DIN 53538 SRE-HNBR 19/ISO 13226 SRE-HNBR 1X designated for hydraulic area(valcanized with peroxide)

BAM-E012	Elastomer	DIN 53538 SRE-ACM /ISO 13226 SRE-ACM / 1X designated for hydraulic and automotive area
BAM-E013	Elastomer	DIN 53538 SRE-MVQ /ISO 13226 SRE-VMQ /1x designated for hydraulic and automotive area (vulcanized with peroxide)
BAM-E014	Elastomer	ISO 13226 SRE-FKM/2x / ISO 6072 FKM2 designated for hydraulic and automotive area
BAM-E015	Elastomer	ISO 6072 NBR 1 designated for hydraulic and automotive area
BAM-E016	Elastomer	ISO 6072 NBR 2 designated for hydraulic and automotive area
BAM-E017	Elastomer	ISO 13226 SRE-NBR L designated for hydraulic and automotive area (vulcanized with thiurame, low content acrylonitrile)
BAM-E018	Elastomer	ISO 13226 SRE-NBR M designated for hydraulic and automotive area (vulcanized with thiurame, medium content acrylonitrile)
BAM-E019	Elastomer	ISO 6072 EPDM 1 designated for hydraulic and automotive area
BAM-E020	Elastomer	ISO 6072 HNBR 1 designated for hydraulic and automotive area

Rubber (ゴム) / 化合物

IRM021	Stearic Acid	ASTM D 11	1carton (800gx4)/3.2kg
	Local AR-value	Acid Number (D1980-91) +/- 3 σ =	194.36 +/- 0.38
	Secamdary Propary	Iodine Number (D 1959-58) +/- σ =	0.56 +/-0.29
		Heavy maetals(Co, Cu, Fe, Mn, Ni, Zn) Each less than	10ppm
	(The 3 σ limits are based on 15 DF; 1 limits are approximate, 3 DF)		

IRM031	Surfur	ASTM D 11	1carton (1500g x 4)/6kg
	Local AR-value	Oil content(D4573-95) +/- 3 σ =	7.85 +/- 0.56
	Secamdary Propary	Wet Sieve (D 4572-89) (% through #100) +/- 1 σ =	99.97+/-0.018
		Wet Sieve (D 4572-89) (% through #200) +/- 1 σ =	97.0+/-0.072
	(The 3 σ limits are based on 15 DF; 1 limits are approximate, 3 DF)		

IRM091	Zinc Oxide	ASTM D 11	500g
	AR-value,m ² /gm		4.30
	Test Lot-Limits,m ² /gm (in Production Lab)		+/-0.074
	Between Lab-Limits,m ² /gm (among Typical Labs)		+/-0.26
	<i>Supplementary Information</i>		
	ZnO : % (dry) = 99.9	Fe : (ppm) = 2	
	Pb : (ppm) = 16	Heat Loss / H ₂ O	
	Cd = 2	-325 : % =99.999	

IRM241 "F"	Butyl rubber	1bale (34kg)g				
Test	Within Typical Lab			Between Typical Labs		
	Sr	2 x Sr	3 x Sr	Sr	2 x Sr	3 x Sr
ML(1+4) @ 100°C	0.28	0.55	0.83	0.28	0.56	0.84
ML(1+8) @ 100°C	0.23	0.46	0.69	0.37	0.73	1.10
ML(1+4) @ 125°C	0.28	0.56	0.85	0.44	0.44	1.32
ML(1+8) @ 125°C	0.18	0.36	0.54	0.29	0.29	0.86

Chemical resistance (durability) of glass

Cat.No.	品名	Volume of 0.02NH ₂ SO ₄	容量
SRM622	Soda lime silica (durability)	7.67 mL	2.2kg
SRM623	Borosilicate glass (Durability)	0.343 mL	2.2kg

Multi-test verification materials (MTVMs)

SS99850-0		SETA MTVM kerosine(jet turbine fuel)	500mL
test Name	ASTM-IP Method	range	Amount/test
Distillation IBP	D86-IP123	140-180°C	100mL
Distillation 10%	D86-IP123	159-188°C	100mL
Distillation 50%	D86-IP123	192-218°C	100mL
Distillation 90%	D86-IP123	220-247°C	100mL
Distillation FBP	D86-IP123	244-268°C	100mL
Distillation residue	D86-IP123	1.1-1.35% vol	100mL
Distillation loss	D86-IP123	0.4-0.7% vol	100mL
Flashpoint	IP170	35-60°C	85mL
Freezing point	D2386-IP16	-62 to -44°C	25mL
Aromatics FIA	D1319-IP156	18.1-22.7% vol	0.75mL
Smoke point	D1322	22-25mm	20mL
Acid number	D3242-IP354	<0.100mgKOH/g	100mL
mercaptans	D32427-IP3422	0.0003to0.0100%(m/m)	40mL

SS99851-0		SETA MTVM Gas oil	500mL
test Name	ASTM-IP Method	range	Amount/test
Density at 15°C	D1298-IP160	0.83-0.854kg/L	200mL
Distillation IBP	D86-IP123	160-190°C	100mL
Distillation 10%	D86-IP123	200-242°C	100mL
Distillation 50%	D86-IP123	260-290°C	100mL
Distillation 90%	D86-IP123	320-350°C	100mL
Distillation 95%	D86-IP123	335-368°C	100mL
Distillation FBP	D86-IP123	350-385°C	100mL
Distillation residue	D86-IP123	1.25-1.42% vol	100mL
Distillation loss	D86-IP123	0.26-0.55% vol	100mL
Flashpoint	D93-IP34	56-80°C	75mL
Cloud point	D2500-IP219	-17 to -4°C	up to 38mL
CFPP	IP309	-30.0 to -0°C	45mL
Pour point	D97-IP15	-33 to -6°C	up to 38mL
Kin.Visc.(40°C)	D445-IP71	2.3-3.5mm ² /s	up to 40mL
Lubricity HFRR	D6079; IP450	271 to 512 μm	2mL
Water Karl Fischer	D1744; IP438	23.4 to 63.9mg/kg	5mL

SS99852-0		SETA MTVM Fuel oil	500mL
test Name	ASTM-IP Method	range	Amount/test
Density at 15°C	D1298-IP160	0.94-0.994kg/L	200mL
Pour point	D97-IP15	-14 to 17°C	up to 38mL
Kin.Visc.(50°C)	D445-IP71	150-1800mm ² /s	up to 500mL
Kin.Visc.(500°C)	D445-IP71	29-95mm ² /s	up to 500mL
Micro carbon	D4530; IP398	0.10 to 30.0%(m/m)	2mL
Flash point	D93(b); IP34(b)	92.3 to 121.6°C	75mL

SS99853-0		SETA MTVM lubricating oil	500mL
test Name	ASTM-IP Method	range	Amount/test
Kin.Visc.(40°C)	D445-IP71	70-160mm ² /s	up to 40mL
Kin.Visc.(100°C)	D445-IP71	10-19mm ² /s	up to 40mL
Viscosity Index	D2270-IP226	139 - 180	up to 80mL
Pour point	D97-IP15	-49.1 to 33.9°C	38mL
Flash point	D93- IP34	196 to 213°C	75mL
Cold cranking sim	D5293; IP383	3062-6896 mPa.s	5mL

SS99854-0	SETA MTVM motor gasoline		500mL
test Name	ASTM-IP Method	range	Amount/test
Motor octane no	D2700	83 - 90	
Research octane no	D1298-IP160	96 - 101	
Density at 15°C	D1298-IP160	0.71-0.763kg/L	200mL
Distillation IBP	D86-IP123	32.0-39.0°C	100mL
Distillation 70°C	D86-IP123	15-36% vol	100mL
Distillation 100°C	D86-IP123	36-58°C	100mL
Distillation 150°C	D86-IP123	75-90°C	100mL
Distillation FBP	D86-IP123	175-205°C	100mL
Aromatics FIA	D1319-IP156	19-42% vol	0.75mL
Olefins FIA	D1319-IP156	1.5-15% vol	0.75mL
Saturates	D1319-IP156	42-72% vol	0.75mL
Vapour Pressure	D5191; IP394	50 to 85kPa	3mL

Relative humidity

Cat.No.	品名	規格	容量
HM11	Relative humidity standard	Nominal humidity std.	11% unit
HM22	Relative humidity standard	Nominal humidity std.	22% unit
HM33	Relative humidity standard	Nominal humidity std.	33% unit
HM54	Relative humidity standard	Nominal humidity std.	54% unit
HM75	Relative humidity standard	Nominal humidity std.	75% unit
HM80	Relative humidity standard	Nominal humidity std.	80% unit
HM90	Relative humidity standard	Nominal humidity std.	90% unit

Miscellaneous

SRM953	Cobalt in aluminium - Neutron density monitor wire	Cobalt Composition(wt.) 0.116	0.5mmx1m
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