

# INTERGLAD ID Lists

## 1. ID List for Property Database

### State

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<b>Glass General</b>	G	Glass
	X	Glass-Ceramics
	C	Composite
	M	Modified
	T	Thin Film
<b>Melt</b>	F	
<b>Non-Vitrified</b>	N	
<b>Not Specified</b>	(Z)	

### Glass System

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<b>Oxide Glass</b>	01	Silica
	02	Alkali Silicate
	03	Alkaline-earth Silicate (include MgO)
	04	Lead-Silicate
	05	Boro-Silicate
	06	Alumino-Silicate
	07	Zinc-Silicate
	08	Fluoro-Silicate
	09	Other Silicate
	10	Borate
	20	Phosphate
	25	Fluoro-Phosphate
	27	Lead
	28	Tellurite
	30	Aluminate
	35	Germanate
	38	Oxynitride
	40	Other Oxide
<b>Other Glass</b>	50	Chalcogenide
	60	Fluoride
	70	Halide (Except Fluoride)
	80	Other Non-Oxide (Except Amorphous Metal)
	81	Amorphous Metal
	90	Others
	98	Non-Vitrified
	99	Unidentified

## Appearance, Feature, Process

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### Appearance

Shape	
Grain	011 Powder, Frit 012 Bead 013 Balloon 041 Flake
Linear	021 Fiber 022 Whisker 023 Rod 024 Tube 025 Hollow Fiber
Film, Coating	030 Film, Coating 031 Thin Film, Deposited 033 Thick Film 042 Enamel, Glaze 043 Lining
Flat	032 Film, Sheet 044 Flat Glass 045 Plate Glass 046 Sheet Glass 047 Disk
Other Shape	063 Block 064 Slab 090 Other Shape
Structure	210 Porous 211 Cellular 212 Nano Structure 324 Anisotropic 330 Graded Index 327 Inhomogeneity
Forming	061 Blown, Bottle, Bulb 220 Sintered 062 Pressed 221 Hot Pressed 222 Molded 223 Cast
Color, Transparency	310 Colored 321 Opal 322 Opaque 323 Translucent 325 Transparent 326 Yellowphase

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### Feature

Chemical	411 Water Resistant 412 Alkali Resistant 413 Acid Resistant 414 Water Soluble Glass 511 Non Alkali 512 Non Lead 514 Non Pb, As, Sb 513 Non Phosphate 521 Non Actinic (Non Radioactive) 522 Actinic (Radioactive) 531 Low Alkali 532 Mixed Alkali 611 Other Modified
Heat-treated	440 Strengthened (Tempered) 630 Ion Exchanged 621 Glass Ceramics 622 Phase Separated
Composite	640 Hybrid Material 710 Composite 711 Composite with Ceramics 712 Composite with Organic Material 713 Composite with Metal
Other Feature	631 Leached 650 Doped (Stuffed) 421 Low Melting 431 Hard Glass 441 Machinable 660 Photochromic 790 Ancient Glass

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### Process

801 Melting
810 Rapid Quenching
820 Micro Gravity
830 Sol-Gel
840 CVD
850 PVD
860 Natural Glass
870 Mechanical Milling
890 Other Process

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### Others

999 Others
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## Usage

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### General

001 General

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### Energy, Nuclear, Radiation

#### Energy

110 Energy  
111 Battery  
114 Fuel Cell  
112 Solar  
113 Solar Cell

#### Radiation

140 Radiation  
141 Radiation Shield  
142 Scintillator  
143 Cherenkov Counter  
144 High Energy Particle  
Detector

#### Nuclear

160 Nuclear  
161 Radio Active Waste  
Solidification

#### Radiation Dosimetry

170 Radiation Dosimetry

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### Optics, Optoelectronics

#### Optical Use

200 Optics, Optoelectronics  
205 Optical Use

#### Lens & Prism

210 Lens & Prism  
211 Ophthalmic Lens  
212 Molded Lens

#### Mirror

220 Mirror

#### Wavelength Selector

230 Wavelength Selector  
231 Color Filter  
232 Non-glare Filter  
233 IR-Transmitting Material  
234 UV-Transmitting Material  
235 IR-Absorbing Material  
236 UV-Absorbing Material

#### Laser

240 Laser

#### Optical Transmission

250 Optical Transmission

251 Optical Fiber  
252 Optical Waveguide  
253 Optical Connector  
254 Optical Isolator  
255 Optical Demulti-Multi Plexer  
256 Optical Divider  
257 Polarization Relat Fiber  
258 Fiber Bundle  
259 Fiber Array

#### Optical Information Processing

260 Optical Information Processing  
261 Optical Modulator  
262 Optical Switch

#### Optical Memory

270 Optical Memory  
271 Magneto-Optical Memory  
272 Erasable Optical Memory

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### Electronics, Electrical

300 Electronics, Electrical

#### Display

310 Display  
311 Cathode Ray Tube  
312 Plasma Display  
313 Liquid Crystal Display  
314 Electro Luminescence  
315 Vacuum Tube  
316 Video Camera

#### Solder Glass, Sealing Glass

320 Solder Glass, Sealing Glass  
321 Solder Glass for Semiconductor  
Passivation  
322 Solder Glass for Semiconductor  
Package  
323 Solder Glass for Magnetic Head  
324 Solder Glass for Cathode Ray Tube  
325 Solder Glass for Hermetic Seal

#### Substrate

330 Substrate  
331 Substrate for Photolithography Mask  
332 Substrate for Display

#### Ultrasonic Delay Line

340 Ultrasonic Delay Line

#### Microelectronics

350 Microelectronics

#### Electric Circuit

351 Electric Insulator  
352 Electric Capacitator  
353 Electric Resistor

	354	Electric Circuit, Circuit Board
	355	Electric Conductor
Semiconductor	360	Semiconductor
	365	IC, LSI
	366	IC Package
Dielectrics	370	Dielectrics
Sensor	375	Sensor
Magnetic Recording	390	Magnetic Recording Head
	391	Magnetic Memory Disk

Heat Exchanger

580 Heat Exchanger

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### Living, Consumer Products, Arts

600	Living, Consumer Products, Arts
601	Consumer Products
610	Container
611	Cooking Ware, Culinary
612	Table Ware
613	Sanitary Ware
614	Bottle
620	Stove
630	Sporting Goods
640	Art
641	Jewelry

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### Illumination

400	Illumination
410	Lamp
401	LED Illumination
411	Incandescent Lamp
412	Fluorescent Lamp
413	Halogen Lamp
414	Mercury Lamp
415	Sodium Lamp
416	Head Lamp
420	Shade
421	Reflector

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### Chemical, Biotechnology, Medical

	700	Chemical, Biotechnology, Medical
Chemical	710	Chemical
	711	Laboratory Ware
	712	Chemical Plant
	713	Ion Electrode, Glass Electrode
	714	Filtration
	715	Catalyst Carrier
	716	Gas Separation
Medical	720	Medical
	721	Artificial Bone
	728	Pharmacy
Dental	730	Dental
	731	Artificial Tooth
	732	Dental Crown
	733	Dental Cement
Biotechnology	740	Biotechnology
Sterilizer	745	Sterilizer
Agriculture	750	Agriculture

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### Architecture, Traffic, Industry

Architecture	500	Architecture, Traffic, Industry
	510	Window
	511	Wall
	512	Roof
	513	Thermal Insulator
	514	Reinforcement of Cement
	515	Tile
Traffic	540	Traffic
	541	Traffic Marker, Retroreflective Glass
	550	Vehicle Window
	551	Ship
	552	Airplane
Space	553	Space
Engine	560	Engine
Machinery	570	Machinery

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### Material

800	Material
805	Binder
806	Ceramic Binder
810	Metal
820	Lubricant

- 830 Coating
- 831 Coating on Ceramics
- 832 Coating on Metal
- 835 Painting
- 881 Chemical Strengthen
- 839 Glass-Ceramics
- 840 Composite
- 841 Filler
- 845 Fiber
- 850 Paper
- 860 Ceramics
- 870 Plastics, FRP
- 880 Waste Disposal
- 842 Photocatalyst
- 882 Cover Glass
- 883 Laminate Glass (Glass to Glass)

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## Others

- 900 Others
- 999 Not Specified

## Data Source

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### Book

(J): japanese language

- 101 Bansal N. P. and Dremus R. H., Handbook of Glass Properties, (Academic Press), 1986.
- 102 Mazurin O. V., et al., Handbook of Glass Data, (Elsevier), **A**, 1983; **B**, 1985; **C**, 1987; **D**, 1991; **E**, 1993.
- 103 Edited by Boyd D. C., MacDowell J. F., Commercial Glasses, (Am. Ceram. Soc.), 1986.
- 105 Volf M. B., Technical Glasses, (Sir Isaac Pitman and Sons), 1961.
- 106 Morey G. W., Properties of Glass, (Reinhold Publishing Corp.), 1954.
- 107 Varshneya A. K., Fundamentals of Inorganic Glasses, (Academic Press), 1994.
- 108 Edited by GMAJ, Data Book of Glass Composition, (Giho-do), 1991 (J)
- 109 Ed. by Stebbins F. J., et al., Structure, Dynamics and Properties of Silicate Melts, (Mineral. Soc. Amer.), 1995.
- 110 Frischat G. H., Ionic Diffusion in Oxide Glass, (Trans. Tech. Publications), 1975.
- 111 Mechanical Behavior of Materials, (Soc. Materials Science, Japan), 1972.
- 112 Manghnani M. H. & Akimoto S., High-Pressure Research: Applications in Geophysics, (Academic Press), 1977.
- 113 Edited by Timmerhaus K. D. and Barber M. S., High-Pressure Science and Technology, (Plenum Press).
- 114 Edited by Bickford D. F. et al., Advances in Fusion of Glass, ( Am. Ceram. Soc.), 1988.
- 115 Edited by Shelby J. E., Rare Elements in Glass, (Trans. Tech. Publications), 1994.
- 116 Edited by Seward III T. P., Vascot T., High Temperature Glass Melt Property Database for Process Modeling, (Am. Ceram. Soc.), 2005.
- 117 Edited by Fanderlik I., Vlastnosti Skel, (Informatorium, Praha), 1996.
- 121 Sakka S. et al., Glass Handbook, (Asakura Publishing) , 1975 (J)
- 122 Morinaga K. et al., Physical Properties of PbO-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> Glass Melts, 2000 (J)

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### Scientific Journal

( ): language or previous name

- |                                                          |                                                    |
|----------------------------------------------------------|----------------------------------------------------|
| 201 American Ceramic Soc. Bull.                          | 206 J. American Ceramic Soc.                       |
| 212 American Mineralogist                                | 275 J. Applied Crystallography                     |
| 223 Applied Optics                                       | 221 J. Applied Physics                             |
| 235 Applied Physics Letters                              | 282 J. Asian Ceramic Soc.                          |
| 255 Armyanskii Khimicheskii Zhurnal (R)                  | 232 J. Australian Ceramic Soc.                     |
| 270 Biomaterials                                         | 228 J. Canadian Ceramic Soc.                       |
| 280 Bull. Ceramic Soc. Japan (J)                         | 215 J. Chemical Physics                            |
| 248 Bull. Gov. Ind. Res. Osaka                           | 241 J. Ceramic Soc. Japan                          |
| 253 Bull. Inst. Chemical Res. Kyoto Univ.                | 246 J. Chemical Soc. Japan                         |
| 256 Bull. Materials Science                              | 259 J. Electrochemical Soc.                        |
| 234 Ceramic Industry                                     | 267 J. European Ceramic Soc.                       |
| 219 Ceramics - Silikaty                                  | 249 J. Japan Inst. Metals and Materials (J)        |
| 281 Chemical Physics Letters                             | 244 J. Japan Soc. Powder and Powder Metallurgy (J) |
| 254 Chemistry Express (J)                                | 271 J. Luminescence                                |
| 262 Chemistry Letters                                    | 279 J. Magnetic Resonance                          |
| 257 Contributions to Mineralogy and Petrology            | 216 J. Materials Research                          |
| 258 Geochim. Cosmochim. Acta                             | 226 J. Materials Science                           |
| 230 Glass                                                | 286 J. Materials Science & Technology              |
| 203 Glass & Ceramics (Glass & Ceramics-USSR)             | 227 J. Materials Science Letters                   |
| 233 Glass and Ceramics Bull.                             | 263 J. Mater. Sci.: Materials in Electronics       |
| 231 Glass Industry                                       | 284 J. Molecular Structure                         |
| 209 Glass Physics & Chemistry (Glass Phys. & Chem.-USSR) | 207 J. Non-Crystalline Solids                      |
| 204 Glass Technology                                     | 222 J. Optical Soc. America                        |
| 205 Glass Science and Technology (Glastech. Ber.)        | 217 J. Physics: Condensed Matter                   |
| 283 Int. J. Applied Glass Science                        | 272 J. Physical Chemistry B                        |
| 237 J. Alloys & Compounds                                | 285 J. Physical Chemistry C                        |

225 J. Physics and Chemistry of Solids  
 202 J. Res. National Bureau of Standards  
 242 J. Soc. Materials Science Japan (J)  
 211 J. Sol-Gel Science and Technology  
 220 J. Solid State Chemistry  
 245 Japanese J. Applied Physics  
 264 Keikinzo (J)  
 265 Kyudai-Kougakushuhou (J)  
 268 Materials Chemistry and Physics  
 214 Materials Res. Bull.  
 273 Materials Science Forum  
 243 Materials Science Res. International  
 278 Materials Transactions JIM  
 251 Molten Salt (J)  
 277 Nature  
 260 Neorganicheskie Materialy (R)  
 250 New Glass (J)  
 276 NSG Foundation Mater. Sci. Eng. Rep. (J)  
 240 Optical Letters  
 239 Optical Materials  
 247 Oyo Buturi (J)  
 274 Physica B  
 208 Physics and Chemistry of Glasses  
 224 Physical Review B  
 252 Rep. Inst. Ind. Sci. Univ. Tokyo (J)  
 261 Rev. Int. Hautes. Temp. Refract. (F)  
 218 Silikattechnik (G)  
 238 Solid State Communications  
 213 Solid State Ionics  
 266 Steklo Keram. (R)  
 229 Trans. Indian Ceramic Soc.  
 236 Thin Solid Film  
 210 Verres et Refractaires  
 269 Zeitschrift Naturforsch. A  
 299 Others

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**Proceedings, etc.** ( ): japanese language

302 Annual Meeting Ceramic Soc. Japan (J)  
 303 Fall Meeting Ceramic Soc. Japan (J)  
 323 NEDO Project Report of NGF (J)  
 322 NGF's Additional New Data (J)  
 324 Nikkiren Report of NGF (J)  
 301 Proc. ICG  
 304 Proc. Japan Cong. Materials Research (J)  
 305 Symp. Glasses and Photonic Materials (J)  
 399 Others

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**Patent**

4EP European Patent  
 4JA Japanese Patent  
 4US US Patent

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**Patent Company**

( ): nation, location or \*previous name  
 669 3B (BE)  
 583 3M (US)  
 663 AFO Research Inc. (US)  
 510 AGC (J) (Asahi Glass\*)  
 575 AGC Glass Europe (BE) (Glaverbel\*)  
 520 AGC Techno Glass (J) (Asahi Techno Glass\*<Iwaki Glass\*)  
 682 AGY Holding Corp. (US)  
 586 American Biomaterials (US)  
 562 Annaka Special Glass (J)  
 628 ANVAR (FR)  
 511 Asahi Fiber Glass (J)  
 617 Asahi Kasei Corp. (J) (Asahi Chemical Industry\*)  
 634 AT & T Bell Lab. (US)  
 638 Atlantic Richfield (US)  
 527 AvanStrate (J) (NH Techno Glass\*)  
 632 Battelle Memorial Inst. (US)  
 651 Bayer (DE)  
 639 British Telecom (GB)  
 512 Canon Inc. (J)  
 657 Carl Zeiss (DE)  
 672 CDGM Glass (CN)  
 513 Central Glass (J)  
 683 Chongqing Polycomp Int'l Corp. (CN)  
 627 Citizen Watch (J)  
 623 CNRS (FR)  
 542 CoorsTek (J) (Covalent Materials\*<Toshiba Ceramics\*)  
 571 Corning Inc. (US)  
 594 Covina-Co Vidreira Nac. (PT)  
 648 Degussa (DE)  
 572 Du Pont de Nemours (US)  
 641 English Electric (GB)  
 629 Ernst Leitz Wetzlar (DE)  
 573 ESL (US)  
 655 Eurinval Industrie (IT)  
 671 Eurokera (FR)  
 537 FDK (J)  
 646 Ferro Corp. (US)  
 659 Ferro GmbH (DE)  
 595 Flachglas (DE)  
 678 Fraunhofer-G. (DE)  
 622 Fuji Electric (J)  
 601 Fujifilm Corp. (J) (Fuji Photo Film)  
 515 Fujikura (J) (Fujikura Cable Works\*)  
 605 Fujitsu (J)  
 516 Furukawa Electric (J)  
 696 GC Corp. (J)  
 591 GEC ALSTHOM (GB)  
 574 General Electric (US)  
 674 Gerresheimer Pisa S.P.A. (IT)  
 662 Glass Inc. (US)  
 673 Guardian Industries Corp. (US)

670 Hamamatsu Photonics (J)  
 535 HARIO (J) (Shibata Glass\* < Shibata Hario Glass\*)  
 588 Hankuk Glass Industries (KR)  
 680 Heraeus Precious Metals North America (US)  
 660 Heraeus Quarzglas (DE)  
 609 Hitachi (J)  
 517 Hitachi Cable (J)  
 675 Hitachi Chemical (J)  
 625 Hitachi Metals (J)  
 681 Hitachi Powdered Metals\* (J)  
 518 Hoya Corp. (J)  
 589 IBM Corp. (US)  
 549 Idemitsu Kosan (J)  
 658 Ikebukuro Horo Kogyo (J)  
 647 Int'l Std. Electric (US)  
 519 Ishizuka Glass (J)  
 554 Isuzu Seiko (J)  
 620 ITT Corp. (US) (ITT Industries\*)  
 661 Ivoclar Vivadent AG (LI)  
 626 Iwasaki Electric (J)  
 636 Japan Fillite (J)  
 585 Johns Manville (US)  
 704 Johnson Matthey (GB)  
 702 Jushi Group (CN)  
 604 Kanebo (J)  
 568 Kanto Horo Yuyaku (J)  
 621 KDD (J)  
 692 KCC Corp. (KR)  
 548 Kinmon Manufacturing (J)  
 697 Koa Glass (J)  
 606 Kobe Steel (J)  
 539 Kodak (US)  
 523 Konica Minolta (J) (Minolta Camera\*)  
 693 Korea Inst. Sci. and Tech. (KIST) (KR)  
 633 Kyocera (J)  
 649 Le Verre Fluore (FR)  
 691 LG Chem (KR)  
 677 LG Electronics Inc. (KR)  
 584 Libbey Owens Ford (US)  
 654 Mashpriborintorg (SU)  
 521 Matsunami Glass (J)  
 611 Matsushita Electric Works\* (J)  
 565 Mitsubishi Cable Industries (J)  
 608 Mitsubishi Electric (J)  
 546 Mitsubishi Materials (J)  
 557 Mitsui Mining (J)  
 505 Miyazaki Pref. (J)  
 550 Murata Manufacturing (J)  
 560 Narumi China Corp. (J)  
 500 Nat. Inst. Advanced Ind. Sci. & Tech. (AIST) (J)  
 (Agency of Ind. Sci. & Tech.\*)  
 502 Nat. Insti. Mat. Sci. (J) (Nat. Insti. Res. Inorg. Mat.\*)  
 656 Nat. Inst. Standards and Technology (US)  
 615 NEC Corp. (J) (Nippon Electric\*)  
 689 NEC TOKIN Corp. (J)  
 559 NGK Insulators (J)  
 614 NGK Spark Plug (J)  
 694 NICHIAS Corp. (J)  
 569 Nihon Klingage (J)  
 545 Nihon Yamamura Glass (J) (Yamamura Glass\*)  
 528 Nikon Corp (J)  
 564 Nippon Amorphous Metals (J)  
 524 Nippon Electric Glass (J)  
 553 Nippon Frit (J)  
 529 Nippon Sheet Glass (J)  
 686 Nippon Steel & Sumitomo Metal Corp. (J)  
 547 Nitto Boseki (J)  
 525 Nitto Chemical Industry (J)  
 695 Noritake (J)  
 610 NTT (J)  
 676 Ocean's King Lighting Sci & Tech (CN)  
 684 OCV Intellectual Capital (US)  
 531 Ohara Inc. (J)  
 650 Ohara Quarz (J) (Sumikin Ceramics & Quarz\*)  
 596 OI-NEG TV Products (US)  
 534 Okamoto Glass (J)  
 551 Okuno Chemical Industries (J)  
 631 Olin (US)  
 532 Olympus Optical (J)  
 563 Ota Glass (J)  
 576 Owens Corning (US) (Owens-Corning Fiber G.\*)  
 577 Owens Illinois Inc. (US)  
 593 Owens Illinois (Kimble) (US)  
 522 Panasonic Corp. (J) (Matsushita Electric Industrial\*)  
 668 Pemco Brugge BVBA (BE)  
 644 Pfizer Hospital Products (US)  
 578 Philips (NL)  
 567 Photon Ceramics (J)  
 579 Pilkington\* (GB)  
 643 Post Office (GB)  
 580 PPG Industries (US)  
 503 Res. Dev. Corp. Japan (JRDC)\* (J)  
 699 Rockwool International (DK)  
 582 Saint-Gobain (FR)  
 618 Sanyo Electric\* (J)  
 581 Schott AG (DE) (Schott Glaswerke\*)  
 653 Schott Glas\* (Jena) (DE)  
 590 Schott Corp. (US) (Schott Glass Tech.\*)  
 613 Seiko Epson (J) (Suwa Seikosya\*)  
 506 Shiga Pref. (J)  
 703 Shimadzu Corp. (J)  
 612 Shin-Etsu Chemical (J)  
 558 Shin-Etsu Quartz Products (J)  
 698 SHOEI CHEMICAL Inc. (J)  
 624 Sony Corp. (J)  
 640 Std. Telephones & Cables Pub.\* (GB)  
 540 Sumita Optical Glass (J)  
 541 Sumitomo Electric Industries (J)  
 619 Sumitomo Metal Mining (J)  
 607 Sumitomo Special Metals\* (J)



- 667 Samsung Mobile Display (KR)  
538 SWCC Showa (J) (Showa Elec. Wire & Cable\*)  
687 Takara Standard (J)  
637 Tatsumori (J)  
616 TDK Corp. (J) (TDK Electronics\*)  
700 Tohoku Univ. (J)  
552 Tokan Material Technology (J) (Nippon Ferro\*)  
666 Tokyo Denshi Zairyo (J)  
508 Tokyo Inst. of Technology (J)  
701 Tokyo Univ. of Science (J)  
679 Toray Industries Inc. (J)  
602 Toshiba Corp. (J)  
603 Toshiba Kasei\* (J)  
690 Tosoh Corp. (J)  
530 Tosoh Quartz (J) (Nippon Sekiei Glass\*)  
566 Tosoh Silica Corp. (J) (Nippon Silica Industries\*)  
685 TOTO (J)  
536 Toyo Glass (J)  
533 Toyo-Sasaki Glass (J) (Sasaki Glass\*)  
665 Toyota Motor Corp. (J)  
597 U.S. Philips (US)  
664 Ube Industries (J)  
556 Union (J)  
555 Unitika (J)  
501 Univ. of Kyoto (J)  
635 Univ. of Rochester (US)  
504 Univ. of Saitama (J)  
642 Univ. of Stratchelyde (GB)  
507 Univ. of Tokyo (J)  
630 USA Gov. (US)  
592 VIOX Corp. (US)  
652 WC Heraeus (DE)  
645 Westinghouse Electric\* (US)  
587 Xomed Inc. (US)  
688 Yamamura Photonics (J)  
800 Others
- 562 Annaka Special Glass (J)  
511 Asahi Fiber Glass (J)  
513 Central Glass (J)  
542 CoorsTek (J) (Covalent Materials\*<Toshiba Ceramics\*)  
571 Corning Inc. (US)  
594 Covina-Co. Vidreira Nac. (PT)  
655 Eurinval Industrie (IT)  
659 Ferro GmbH (DE)  
595 Flachglas (DE)  
515 Fujikura (J) (Fujikura Cable Works\*)  
516 Furukawa Electric (J)  
591 GEC ALSTHOM (GB)  
574 General Electric (US)  
588 Hankuk Glass Industries (KR)  
535 HARIO (J) (Shibata Glass\*<Shibata Hario Glass\*)  
517 Hitachi Cable (J)  
518 Hoya Corp. (J)  
549 Idemitsu Kosan (J)  
658 Ikebukuro Horo Kogyo (J)  
519 Ishizuka Glass (J)  
554 Isuzu Seiko (J)  
661 Ivoclar Vivadent AG (LI)  
636 Japan Fillite (J)  
568 Kanto Horo Yuyaku (J)  
606 Kobe Steel (J)  
523 Konica Minolta (J) (Minolta Camera\*)  
584 Libbey Owens Ford (US)  
654 Mashpriborintorg (SU)  
521 Matsunami Glass (J)  
565 Mitsubishi Cable Industries (J)  
546 Mitsubishi Materials (J)  
557 Mitsui Mining (J)  
560 Narumi China Corp. (J)  
656 Nat. Inst. Standards and Technology (US)  
559 NGK Insulators (J)  
569 Nihon Klingage (J)  
545 Nihon Yamamura Glass (J) (Yamamura Glass\*)  
528 Nikon Corp. (J)  
564 Nippon Amorphous Metals (J)  
524 Nippon Electric Glass (J)  
553 Nippon Frit (J)  
529 Nippon Sheet Glass (J)  
547 Nitto Boseki (J)  
525 Nitto Chemical Industry (J)  
531 Ohara Inc. (J)  
650 Ohara Quarz (J) (Sumikin Ceramics & Quarz\*)  
596 OI-NEG TV Products (US)  
534 Okamoto Glass (J)  
551 Okuno Chemical Industries (J)  
563 Ota Glass (J)  
576 Owens Corning (US) (Owens-Corning Fiber G.\*)  
593 Owens Illinois (Kimble) (US)  
578 Philips (NL)  
567 Photon Ceramics (J)  
579 Pilkington (GB)
- 
- Company Catalogue**  
( ): nation, location or \*previous name
- 583 3M (US)  
510 AGC (J) (Asahi Glass\*)  
575 AGC Glass Europe (BE) (Glaverbel\*)  
520 AGC Techno Glass (J)  
(Asahi Techno Glass\*<Iwaki Glass\*)  
586 American Biomaterials (US)

580 PPG Industries (US)  
582 Saint-Gobain (FR)  
581 Schott AG (DE) (Schott Glaswerke)  
653 Schott Glas (Jena) (DE)  
558 Shin-Etsu Quartz Products (J)  
540 Sumita Optical Glass (J)  
541 Sumitomo Electric Industries (J)  
538 SWCC Showa (J) (Showa Elec. Wire & Cable\*)  
637 Tatsumori (J)  
552 Tokan Material Technology (J) (Nippon Ferro\*)  
543 Toshiba Glass\* (J)  
530 Tosoh Quartz (J) (Nippon Sekiei Glass\*)  
566 Tosoh Silica Corp. (J) (Nippon Silica Industries\*)  
556 Union (J)  
555 Unitika (J)  
592 VIOX Corp. (US)  
800 Others

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## User Data

900 User Data

## Composition

Category	ID	Component	Category	ID	Component	Category	ID	Component
<b>Oxide</b>				062	Co2O3		001	SiO2
<hr/>				051	Cr2O3		077	SnO2
Main Oxide	002	B2O3		115	Dy2O3		094	SO2
	074	GeO2		117	Er2O3		079	TeO2
	081	P2O5		112	Eu2O3		130	ThO2
	001	SiO2		052	Fe2O3		071	TiO2
	079	TeO2		053	Ga2O3		132	UO2
<hr/>				060	Gd2O3		085	V2O4
M(1+)Oxide	023	Ag2O		116	Ho2O3		075	ZrO2
	024	Cs2O		056	In2O3	<hr/>		
	021	Cu2O		058	La2O3	M(5+)Oxide	067	As2O5
	102	D2O		120	Lu2O3		086	Mo2O5
	101	H2O		125	Mn2O3		105	N2O5
	026	Hg2O		090	Nb2O3		083	Nb2O5
	009	K2O		059	Nd2O3		081	P2O5
	007	Li2O		138	Ni2O3		185	R2O5
	008	Na2O		110	Pm2O3		I85	<b>R2O5</b>
	103	OH		121	Pr2O3		065	Sb2O5
	181	R2O		183	R2O3		084	Ta2O5
	I81	<b>R2O</b>		183	<b>R2O3</b>		082	V2O5
	022	Rb2O		106	Rb2O3	<hr/>		
	025	Tl2O		107	Re2O3	M(6+)Oxide	126	CrO3
<hr/>				191	RE2O3		092	MoO3
M(2+)Oxide	043	AgO		I91	<b>RE2O3</b>		186	RO3
	044	AmO		175	Rh2O3		I86	<b>RO3</b>
	006	BaO		108	Ru2O3		091	SO3
	031	BeO		057	Sb2O3		143	TcO3
	005	CaO		063	Sc2O3		144	TeO3
	039	CdO		111	Sm2O3		136	UO3
	034	CoO		109	Ta2O3		093	WO3
	036	CuO		114	Tb2O3	<hr/>		
	127	EuO		129	Tc2O3	M(7+)Oxide	145	Re2O7
	033	FeO		137	Ti2O3		177	Tc2O7
	041	HgO		118	Tm2O3	<hr/>		
	004	MgO		131	U2O3	M(2+)M(3+) Oxide		
	032	MnO		087	V2O3		064	Co3O4
	035	NiO		055	Y2O3		069	Fe3O4
	040	PbO		119	Yb2O3		068	Mn3O4
	122	PdO					070	Pb3O4
	182	RO	M(4+)Oxide	133	AmO2	<hr/>		
	I82	<b>RO</b>		192	AnO2	M(3+)M(4+) Oxide		
	045	RhO		I92	<b>AnO2</b>		123	Pr6O11
	042	SnO		076	CeO2		146	Tb4O7
	038	SrO		139	CmO2	<hr/>		
	046	TeO		073	CoO2	M(4+)M(6+) Oxide		
	920	TiO		074	GeO2		135	U3O8
	037	ZnO		089	HfO2	<hr/>		
<hr/>				072	MnO2			
M(3+)Oxide	047	Ag2O3		128	MoO2			
	003	Al2O3		176	NpO2			
	173	Am2O3		416	PbO2			
	054	As2O3		124	PrO2			
	002	B2O3		134	PuO2			
	061	Bi2O3		193	ReO2			
	066	Ce2O3		184	RO2			
	174	Cm2O3		I84	<b>RO2</b>			
				080	RuO2			
				078	SeO2			

Category ID Component

**Fluoride**

394 AgF  
222 AlF3  
211 BaF2  
250 BaFCl  
207 BeF2  
393 BF3  
225 BiF3  
209 CaF2  
216 CdF2  
227 CeF3  
241 CoF2  
221 CrF3  
205 CsF  
214 CuF2  
239 DyF3  
397 ErF3  
249 EuF3  
213 FeF2  
242 FeF3  
223 GaF3  
229 GdF3  
234 HfF4  
391 HgF2  
240 HoF3  
224 InF3  
203 KF  
238 KHF2  
226 LaF3  
201 LiF  
231 LuF3  
208 MgF2  
212 MnF2  
202 NaF  
399 NbF5  
228 NdF3  
402 NbO2F  
246 NiF2  
218 PbF2  
418 PdF2  
392 PF5  
398 PrF3  
204 RbF  
244 SbF3  
219 ScF3  
237 SiF4  
245 SmF3  
217 SnF2  
210 SrF2  
297 SrFCl  
401 TaO2F  
248 TbF3  
235 ThF4  
887 TiF3  
232 TiF4  
395 TiOF2  
206 TlF  
396 TmF3  
247 UF4  
236 VF3

Category ID Component

**Chloride**

243 VF4  
230 YbF3  
220 YF3  
215 ZnF2  
233 ZrF4  
  
286 AgCl  
272 AlCl3  
261 BaCl2  
257 BeCl2  
275 BiCl3  
259 CaCl2  
288 CCl4  
266 CdCl2  
277 CeCl3  
417 CoCl2  
271 CrCl3  
255 CsCl  
287 CuCl  
264 CuCl2  
293 ErCl3  
263 FeCl2  
273 GaCl3  
279 GdCl3  
284 HfCl4  
415 HgCl2  
298 HoCl3  
274 InCl3  
253 KCl  
276 LaCl3  
251 LiCl  
281 LuCl3  
258 MgCl2  
262 MnCl2  
252 NaCl  
278 NdCl3  
268 PbCl2  
292 PrCl3  
254 RbCl  
294 SbCl3  
269 ScCl3  
267 SnCl2  
289 SOCl2  
260 SrCl2  
290 TbCl3  
295 TeCl4  
285 ThCl4  
282 TiCl4  
256 TiCl  
291 VCl3  
296 WCl6  
280 YbCl3  
270 YCl3  
265 ZnCl2  
283 ZrCl4

Category ID Component

**Bromide**

336 AgBr  
322 AlBr3  
311 BaBr2  
307 BeBr2  
325 BiBr3  
309 CaBr2  
316 CdBr2  
327 CeBr3  
321 CrBr3  
305 CsBr  
337 CuBr  
314 CuBr2  
338 ErBr3  
313 FeBr2  
323 GaBr3  
329 GdBr3  
334 HfBr4  
339 HgBr2  
324 InBr3  
303 KBr  
326 LaBr3  
301 LiBr  
331 LuBr3  
308 MgBr2  
312 MnBr2  
302 NaBr  
328 NdBr3  
299 NiBr2  
318 PbBr2  
304 RbBr  
319 ScBr3  
317 SnBr2  
310 SrBr2  
335 ThBr4  
332 TiBr4  
306 TlBr  
330 YbBr3  
320 YBr3  
315 ZnBr2  
333 ZrBr4

**Iodide**

386 AgI  
372 AlI3  
361 BaI2  
357 BeI2  
375 BiI3  
359 CaI2  
366 CdI2  
377 CeI3  
371 CrI3  
355 CsI  
387 CuI  
364 CuI2  
388 ErI3  
363 FeI2





Category	ID	Component
	932	Ca <sub>3</sub> N <sub>2</sub>
	925	CaO·SiO <sub>2</sub>
	755	CaZrO <sub>3</sub>
	941	CeB <sub>6</sub>
	923	Clay
	889	Filler Glass
	942	LaB <sub>6</sub>
	907	Li <sub>2</sub> O·Al <sub>2</sub> O <sub>3</sub> ·2SiO <sub>2</sub>
	900	Matrix Glass
	929	Mg <sub>3</sub> N <sub>2</sub>
	904	MgO·SiO <sub>2</sub>
	943	Mg <sub>2</sub> Si
	919	Mica
	944	MoSi <sub>2</sub>
	945	NbB <sub>2</sub>
	906	Organic Compound
	910	PbO·TiO <sub>2</sub>
	917	PbRh <sub>7</sub> O <sub>15</sub>
	913	Pigment
	931	SiAlON
	902	SiC
	940	Silicide
	924	Spinel
	756	SrZrO <sub>3</sub>
	947	TaSi <sub>2</sub>
	918	Teniolite
	948	TiB <sub>2</sub>
	915	Ti <sub>3</sub> B <sub>4</sub>
	927	TiN
	949	VB <sub>2</sub>
	946	YAG
	928	Zeolite
	926	ZrB <sub>2</sub>
	905	ZrO <sub>2</sub> ·SiO <sub>2</sub>
	999	Others

The above listed items are materials only for fillers. The user can select all the components as fillers except items of Substrate, Crystal and Sol-Gel Material in INTERGLAD system.

### Substrate

Glass	ID	Component
	980	Alkali Silicate
	981	Non-alkali Silicate
	982	Silica Glass
	983	Other Glass

Single Crystal	ID	Component
	984	Silicon Crystal
	985	Other Crystal

Others	ID	Component
	986	Ceramic
	987	Metal
	988	Plastic
	999	Others

ID	Crystal	Component
<b>Crystal</b>		
003	Al <sub>2</sub> O <sub>3</sub>	
421	Albite	NaAlSi <sub>3</sub> O <sub>8</sub>
422	Anorthite	CaAl <sub>2</sub> Si <sub>2</sub> O <sub>8</sub>
423	Apatite	Al <sub>10</sub> (MO <sub>4</sub> ) <sub>6</sub> X <sub>2</sub> ex) A: Ca, M: P, X: OH, F
424	Aragonite	CaCO <sub>3</sub>
425	Baddeleyite	monoclinic ZrO <sub>2</sub>
462	BaZr <sub>2</sub> F <sub>10</sub>	
463	BaZrF <sub>6</sub>	
426	Canasite	
427	Ca-Orthophosphate	Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>
428	Carnegieite	NaAlSiO <sub>4</sub>
429	Celsian	BaAl <sub>2</sub> Si <sub>2</sub> O <sub>8</sub>
430	Cordierite	2MgO·2Al <sub>2</sub> O <sub>3</sub> ·5SiO <sub>2</sub>
431	Corundum	αAl <sub>2</sub> O <sub>3</sub>
460	Cristobalite	SiO <sub>2</sub>
432	Devitrite	
433	Diopside	CaMg(SiO <sub>3</sub> ) <sub>2</sub>
434	Enstatite	MgO·SiO <sub>2</sub>
435	Eucryptite	Li <sub>2</sub> O·Al <sub>2</sub> O <sub>3</sub> ·2SiO <sub>2</sub>
436	Hematite	Fe <sub>2</sub> O <sub>3</sub>
437	Feldspar	K-Na-Ca-Al-Si-O
438	Fluoramphibole	
439	Fluoromica	
440	Fluorophlogopite	
441	Fluorrichterite	
442	Forsterite	Mg <sub>2</sub> SiO <sub>4</sub>
475	(Ba, Sr)-Ti-Silicate	
443	Gehlenite	Ca <sub>2</sub> Al <sub>2</sub> Si <sub>2</sub> O <sub>7</sub>
444	Gahnite	ZnAl <sub>2</sub> O <sub>4</sub>
445	Keatite	
446	Lepidolite	K-(LiAl)-(Si,Al)-O-(F,OH)
476	Leucite	KAlSi <sub>2</sub> O <sub>6</sub>
447	Li-Disilicate	Li <sub>2</sub> Si <sub>2</sub> O <sub>5</sub>
477	Li-Phosphate	Li <sub>3</sub> PO <sub>4</sub>
474	Li-Metasilicate	Li <sub>2</sub> SiO <sub>3</sub>
448	Magnetite	
900	Matrix Glass	
449	Mg-Titanate	
470	Mica	
471	Monazite (Cryptolite)	M(PO <sub>4</sub> )
450	Mullite	3Al <sub>2</sub> O <sub>3</sub> ·2SiO <sub>2</sub>
451	Nepheline	NaAlSiO <sub>4</sub>
478	Niobate	
473	Osumilite	BaO·2MgO·3Al <sub>2</sub> O <sub>3</sub> ·9SiO <sub>2</sub>
452	Pollucite	(Cs,Na) <sub>2</sub> Al <sub>2</sub> Si <sub>4</sub> O <sub>12</sub> ·H <sub>2</sub> O
461	Quartz	SiO <sub>2</sub>
464	β-Quartz	SiO <sub>2</sub>
453	Richterite	(Na,K) <sub>2</sub> (Mg,Mn,Ca) <sub>6</sub> Si <sub>8</sub> O <sub>22</sub> ·(OH) <sub>2</sub>
454	Rutile	TiO <sub>2</sub>
465	Silicon nitride	Si <sub>3</sub> N <sub>4</sub>
001	SiO <sub>2</sub>	
455	Sphene	CaTiSiO <sub>5</sub>
456	Spinel	MR <sub>2</sub> O <sub>4</sub> ex)MgAl <sub>2</sub> O <sub>4</sub>
466	Spodumene	Li <sub>2</sub> O·Al <sub>2</sub> O <sub>3</sub> ·4SiO <sub>2</sub>
479	Titanate	
467	Tricalcium phosphate	Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>3</sub>
457	Tridymite	SiO <sub>2</sub>
469	VOPO <sub>4</sub>	

ID	Crystal	Component
458	Willemite	2ZnO•SiO <sub>2</sub>
468	Wollastonite	CaSiO <sub>3</sub>
946	YAG	
472	Zirconia	ZrO <sub>2</sub>
459	Zn-Petallite	ZnO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub>
999	Others	

Category	ID	Component
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### Sol-Gel Material

#### Material

Si	611	Si(OCH <sub>3</sub> ) <sub>4</sub>
4-functional	612	Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>
	613	Si(O-n-C <sub>3</sub> H <sub>7</sub> ) <sub>4</sub>
	614	Si(O-n-C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub>
	615	HSi(OCH <sub>3</sub> ) <sub>3</sub>
Si	616	CH <sub>3</sub> Si(OCH <sub>3</sub> ) <sub>3</sub>
3-functional, methoxy	617	C <sub>2</sub> H <sub>5</sub> Si(OCH <sub>3</sub> ) <sub>3</sub>
	618	CH <sub>2</sub> =CHSi(OCH <sub>3</sub> ) <sub>3</sub>
	619	C <sub>6</sub> H <sub>5</sub> Si(OCH <sub>3</sub> ) <sub>3</sub>
	620	CH <sub>2</sub> =C(CH <sub>3</sub> )COOC <sub>3</sub> H <sub>6</sub> Si(OCH <sub>3</sub> ) <sub>3</sub>
	621	CH <sub>2</sub> OCHCH <sub>2</sub> OC <sub>2</sub> H <sub>6</sub> Si(OCH <sub>3</sub> ) <sub>3</sub>
	622	3-amionpropyltrimethoxsilane
Si	623	CH <sub>3</sub> Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>
3-functional, ethoxy	624	C <sub>2</sub> H <sub>5</sub> Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>
	625	CH <sub>2</sub> =CHSi(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>
	626	C <sub>6</sub> H <sub>5</sub> Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>
	627	3-amionpropyltriethoxysilane
Si	628	(CH <sub>3</sub> ) <sub>2</sub> Si(OC <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>
2-functional		
B	629	B(OCH <sub>3</sub> ) <sub>3</sub>
	630	B(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>
	631	B(O-n-C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub>
	632	H <sub>3</sub> BO <sub>3</sub>
Al	633	Al(O-i-C <sub>3</sub> H <sub>7</sub> ) <sub>3</sub>
	634	Al(O-sec-C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub>
	635	Al(NO <sub>3</sub> ) <sub>3</sub>
P	636	H <sub>3</sub> PO <sub>4</sub>
	711	PO(OCH <sub>3</sub> ) <sub>3</sub>
	637	PO(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>
Ge	638	Ge(OC <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>
	639	GeCl <sub>4</sub>
	640	Ge(O-i-C <sub>3</sub> H <sub>7</sub> ) <sub>4</sub>
Ti	641	Ti(OC <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>
	642	Ti(O-i-C <sub>3</sub> H <sub>7</sub> ) <sub>4</sub>
	643	Ti(O-n-C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub>
	644	Ti(O-i-C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub>
	645	Ti(O-sec-C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub>
V	646	VO(O-i-C <sub>3</sub> H <sub>7</sub> ) <sub>3</sub>
Mn	647	Mn(CH <sub>3</sub> COO) <sub>2</sub> ·2H <sub>2</sub> O
Zr	648	Zr(O-n-C <sub>3</sub> H <sub>7</sub> ) <sub>4</sub>
	649	Zr(O-n-C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub>
	650	ZrOCl <sub>2</sub>
	651	ZrO(NO <sub>3</sub> ) <sub>2</sub> ·2H <sub>2</sub> O
Nb	652	Nb(OC <sub>2</sub> H <sub>5</sub> ) <sub>5</sub>
Ta	653	Ta(OC <sub>2</sub> H <sub>5</sub> ) <sub>5</sub>
Li	654	LiOCH <sub>3</sub>
	655	LiOC <sub>2</sub> H <sub>5</sub>

Category	ID	Component
	656	CH <sub>3</sub> COOLi
Na	657	NaOCH <sub>3</sub>
	712	NaOC <sub>2</sub> H <sub>5</sub>
	658	CH <sub>3</sub> COONa
Mg	659	Mg(OC <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>
	660	Mg(CH <sub>3</sub> COO) <sub>2</sub>
Ca	661	Ca(O-i-C <sub>3</sub> H <sub>7</sub> ) <sub>2</sub>
Sr	662	Sr- 2-ethylhexanoate
Ba	663	Ba(OC <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>
	664	Ba metal
	665	Ba(CH <sub>3</sub> COO) <sub>2</sub>
Bi	666	Bi-2-ethylhexanoate
Pb	667	Pb(CH <sub>3</sub> COO) <sub>2</sub> ·3H <sub>2</sub> O
	668	Pb(OC <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>

#### Solvent

Alcohol	669	CH <sub>3</sub> OH
	670	C <sub>2</sub> H <sub>5</sub> OH
	671	n-C <sub>3</sub> H <sub>7</sub> OH
	672	i-C <sub>3</sub> H <sub>7</sub> OH
	673	n-C <sub>4</sub> H <sub>9</sub> OH
	674	2-CH <sub>3</sub> OCH <sub>2</sub> OH
	675	2-CH <sub>3</sub> OC <sub>2</sub> H <sub>4</sub> OH
	676	2-C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>4</sub> OH
	677	Diacetone alcohol
	678	Ethylene glycol
	679	1,3-propandiol
	680	1,3-butanediol
	681	1,4-butanediol
Others	682	Tetrahydrofuran
	683	Dioxane
	684	Dimethylformamide
	685	Formamide
	686	Acetonitrile
	687	H <sub>2</sub> O

#### Catalyst

Acid	688	HCl
	689	HNO <sub>3</sub>
	690	CH <sub>3</sub> COOH
	691	H <sub>2</sub> SO <sub>4</sub>
	692	HF
Base	693	NH <sub>4</sub> OH
Base	694	NaOH

#### Additive

695	Polyvinyl alcohol
696	Polyethylene glycol
697	Polyethylene oxide
698	Poly acrylic acid
699	Polyvinylpyrrolidone
700	Acetylacetone
701	Ethylacetoacetate
702	Monoethanolamine
703	Diethanolamine
704	Triethanolamine
705	Hydrogen peroxide
706	Methacrylic acid



Category	ID	Component
	707	Dimethylformamide
	708	Dimethylacetamide
	709	Formamide
	710	Glycerol

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**Others**

999 Others

Category	ID	Component
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# Property

## (1) Mechanical, Physical

Category	ID	Property	Common	SI	CGS	PSI
<b>Density, Porosity</b>						
	0301	Pore Size	nm	m	nm	nm
	0302	Pore Volume	cm <sup>3</sup> /g	m <sup>3</sup> /kg	cm <sup>3</sup> /g	cm <sup>3</sup> /g
	0303	Specific Surface Area	m <sup>2</sup> /g	m <sup>2</sup> /kg	m <sup>2</sup> /g	m <sup>2</sup> /g
	0304	Porosity	%	—	—	—
	0015	Molar Volume at RT	cm <sup>3</sup> /mol	m <sup>3</sup> /mol	cm <sup>3</sup> /mol	m <sup>3</sup> /mol
	0016	Molar Volume at XT	cm <sup>3</sup> /mol	m <sup>3</sup> /mol	cm <sup>3</sup> /mol	m <sup>3</sup> /mol
<b>[Density]</b>						
	0009	Bulk Density	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0010	Density (Miscell)	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0510	Density at RT	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
<b>[Density (100-900C)]</b>						
	0511	Density at 100C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0512	Density at 200C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0513	Density at 300C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0514	Density at 400C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0515	Density at 500C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0516	Density at 600C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0517	Density at 700C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0518	Density at 800C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0519	Density at 900C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
<b>[Density (1000-2000C)]</b>						
	0520	Density at 1000C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0521	Density at 1100C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0522	Density at 1200C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0523	Density at 1300C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0524	Density at 1400C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0525	Density at 1500C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0526	Density at 1600C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0527	Density at 1700C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0528	Density at 1800C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0529	Density at 1900C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
	0530	Density at 2000C	g/cm <sup>3</sup>	kg/m <sup>3</sup>	g/cm <sup>3</sup>	lb/in <sup>3</sup>
<b>Elasticity</b>						
	0050	Shear Modulus	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0070	Bulk Modulus	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0071	Longitudinal Modulus	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0060	Poisson Ratio	—	—	—	—
	0051	Temp Coeff of Shear Mod	#	#	#	#
	0041	Temp Coeff of Young's Mod	#	#	#	#
	7190	Internal Friction	—	—	—	—
<b>[Young's Modulus]</b>						
	0040	Young's Modulus (Miscell)	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0042	Young's Modulus at <0C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0540	Young's Modulus at RT	GPa	Pa	kgf/mm <sup>2</sup>	psi
<b>[Young's Modulus (100~1200C)]</b>						
	0541	Young's Modulus at 100C	GPa	Pa	kgf/mm <sup>2</sup>	psi

Category	ID	Property	Common	SI	CGS	PSI
	0542	Young's Modulus at 200C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0543	Young's Modulus at 300C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0544	Young's Modulus at 400C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0545	Young's Modulus at 500C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0546	Young's Modulus at 900C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0547	Young's Modulus at 1000C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0548	Young's Modulus at 1100C	GPa	Pa	kgf/mm <sup>2</sup>	psi
	0549	Young's Modulus at 1200C	GPa	Pa	kgf/mm <sup>2</sup>	psi

### Sound Velocity

0080	Velocity Longitudial Wave	m/s	m/s	m/s	m/s
0081	Velocity Longitudial Wave >500C	m/s	m/s	m/s	m/s
0085	Velocity Transvece Wave	m/s	m/s	m/s	m/s
0090	Velocity of Surface Wave	m/s	m/s	m/s	m/s

### Mechanical Strength

0110	Abraded Strength	MPa	Pa	kgf/mm <sup>2</sup>	psi
0120	Tensile Strength	MPa	Pa	kgf/mm <sup>2</sup>	psi
0140	Compressive Strength	MPa	Pa	kgf/mm <sup>2</sup>	psi
0150	Torsion Strength	MPa	Pa	kgf/mm <sup>2</sup>	psi

#### [Flexural Strength]

0102	Flexural Strength (Miscell)	MPa	Pa	kgf/mm <sup>2</sup>	psi
0100	Flexural Strength (3p)	MPa	Pa	kgf/mm <sup>2</sup>	psi
0101	Flexural Strength (4p)	MPa	Pa	kgf/mm <sup>2</sup>	psi

### Hardness, Toughness

0160	Fracture Toughness	MPa•m <sup>1/2</sup>	Pa•m <sup>1/2</sup>	MPa•m <sup>1/2</sup>	Pa•m <sup>1/2</sup>
0161	Brittleness	m <sup>-1/2</sup>	m <sup>-1/2</sup>	μ m <sup>-1/2</sup>	m <sup>-1/2</sup>
0200	Machinability	—	—	—	—
0171	Knoop Hardness	MPa	Pa	kgf/mm <sup>2</sup>	psi
0172	Mohs Hardness	—	—	—	—

#### [Vickers Hardness]

0180	Vickers Hardness (Typical)	MPa	Pa	kgf/mm <sup>2</sup>	psi
0170	Vickers Hardness (Miscell)	MPa	Pa	kgf/mm <sup>2</sup>	psi
0173	Vickers Hardness 50g	MPa	Pa	kgf/mm <sup>2</sup>	psi
0174	Vickers Hardness 100g	MPa	Pa	kgf/mm <sup>2</sup>	psi
0175	Vickers Hardness 200g	MPa	Pa	kgf/mm <sup>2</sup>	psi
0176	Vickers Hardness 500g	MPa	Pa	kgf/mm <sup>2</sup>	psi

### Fatigue, Relaxation

0210	Static Fatigue	—	—	—	—
0211	Dynamic Fatigue	MPa	Pa	kgf/mm <sup>2</sup>	psi
0215	Stress Corrosion Resist	—	—	—	—
0099	Stress Relaxation	—	—	—	—

### Interfacial

0191	Friction Coeff	—	—	—	—
0190	Abrasion Resistance	#	#	#	#

Category	ID	Property	Common	SI	CGS	PSI
	0230	Adhesion	—	—	—	—
	1460	Adsorption	g/m <sup>2</sup>	g/m <sup>2</sup>	g/m <sup>2</sup>	g/m <sup>2</sup>
	1470	Adsorption Heat	kJ/mol	J/mol	kcal/mol	kJ/mol
	0021	Wettability	—	—	—	—
<b>[Surface Tension]</b>						
	0020	Surface Tension (Miscell)	N/m	N/m	dyn/cm	dyn/cm
	0560	Surface Tension at RT	N/m	N/m	dyn/cm	dyn/cm
<b>[Surface Tension (100-950C)]</b>						
	0561	Surface Tension at 100C	N/m	N/m	dyn/cm	dyn/cm
	0562	Surface Tension at 200C	N/m	N/m	dyn/cm	dyn/cm
	0563	Surface Tension at 300C	N/m	N/m	dyn/cm	dyn/cm
	0564	Surface Tension at 400C	N/m	N/m	dyn/cm	dyn/cm
	0565	Surface Tension at 500C	N/m	N/m	dyn/cm	dyn/cm
	0566	Surface Tension at 600C	N/m	N/m	dyn/cm	dyn/cm
	0582	Surface Tension at 650C	N/m	N/m	dyn/cm	dyn/cm
	0567	Surface Tension at 700C	N/m	N/m	dyn/cm	dyn/cm
	0583	Surface Tension at 750C	N/m	N/m	dyn/cm	dyn/cm
	0568	Surface Tension at 800C	N/m	N/m	dyn/cm	dyn/cm
	0584	Surface Tension at 850C	N/m	N/m	dyn/cm	dyn/cm
	0569	Surface Tension at 900C	N/m	N/m	dyn/cm	dyn/cm
	0585	Surface Tension at 950C	N/m	N/m	dyn/cm	dyn/cm
<b>[Surface Tension (1000-2100C)]</b>						
	0570	Surface Tension at 1000C	N/m	N/m	dyn/cm	dyn/cm
	0586	Surface Tension at 1050C	N/m	N/m	dyn/cm	dyn/cm
	0571	Surface Tension at 1100C	N/m	N/m	dyn/cm	dyn/cm
	0587	Surface Tension at 1150C	N/m	N/m	dyn/cm	dyn/cm
	0572	Surface Tension at 1200C	N/m	N/m	dyn/cm	dyn/cm
	0588	Surface Tension at 1250C	N/m	N/m	dyn/cm	dyn/cm
	0573	Surface Tension at 1300C	N/m	N/m	dyn/cm	dyn/cm
	0589	Surface Tension at 1350C	N/m	N/m	dyn/cm	dyn/cm
	0574	Surface Tension at 1400C	N/m	N/m	dyn/cm	dyn/cm
	0590	Surface Tension at 1450C	N/m	N/m	dyn/cm	dyn/cm
	0575	Surface Tension at 1500C	N/m	N/m	dyn/cm	dyn/cm
	0591	Surface Tension at 1550C	N/m	N/m	dyn/cm	dyn/cm
	0576	Surface Tension at 1600C	N/m	N/m	dyn/cm	dyn/cm
	0592	Surface Tension at 1650C	N/m	N/m	dyn/cm	dyn/cm
	0577	Surface Tension at 1700C	N/m	N/m	dyn/cm	dyn/cm
	0593	Surface Tension at 1750C	N/m	N/m	dyn/cm	dyn/cm
	0578	Surface Tension at 1800C	N/m	N/m	dyn/cm	dyn/cm
	0579	Surface Tension at 1900C	N/m	N/m	dyn/cm	dyn/cm
	0580	Surface Tension at 2000C	N/m	N/m	dyn/cm	dyn/cm
	0581	Surface Tension at 2100C	N/m	N/m	dyn/cm	dyn/cm

## (2) Thermal

Category	ID	Property	Common	SI	CGS	PSI
<b>Crystallization</b>						
	1010	Crystallization	—	—	—	—
	1011	Liquidus Temperature	C	K	C	C
	1012	Rate of Nucleation	/(m <sup>3</sup> •s)	/(m <sup>3</sup> •s)	/(cm <sup>3</sup> •s)	/(cm <sup>3</sup> •s)
	1013	Velocity of Crystal Growth	μm/s	m/s	μm/s	μm/s
	1014	Crystallization Temp	C	K	C	C
	1015	Melting Temp of Crystal	C	K	C	C
	1016	Phase Separation	—	—	—	—
<b>Thermal Expansion</b>						
	1040	α-T Curve	—	—	—	—
<b>[Linear Expansion Coefficient]</b>						
	1020	Expansion Coeff (Typical)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1030	Expansion Coeff (0~100C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1021	Expansion Coeff (0~300C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1023	Expansion Coeff (20~100C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1022	Expansion Coeff (20~300C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1031	Expansion Coeff (20~400C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1035	Expansion Coeff (20~500C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1027	Expansion Coeff (20~TG)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1036	Expansion Coeff (30~300C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1028	Expansion Coeff (30~380C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1024	Expansion Coeff (50~350C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1032	Expansion Coeff (100~200C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1025	Expansion Coeff (100~300C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1033	Expansion Coeff (200~300C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1034	Expansion Coeff (300~400C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1026	Expansion Coeff (-30~70C)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1029	Expansion Coeff X	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
	1039	Expansion Coeff (Miscell)	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
<b>[Volumetric Expansion Coefficient]</b>						
	1051	Volumetric Expansion Coeff	10 <sup>-7</sup> /K	10 <sup>-7</sup> /K	10 <sup>-7</sup> /C	10 <sup>-7</sup> /C
<b>Heat Capacity</b>						
<b>[Specific Heat]</b>						
	1080	Specific Heat (Miscell)	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1601	Specific Heat at <-200C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1602	Specific Heat at -100C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1603	Specific Heat at RT	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
<b>[Specific Heat (100-700C)]</b>						
	1604	Specific Heat at 100C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1605	Specific Heat at 200C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1606	Specific Heat at 300C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1607	Specific Heat at 400C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1608	Specific Heat at 500C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1609	Specific Heat at 600C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1610	Specific Heat at 700C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
<b>[Specific Heat (800-1500C)]</b>						
	1611	Specific Heat at 800C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)

Category	ID	Property	Common	SI	CGS	PSI
	1612	Specific Heat at 900C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1613	Specific Heat at 1000C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1614	Specific Heat at 1100C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1615	Specific Heat at 1200C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1616	Specific Heat at 1300C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1617	Specific Heat at 1400C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)
	1618	Specific Heat at 1500C	J/(kg•K)	J/(kg•K)	cal/(g•C)	Btu/(lb•F)

**[Molar Specific Heat]**

	1670	Molar Specific Heat (Miscell)	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1671	Molar Specific Heat at <-200C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1672	Molar Specific Heat at -100C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1673	Molar Specific Heat at 0C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1674	Molar Specific Heat at RT	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1675	Molar Specific Heat at 100C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1676	Molar Specific Heat at 200C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1677	Molar Specific Heat at 300C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1678	Molar Specific Heat at 400C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1679	Molar Specific Heat at 500C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1680	Molar Specific Heat at 600C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1681	Molar Specific Heat at 700C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1682	Molar Specific Heat at 800C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1683	Molar Specific Heat at 900C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1684	Molar Specific Heat at 1000C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1685	Molar Specific Heat at 1100C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1686	Molar Specific Heat at 1200C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1687	Molar Specific Heat at 1300C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1688	Molar Specific Heat at 1400C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)
	1689	Molar Specific Heat at 1500C	J/(mol•C)	J/(mol•K)	cal/(mol•C)	Btu/(mol•F)

**Heat Transfer**

	1100	Thermal Diffusivity	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	<b>[Thermal Conductivity]</b>					
	1090	Thermal Conductivity (Miscell)	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1631	Thermal Conductivity at <-200C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1632	Thermal Conductivity at -100C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1630	Thermal Conductivity at 0C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1633	Thermal Conductivity at RT	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	<b>[Thermal Conductivity (100-700C)]</b>					
	1634	Thermal Conductivity at 100C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1635	Thermal Conductivity at 200C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1636	Thermal Conductivity at 300C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1637	Thermal Conductivity at 400C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1638	Thermal Conductivity at 500C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1639	Thermal Conductivity at 600C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1640	Thermal Conductivity at 700C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	<b>[Thermal Conductivity (800-1500C)]</b>					
	1641	Thermal Conductivity at 800C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1642	Thermal Conductivity at 900C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1643	Thermal Conductivity at 1000C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1644	Thermal Conductivity at 1100C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1645	Thermal Conductivity at 1200C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1646	Thermal Conductivity at 1300C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)

Category	ID	Property	Common	SI	CGS	PSI
	1647	Thermal Conductivity at 1400C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)
	1648	Thermal Conductivity at 1500C	W/(m•K)	W/(m•K)	cal/(cm•s•C)	Btu/(ft•h•F)

## Viscosity

### [Standard Point (1E1-1E7 dPa•s)]

1110	T at 1E1 dPa•s	C	K	C	C
1111	T at 1E2 dPa•s (Melting P)	C	K	C	C
1137	Melting P (Miscell)	C	K	C	C
1129	T at 1E2.5 dPa•s	C	K	C	C
1112	T at 1E3 dPa•s	C	K	C	C
1113	T at 1E4 dPa•s (Working P)	C	K	C	C
1114	T at 1E5dPa•s (Flow P)	C	K	C	C
1115	T at 1E6 dPa•s (Sealing P)	C	K	C	C
1131	T at 1E7 dPa•s	C	K	C	C

### [Standard Point (1E9-1E14.5 dPa•s)]

1126	T at 1E7.5dPa•s	C	K	C	C
1116	T at 1E7.6(7.65) dPa•s (Sof P) (Littleton Point)	C	K	C	C
1135	Sof P (DTA, DSC)	C	K	C	C
1118	Sof P (Deformation P) (TMA)	C	K	C	C
1136	Sof P (Miscell)	C	K	C	C
1132	T at 1E8 dPa•s	C	K	C	C
1133	T at 1E9 dPa•s	C	K	C	C
1134	T at 1E10 dPa•s	C	K	C	C
1117	Sag Point	C	K	C	C
1127	T at 1E11 dPa•s	C	K	C	C
1128	T at 1E12 dPa•s	C	K	C	C
1119	T at 1E13dPa•s (Annealing P)	C	K	C	C
1122	T at 1E14 dPa•s (Strain P)	C	K	C	C
1123	T at 1E14.5 dPa•s (Strain P)	C	K	C	C

### [Standard Point X dPa•s]

1124	T at X dPa•s	C	K	C	C
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### [Viscosity (100-1000C)]

1201	Viscosity at 100C	dPa•s	Pa•s	Poise	g/(cm•s)
1202	Viscosity at 200C	dPa•s	Pa•s	Poise	g/(cm•s)
1203	Viscosity at 300C	dPa•s	Pa•s	Poise	g/(cm•s)
1204	Viscosity at 400C	dPa•s	Pa•s	Poise	g/(cm•s)
1205	Viscosity at 500C	dPa•s	Pa•s	Poise	g/(cm•s)
1206	Viscosity at 600C	dPa•s	Pa•s	Poise	g/(cm•s)
1207	Viscosity at 700C	dPa•s	Pa•s	Poise	g/(cm•s)
1208	Viscosity at 800C	dPa•s	Pa•s	Poise	g/(cm•s)
1209	Viscosity at 900C	dPa•s	Pa•s	Poise	g/(cm•s)
1210	Viscosity at 1000C	dPa•s	Pa•s	Poise	g/(cm•s)

### [Viscosity (1100-1550C)]

1211	Viscosity at 1100C	dPa•s	Pa•s	Poise	g/(cm•s)
1224	Viscosity at 1150C	dPa•s	Pa•s	Poise	g/(cm•s)
1212	Viscosity at 1200C	dPa•s	Pa•s	Poise	g/(cm•s)
1225	Viscosity at 1250C	dPa•s	Pa•s	Poise	g/(cm•s)
1213	Viscosity at 1300C	dPa•s	Pa•s	Poise	g/(cm•s)
1226	Viscosity at 1350C	dPa•s	Pa•s	Poise	g/(cm•s)
1214	Viscosity at 1400C	dPa•s	Pa•s	Poise	g/(cm•s)

Category	ID	Property	Common	SI	CGS	PSI
	1227	Viscosity at 1450C	dPa•s	Pa•s	Poise	g/(cm•s)
	1215	Viscosity at 1500C	dPa•s	Pa•s	Poise	g/(cm•s)
	1228	Viscosity at 1550C	dPa•s	Pa•s	Poise	g/(cm•s)
<b>[Viscosity (1600-2500C)]</b>						
	1216	Viscosity at 1600C	dPa•s	Pa•s	Poise	g/(cm•s)
	1229	Viscosity at 1650C	dPa•s	Pa•s	Poise	g/(cm•s)
	1217	Viscosity at 1700C	dPa•s	Pa•s	Poise	g/(cm•s)
	1230	Viscosity at 1750C	dPa•s	Pa•s	Poise	g/(cm•s)
	1218	Viscosity at 1800C	dPa•s	Pa•s	Poise	g/(cm•s)
	1219	Viscosity at 1900C	dPa•s	Pa•s	Poise	g/(cm•s)
	1220	Viscosity at 2000C	dPa•s	Pa•s	Poise	g/(cm•s)
	1222	Viscosity at 2200C	dPa•s	Pa•s	Poise	g/(cm•s)
	1223	Viscosity at 2500C	dPa•s	Pa•s	Poise	g/(cm•s)
<b>[Viscosity (XC)]</b>						
	1221	Viscosity at XC	dPa•s	Pa•s	Poise	g/(cm•s)
<b>[Fulcher's Equation]</b>						
	1231	Const A of Fulcher Eq (FIG)	log(dPa•s)	log(dPa•s)	log(Poise)	log(dPa•s)
	1232	Const B of Fulcher Eq (FIG)	C	K	C	C
	1233	Const To of Fulcher Eq (FIG)	C	K	C	C
	1235	Min Temp of Fulcher Eq (FIG)	C	K	C	C
	1236	Max Temp of Fulcher Eq (FIG)	C	K	C	C
	1237	Min Viscosity of Fulcher Eq (FIG)	dPa•s	Pa•s	Poise	g/(cm•s)
	1238	Max Viscosity of Fulcher Eq (FIG)	dPa•s	Pa•s	Poise	g/(cm•s)

## Diffusion

	1370	Ion Exchange	—	—	—	—
	1380	Thermotransport	—	—	—	—
<b>[Ion Diffusion D<sub>0</sub>]</b>						
	1353	Diffusion Coeff D <sub>0</sub> (Miscell)	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1301	Diffusion Coeff D <sub>0</sub> of H <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1303	Diffusion Coeff D <sub>0</sub> of Li <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1305	Diffusion Coeff D <sub>0</sub> of Na <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1307	Diffusion Coeff D <sub>0</sub> of K <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1309	Diffusion Coeff D <sub>0</sub> of Rb <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1311	Diffusion Coeff D <sub>0</sub> of Cs <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1382	Diffusion Coeff D <sub>0</sub> of Cu <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1313	Diffusion Coeff D <sub>0</sub> of F <sup>-</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1315	Diffusion Coeff D <sub>0</sub> of O <sup>2-</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1317	Diffusion Coeff D <sub>0</sub> of Ca <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1319	Diffusion Coeff D <sub>0</sub> of Mg <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1321	Diffusion Coeff D <sub>0</sub> of Sr <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1323	Diffusion Coeff D <sub>0</sub> of Ba <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1325	Diffusion Coeff D <sub>0</sub> of Tl <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1327	Diffusion Coeff D <sub>0</sub> of Ag <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1329	Diffusion Coeff D <sub>0</sub> of Cl <sup>-</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1371	Diffusion Coeff D <sub>0</sub> of Ni <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1373	Diffusion Coeff D <sub>0</sub> of Fe <sup>3+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1375	Diffusion Coeff D <sub>0</sub> of Co <sup>2+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1377	Diffusion Coeff D <sub>0</sub> of Si	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
<b>[Ion Diffusion E<sub>d</sub>]</b>						
	1354	Activation Energy Ed of Diff (Miscell)	kJ/mol	J/mol	kcal/mol	kJ/mol
	1302	Activation Energy Ed of Diff H <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol



Category	ID	Property	Common	SI	CGS	PSI
	1304	Activation Energy Ed of Diff Li <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1306	Activation Energy Ed of Diff Na <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1308	Activation Energy Ed of Diff K <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1310	Activation Energy Ed of Diff Rb <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1312	Activation Energy Ed of Diff Cs <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1383	Activation Energy Ed of Diff Cu <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1314	Activation Energy Ed of Diff F <sup>-</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1316	Activation Energy Ed of Diff O <sup>2-</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1318	Activation Energy Ed of Diff Ca <sup>2+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1320	Activation Energy Ed of Diff Mg <sup>2+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1322	Activation Energy Ed of Diff Sr <sup>2+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1324	Activation Energy Ed of Diff Ba <sup>2+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1326	Activation Energy Ed of Diff Tl <sup>2+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1328	Activation Energy Ed of Diff Ag <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1330	Activation Energy Ed of Diff Cl <sup>-</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1372	Activation Energy Ed of Diff Ni <sup>++</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1374	Activation Energy Ed of Diff Fe <sup>++</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1376	Activation Energy Ed of Diff Co <sup>++</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1378	Activation Energy Ed of Diff Si	kJ/mol	J/mol	kcal/mol	kJ/mol
<b>[Atomic, Molecular Diffusion D<sub>0</sub>, D<sub>t</sub> (Eq B in 2(2) Chapter 6)]</b>						
	1331	Diffusion Coeff D <sub>0</sub> of N <sub>2</sub>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1333	Diffusion Coeff D <sub>0</sub> of O <sub>2</sub>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1335	Diffusion Coeff D <sub>0</sub> of H <sub>2</sub> O	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1363	Diffusion Coeff D <sub>0</sub> of D <sub>2</sub> O	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1379	Diffusion Coeff D <sub>0</sub> of CO <sub>2</sub>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1337	Diffusion Coeff D <sub>0</sub> of He	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1339	Diffusion Coeff D <sub>0</sub> of Ne	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1341	Diffusion Coeff D <sub>0</sub> of Ar	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1343	Diffusion Coeff D <sub>0</sub> of Xe	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1365	Diffusion Coeff D <sub>t</sub> of He	cm <sup>2</sup> /sK	m <sup>2</sup> /sK	cm <sup>2</sup> /sK	cm <sup>2</sup> /sK
	1367	Diffusion Coeff D <sub>t</sub> of Ne	cm <sup>2</sup> /sK	m <sup>2</sup> /sK	cm <sup>2</sup> /sK	cm <sup>2</sup> /sK
	1369	Diffusion Coeff D <sub>t</sub> of Ar	cm <sup>2</sup> /sK	m <sup>2</sup> /sK	cm <sup>2</sup> /sK	cm <sup>2</sup> /sK
<b>[Atomic, Molecular Diffusion E<sub>d</sub>]</b>						
	1332	Activation Energy Ed of Diff N <sub>2</sub>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1334	Activation Energy Ed of Diff O <sub>2</sub>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1336	Activation Energy Ed of Diff H <sub>2</sub> O	kJ/mol	J/mol	kcal/mol	kJ/mol
	1364	Activation Energy Ed of Diff D <sub>2</sub> O	kJ/mol	J/mol	kcal/mol	kJ/mol
	1381	Activation Energy Ed of Diff CO <sub>2</sub>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1338	Activation Energy Ed of Diff He	kJ/mol	J/mol	kcal/mol	kJ/mol
	1340	Activation Energy Ed of Diff Ne	kJ/mol	J/mol	kcal/mol	kJ/mol
	1342	Activation Energy Ed of Diff Ar	kJ/mol	J/mol	kcal/mol	kJ/mol
	1344	Activation Energy Ed of Diff Xe	kJ/mol	J/mol	kcal/mol	kJ/mol
<b>[Ion Exchange D<sub>0</sub>]</b>						
	1345	Diff Coeff D <sub>0</sub> of Li <sup>+</sup> =Na <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1347	Diff Coeff D <sub>0</sub> of Li <sup>+</sup> =K <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1349	Diff Coeff D <sub>0</sub> of Na <sup>+</sup> =K <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1351	Diff Coeff D <sub>0</sub> of Na <sup>+</sup> =Ag <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1355	Diff Coeff D <sub>0</sub> of Na <sup>+</sup> =Cu <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1357	Diff Coeff D <sub>0</sub> of Na <sup>+</sup> =Tl <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1359	Diff Coeff D <sub>0</sub> of K <sup>+</sup> =Tl <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
	1361	Diff Coeff D <sub>0</sub> of Li <sup>+</sup> =Ag <sup>+</sup>	cm <sup>2</sup> /s	m <sup>2</sup> /s	cm <sup>2</sup> /s	cm <sup>2</sup> /s
<b>[Ion Exchange E<sub>d</sub>]</b>						
	1346	Activation Energy Ed of Li <sup>+</sup> =Na <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol

Category	ID	Property	Common	SI	CGS	PSI
	1348	Activation Energy Ed of Diff Li <sup>+</sup> =K <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1350	Activation Energy Ed of Diff Na <sup>+</sup> =K <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1352	Activation Energy Ed of Diff Na <sup>+</sup> =Ag <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1356	Activation Energy Ed of Diff Na <sup>+</sup> =Cu <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1358	Activation Energy Ed of Diff Na <sup>+</sup> =Tl <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1360	Activation Energy Ed of Diff K <sup>+</sup> =Tl <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
	1362	Activation Energy Ed of Diff Li <sup>+</sup> =Ag <sup>+</sup>	kJ/mol	J/mol	kcal/mol	kJ/mol
<b>[Temp Range of D<sub>0</sub> and E<sub>d</sub>]</b>						
	1392	Min Temp of Diffusion Equation	C	K	C	C
	1393	Max Temp of Diffusion Equation	C	K	C	C

## Permeability

### [Permeability]

1411	Permeability He	#	#	#	#
1412	Permeability Ne	#	#	#	#
1413	Permeability Ar	#	#	#	#
1414	Permeability N	#	#	#	#
1415	Permeability O	#	#	#	#
1416	Permeability H	#	#	#	#
1417	Permeability X	#	#	#	#

### [Activation Energy of Perm Ep]

1421	Activation Energy Ep of He	kJ/mol	J/mol	kcal/mol	kJ/mol
1422	Activation Energy Ep of Ne	kJ/mol	J/mol	kcal/mol	kJ/mol
1423	Activation Energy Ep of Ar	kJ/mol	J/mol	kcal/mol	kJ/mol
1424	Activation Energy Ep of N	kJ/mol	J/mol	kcal/mol	kJ/mol
1425	Activation Energy Ep of O	kJ/mol	J/mol	kcal/mol	kJ/mol
1426	Activation Energy Ep of H	kJ/mol	J/mol	kcal/mol	kJ/mol
1427	Activation Energy Ep of X	kJ/mol	J/mol	kcal/mol	kJ/mol

### [Permeation Coeff Po]

1431	Permeation Coeff Po of He	atom/s•cm•K•atm	atom/s•m•K•atm	atom/s•cm•K•atm	atom/s•cm•K•atm
1432	Permeation Coeff Po of Ne	atom/s•cm•K•atm	atom/s•m•K•atm	atom/s•cm•K•atm	atom/s•cm•K•atm
1433	Permeation Coeff Po of Ar	atom/s•cm•K•atm	atom/s•m•K•atm	atom/s•cm•K•atm	atom/s•cm•K•atm

## Solubility

1511	Solubility He	#	#	#	#
1512	Solubility Ne	#	#	#	#
1512	Solubility O <sub>2</sub>	#	#	#	#
1514	Solubility N <sub>2</sub>	#	#	#	#
1515	Solubility H <sub>2</sub> O	#	#	#	#
1516	Solubility CO <sub>2</sub>	#	#	#	#
1517	Solubility SO <sub>3</sub>	#	#	#	#
1518	Solubility X	#	#	#	#
1501	Solubility/mol He	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
1502	Solubility/mol Ne	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
1503	Solubility/mol O <sub>2</sub>	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)

Category	ID	Property	Common	SI	CGS	PSI
	1504	Solubility/mol N <sub>2</sub>	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
	1505	Solubility/mol H <sub>2</sub> O	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
	1506	Solubility/mol CO <sub>2</sub>	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
	1507	Solubility/mol SO <sub>3</sub>	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
	1508	Solubility/mol X	cm <sup>3</sup> /(mol•atm)	m <sup>3</sup> /(mol•atm)	cm <sup>3</sup> /(mol•atm)	in <sup>3</sup> /(mol•atm)
	1521	Solubility/vol He	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1522	Solubility/vol Ne	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1523	Solubility/vol O <sub>2</sub>	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1524	Solubility/vol N <sub>2</sub>	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1525	Solubility/vol H <sub>2</sub> O	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1526	Solubility/vol CO <sub>2</sub>	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1527	Solubility/vol SO <sub>3</sub>	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1528	Solubility/vol X	cm <sup>3</sup> /cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	cm <sup>3</sup> /cm <sup>3</sup>	in <sup>3</sup> /in <sup>3</sup>
	1571	Solubility Coeff S <sub>0</sub> of He	atom/(cm <sup>3</sup> •atm)	atom/(m <sup>3</sup> •atm)	atom/(cm <sup>3</sup> •atm)	atom/(cm <sup>3</sup> •atm)
	1572	Solubility Coeff S <sub>0</sub> of Ne	atom/(cm <sup>3</sup> •atm)	atom/(m <sup>3</sup> •atm)	atom/(cm <sup>3</sup> •atm)	atom/(cm <sup>3</sup> •atm)
	1573	Solubility Coeff S <sub>0</sub> of Ar	atom/(cm <sup>3</sup> •atm)	atom/(m <sup>3</sup> •atm)	atom/(cm <sup>3</sup> •atm)	atom/(cm <sup>3</sup> •atm)
	1581	Activation Energy Es of He	kJ/mol	J/mol	kcal/mol	kJ/mol
	1582	Activation Energy Es of Ne	kJ/mol	J/mol	kcal/mol	kJ/mol
	1583	Activation Energy Es of Ar	kJ/mol	J/mol	kcal/mol	kJ/mol

### Glass Transition Point

1140	Glass Transition Point (Typical)	C	K	C	C
1120	Tg (DTA, DSC)	C	K	C	C
1121	Tg (Expansion, TMA)	C	K	C	C
1125	Tg (Miscell)	C	K	C	C

### Others

1390	Thermal Shock Resistance (dT)	deg	deg	deg	deg
1391	Thermal Endurance	C	K	C	C
1530	Vaporization	—	—	—	—
1550	Meltability	—	—	—	—
1560	Sintering	—	—	—	—
1531	Vapour Pressure (Miscell)	torr	Pa	mmHg	psi
1532	Vapour Pressure 1000°C	torr	Pa	mmHg	psi
1533	Vapour Pressure 1100°C	torr	Pa	mmHg	psi
1534	Vapour Pressure 1200°C	torr	Pa	mmHg	psi
1535	Vapour Pressure 1300°C	torr	Pa	mmHg	psi
1536	Vapour Pressure 1400°C	torr	Pa	mmHg	psi
1537	Vapour Pressure 1500°C	torr	Pa	mmHg	psi

### (3) Optical

Category	ID	Property	Common	SI	CGS	PSI
<b>Refraction</b>						
[Refractive Index (Typical)]						
	2010	Refractive Index (Typical)	—	—	—	—
<b>[Refractive Index UV]</b>						
	2030	Refract Index <300nm	—	—	—	—
	2011	Refract Index 365.0nm i	—	—	—	—
<b>[Refractive Index Visible]</b>						
	2012	Refract Index 404.7nm h	—	—	—	—
	2013	Refract Index 435.8nm g	—	—	—	—
	2014	Refract Index 480.0nm F'	—	—	—	—
	2015	Refract Index 486.1nm F	—	—	—	—
	2016	Refract Index 546.1nm e	—	—	—	—
	2017	Refract Index 587.6nm d	—	—	—	—
	2018	Refract Index 589.3nm D	—	—	—	—
	2028	Refract Index 632.8nm He-Ne	—	—	—	—
	2019	Refract Index 643.8nm C'	—	—	—	—
	2020	Refract Index 656.3nm C	—	—	—	—
	2021	Refract Index 706.5nm r	—	—	—	—
	2035	Refract Index (Miscell)	—	—	—	—
<b>[Refractive Index IR]</b>						
	2022	Refract Index 852.1nm s	—	—	—	—
	2023	Refract Index 1014.0nm t	—	—	—	—
	2024	Refract Index 1um	—	—	—	—
	2036	Refract Index 1.3um	—	—	—	—
	2037	Refract Index 1.5um	—	—	—	—
	2025	Refract Index 2um	—	—	—	—
	2031	Refract Index 3um	—	—	—	—
	2026	Refract Index 5um	—	—	—	—
	2032	Refract Index 8um	—	—	—	—
	2027	Refract Index 10um	—	—	—	—
	2033	Refract Index 11um	—	—	—	—
	2034	Refract Index 12um	—	—	—	—
[Refractive Index at Specified Condition]						
	2029	Ref Index at Specified Cond	—	—	—	—
<b>[Temp Dependence of Refractive Index]</b>						
	2061	Temp Coeff of RI e-line -20~0C	$10^{-6}/K$	$10^{-6}/K$	/C	/C
	2062	Temp Coeff of RI e-line 0~20C	$10^{-6}/K$	$10^{-6}/K$	/C	/C
	2063	Temp Coeff of RI e-line 20~40C	$10^{-6}/K$	$10^{-6}/K$	/C	/C
	2064	Temp Coeff of RI Other Data	$10^{-6}/K$	$10^{-6}/K$	/C	/C
	2480	Thermo Optical Constant	$10^{-6}/K$	$10^{-6}/K$	/C	/C
[Graded Index]						
	2040	Graded Index	—	—	—	—
<b>[Abbe Value]</b>						
	2051	Abbe Value (nd-1)/(nF-nC)	—	—	—	—
	2052	Abbe Value (ne-1)/(nF'-nC')	—	—	—	—
	2053	Abbe Value Other Data	—	—	—	—
<b>[Sellmeier Dispersion Equation]</b>						
	2081	Const of Sellmeier Dispersion Eq A <sub>1</sub>	—	—	—	—
	2082	Const of Sellmeier Dispersion Eq B <sub>1</sub>	—	—	—	—
	2083	Const of Sellmeier Dispersion Eq A <sub>2</sub>	—	—	—	—

Category	ID	Property	Common	SI	CGS	PSI
	2084	Const of Sellmeier Dispersion Eq B <sub>2</sub>	—	—	—	—
	2085	Const of Sellmeier Dispersion Eq A <sub>3</sub>	—	—	—	—
	2086	Const of Sellmeier Dispersion Eq B <sub>3</sub>	—	—	—	—
<b>[Cauchy Dispersion Equation]</b>						
	2087	Const of Cauchy Dispersion Eq A	—	—	—	—
	2088	Const of Cauchy Dispersion Eq B	—	—	—	—
	2088	Const of Cauchy Dispersion Eq C	—	—	—	—
<b>[Dispersion Equation (n-λ curve)]</b>						
	2101	Const of Dispersion Eq A <sub>0</sub>	—	—	—	—
	2102	Const of Dispersion Eq A <sub>1</sub>	—	—	—	—
	2103	Const of Dispersion Eq A <sub>2</sub>	—	—	—	—
	2104	Const of Dispersion Eq A <sub>3</sub>	—	—	—	—
	2105	Const of Dispersion Eq A <sub>4</sub>	—	—	—	—
	2106	Const of Dispersion Eq A <sub>5</sub>	—	—	—	—
<b>[Mean Dispersion]</b>						
	2111	Mean Dispersion F-C	—	—	—	—
	2112	Mean Dispersion g-d	—	—	—	—
	2113	Mean Dispersion Other Data	—	—	—	—
<b>[Relative Partial Dispersion]</b>						
	2115	Relative Partial Disp (d-C)/(F-C)	—	—	—	—
	2116	Relative Partial Disp (g-F)/(F-C)	—	—	—	—
	2118	Relative Partial Disp (C-r)/(F-C)	—	—	—	—
	2119	Relative Partial Disp (C'-r)/(F'-C')	—	—	—	—
	2121	Relative Partial Disp (d-C)/(F'-C')	—	—	—	—
	2122	Relative Partial Disp (F-e)/(F-C)	—	—	—	—
	2123	Relative Partial Disp (F'-e)/(F'-C')	—	—	—	—
	2124	Relative Partial Disp (g-d)/(F-C)	—	—	—	—
	2125	Relative Partial Disp (g-d)/(F'-C')	—	—	—	—
	2126	Relative Partial Disp (g-F)/(F'-C')	—	—	—	—
	2127	Relative Partial Disp (h-g)/(F'-C')	—	—	—	—
	2117	Relative Partial Disp Other Data	—	—	—	—
	2120	Normal Partial Disp	—	—	—	—
	2130	Deviation of Relative Partial Disp	—	—	—	—
<hr/>						
<b>Transmission</b>						
	2150	Polarization	—	—	—	—
<b>[Transmittance (FIG)]</b>						
	2218	UV/IR Transmission Spectrum	—	—	—	—
<b>[Transmittance UV]</b>						
	2200	Transmittance UV	%	—	—	—
<b>[Transmittance Visible]</b>						
	2201	Transmittance 400~500nm	%	—	—	—
	2202	Transmittance 500~600nm	%	—	—	—
	2203	Transmittance 600~700nm	%	—	—	—
	2210	Transmittance Visible	%	—	—	—
<b>[Transmittance IR]</b>						
	2204	Transmittance 700~1000nm	%	—	—	—
	2205	Transmittance 1~2um	%	—	—	—
	2206	Transmittance 2~5um	%	—	—	—
	2207	Transmittance 5~10um	%	—	—	—
	2208	Transmittance 10um	%	—	—	—
	2209	Transmittance IR	%	—	—	—

Category	ID	Property	Common	SI	CGS	PSI
<b>[Transmittance Other Data]</b>						
	2211	Transmittance Other Data	%	—	—	—
	2212	Transmittance Solar	%	—	—	—
	2213	Transmittance Illuminant A	%	—	—	—
	2214	Transmittance Illuminant C	%	—	—	—
<b>[Internal Transmittance (Miscellaneous)]</b>						
	2300	Internal Trans (Miscell)	%	—	—	—
<b>[Internal Transmittance UV]</b>						
	2290	Internal Trans UV	%	—	—	—
<b>[Internal Transmittance Visible]</b>						
	2291	Int Trans 400~500nm	%	—	—	—
	2292	Int Trans 500~600nm	%	—	—	—
	2293	Int Trans 600~700nm	%	—	—	—
<b>[Internal Transmittance IR]</b>						
	2294	Int Trans 700~1000nm	%	—	—	—
	2295	Int Trans 1~2μm	%	—	—	—
	2296	Int Trans 2~5μm	%	—	—	—
	2297	Int Trans 5~10μm	%	—	—	—
	2298	Int Trans 10μm	%	—	—	—
	2299	Int Trans IR	%	—	—	—

## Absorption

	2901	X-Ray Absorption Coeff	/cm	/m	/cm	/cm
	2906	Neutron Absorption	—	—	—	—
	2282	Optical Gap	eV	eV	eV	eV
<b>[Absorption Edge]</b>						
	2280	Absorption Edge UV/Visible	nm	m	nm	nm
	2281	Absorption Edge IR	μm	m	nm	nm
	2861	Cut-off Wavelength	μm	m	μm	μm
<b>[Absorption (FIG)]</b>						
	2278	Absorption Spectrum (UV~IR)	—	—	—	—
<b>[Absorbance UV] [Optical Density UV]</b>						
	2240	Absorbance UV	—	—	—	—
<b>[Absorbance Visible] [Optical Density Visible]</b>						
	2241	Absorbance 400~500nm	—	—	—	—
	2242	Absorbance 500~600nm	—	—	—	—
	2243	Absorbance 600~700nm	—	—	—	—
	2251	Absorbance Visible	—	—	—	—
<b>[Absorbance IR] [Optical Density IR]</b>						
	2244	Absorbance 700~1000nm	—	—	—	—
	2245	Absorbance 1~2μm	—	—	—	—
	2246	Absorbance 2~5μm	—	—	—	—
	2247	Absorbance 5~10μm	—	—	—	—
	2248	Absorbance 10μm	—	—	—	—
	2249	Absorbance IR	—	—	—	—
<b>[Absorbance Other Data] [Optical Density Other Data]</b>						
	2250	Absorbance Other Data	—	—	—	—
<b>[Absorption Coefficient UV]</b>						
	2260	Absorption Coeff UV	/cm	/m	/cm	/cm
<b>[Absorption Coefficient Visible]</b>						

Category	ID	Property	Common	SI	CGS	PSI
	2261	Absorption Coeff 400~500nm	/cm	/m	/cm	/cm
	2262	Absorption Coeff 500~600nm	/cm	/m	/cm	/cm
	2263	Absorption Coeff 600~700nm	/cm	/m	/cm	/cm
	2271	Absorption Coeff Visible	/cm	/m	/cm	/cm
<b>[Absorption Coefficient IR]</b>						
	2264	Absorption Coeff 700~1000nm	/cm	/m	/cm	/cm
	2265	Absorption Coeff 1~2μm	/cm	/m	/cm	/cm
	2266	Absorption Coeff 2~5μm	/cm	/m	/cm	/cm
	2267	Absorption Coeff 5~10μm	/cm	/m	/cm	/cm
	2268	Absorption Coeff 10μm	/cm	/m	/cm	/cm
	2269	Absorption Coeff IR	/cm	/m	/cm	/cm
<b>[Absorption Coefficient Other Data]</b>						
	2270	Absorption Coeff Other Data	/cm	/m	/cm	/cm

## Color

	2370	Color Code	—	—	—	—
	2371	Dominant Wave Length	nm	m	nm	nm
	2372	Color Temperature	K	K	C	C
	2373	Chromaticity x	—	—	—	—
	2374	Chromaticity y	—	—	—	—
	2375	Chromaticity Stimulus Y	—	—	—	—
	2376	Color Purity	—	—	—	—
<b>[Color]</b>						
	2350	Color (Miscell)	—	—	—	—
	2351	Color (Red)	—	—	—	—
	2352	Color (Orange)	—	—	—	—
	2353	Color (Yellow)	—	—	—	—
	2354	Color (Green)	—	—	—	—
	2355	Color (Blue)	—	—	—	—
	2356	Color (Violet)	—	—	—	—
	2357	Color (Black)	—	—	—	—
	2358	Color (Gray)	—	—	—	—
	2359	Color (White)	—	—	—	—
	2360	Color (Brown)	—	—	—	—
	2361	Color (Other)	—	—	—	—

## Scattering

<b>[Scattering (Miscellaneous)]</b>						
	2340	Scattering (Miscell)	#	#	#	#
<b>[Scattering UV]</b>						
	2330	Scattering UV	#	#	#	#
<b>[Scattering Visible]</b>						
	2331	Scattering 400~500nm	#	#	#	#
	2332	Scattering 500~600nm	#	#	#	#
	2333	Scattering 600~700nm	#	#	#	#
<b>[Scattering IR]</b>						
	2334	Scattering 700~1000nm	#	#	#	#
	2335	Scattering 1~2μm	#	#	#	#
	2336	Scattering 2~5μm	#	#	#	#
	2337	Scattering 5~10μm	#	#	#	#

Category	ID	Property	Common	SI	CGS	PSI
	2338	Scattering 10μm	#	#	#	#
	2339	Scattering IR	#	#	#	#

## Reflection

### [Reflectance (FIG)]

2398	Reflectance Spectrum (UV~IR)	—	—	—	—
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### [Reflectance (Miscellaneous)]

2390	Reflectance (Miscell)	%	—	—	—
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### [Reflectance UV]

2380	Reflectance UV	%	—	—	—
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### [Reflectance Visible]

2381	Reflectance 400~500nm	%	—	—	—
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2382	Reflectance 500~600nm	%	—	—	—
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2383	Reflectance 600~700nm	%	—	—	—
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### [Reflectance IR]

2384	Reflectance 700~1000nm	%	—	—	—
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2385	Reflectance 1~2μm	%	—	—	—
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2386	Reflectance 2~5μm	%	—	—	—
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2387	Reflectance 5~10μm	%	—	—	—
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2388	Reflectance 10μm	%	—	—	—
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2389	Reflectance IR	%	—	—	—
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## Radiation

2500	Emissivity	—	—	—	—
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2509	Emissivity Spectrum (FIG)	—	—	—	—
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## External Induced

2400	Fluorescence	—	—	—	—
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2401	Life Time of Fluorescence	s	s	s	s
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2405	Luminescence	—	—	—	—
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2416	Dominant Wavelength of Luminescence	nm	m	nm	nm
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2417	Luminescence Quantum Efficiency	%	—	—	—
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2406	Thermoluminescence	—	—	—	—
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2407	Upconversion	—	—	—	—
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2402	Juddy-Ofelt Param OM2	$10^{-20}\text{cm}^2$	$\text{m}^2$	$10^{-20}\text{cm}^2$	$10^{-20}\text{cm}^2$
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2403	Juddy-Ofelt Param OM4	$10^{-20}\text{cm}^2$	$\text{m}^2$	$10^{-20}\text{cm}^2$	$10^{-20}\text{cm}^2$
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2404	Juddy-Ofelt Param OM6	$10^{-20}\text{cm}^2$	$\text{m}^2$	$10^{-20}\text{cm}^2$	$10^{-20}\text{cm}^2$
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2140	Stress Optical Coeff	$\text{TPa}^{-1}$	$\text{Pa}^{-1}$	$\text{nm}\cdot\text{cm}/\text{kgf}$	$\text{Pa}^{-1}$
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2141	Ref Index of Parallel to Stress	—	—	—	—
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2142	Ref Index of Perpend to Stress	—	—	—	—
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2445	Build up Ratio	—	—	—	—
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2446	Photo Hole Burning	—	—	—	—
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2450	Kerr Constant	#	#	#	#
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2460	Acousto Opt Fig of Merit	—	—	—	—
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2470	Photo Conduction	—	—	—	—
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2490	Verdet Constant	$\text{rad}/(\text{T}\cdot\text{m})$	$\text{rad}/(\text{T}\cdot\text{m})$	$\text{min}/(\text{Oe}\cdot\text{cm})$	$\text{min}/(\text{G}\cdot\text{cm})$
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### [Birefringence]

2850	Birefringence (Typical)	$\text{nm}/\text{m}$	$\text{nm}/\text{m}$	$\text{nm}/\text{cm}$	$\text{nm}/\text{cm}$
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Category	ID	Property	Common	SI	CGS	PSI
	2851	Birefringence 0.63 $\mu$ m	nm/m	nm/m	nm/cm	nm/cm
	2852	Birefringence 0.85 $\mu$ m	nm/m	nm/m	nm/cm	nm/cm
	2853	Birefringence 1.30 $\mu$ m	nm/m	nm/m	nm/cm	nm/cm
	2854	Birefringence X $\mu$ m	nm/m	nm/m	nm/cm	nm/cm
<b>[Photoinduced]</b>						
	2435	Photoinduced Stress	Pa	Pa	kgf/cm <sup>2</sup>	psi
	2436	Photoind Change in Ref Index	—	—	—	—
	2420	Solarization Hg Lamp	—	—	—	—
	2421	Solarization Other Data	—	—	—	—
<b>[Browning]</b>						
	2902	Electron Browning	—	—	—	—
	2903	G-Ray Radiation Browning	—	—	—	—
	2904	X-Ray Browning	—	—	—	—
	2905	UV Browning	—	—	—	—
	2907	Neutron Browning	—	—	—	—
	2422	Photo Bleaching	—	—	—	—
	2430	Photosensitivity	—	—	—	—
	2431	Photodarkening	—	—	—	—
	2432	Photodoping	—	—	—	—
<b>[Chromism]</b>						
	2440	Photochromism	—	—	—	—
	2443	Thermochromism	—	—	—	—
	2444	Electrochromism	—	—	—	—

### Laser Optics

	2410	Laser	—	—	—	—
	2411	Crosssection of Stimu Emission	cm <sup>2</sup>	m <sup>2</sup>	cm <sup>2</sup>	cm <sup>2</sup>
	2412	Gain Constant	#	#	#	#
	2413	Slope Efficiency	%	—	—	—
	2414	Threshold Value	#	#	#	#
	2415	Temp Coeff of Optical Path	—	—	—	—

### Fiber Optics

	2846	Rayleigh Coeff	dB/(km $\cdot\mu$ m <sup>4</sup> )	dB/(km $\cdot\mu$ m <sup>4</sup> )	dB/(km $\cdot\mu$ m <sup>4</sup> )	dB/(km $\cdot\mu$ m <sup>4</sup> )
	2871	Fiber Grating	—	—	—	—
	2872	Fiber Amplification	—	—	—	—
<b>[Transmission Loss]</b>						
	2801	Transmission Loss (Miscell)	dB/km	dB/m	dB/km	dB/km
	2802	Transmission Loss 0.63 $\mu$ m	dB/km	dB/m	dB/km	dB/km
	2803	Transmission Loss 0.85 $\mu$ m	dB/km	dB/m	dB/km	dB/km
	2804	Transmission Loss 1.30 $\mu$ m	dB/km	dB/m	dB/km	dB/km
	2805	Transmission Loss 1.55 $\mu$ m	dB/km	dB/m	dB/km	dB/km
	2806	Transmission Loss 2.90 $\mu$ m	dB/km	dB/m	dB/km	dB/km
	2807	Transmission Loss X $\mu$ m	dB/km	dB/m	dB/km	dB/km
<b>[Numerical Aperture]</b>						
	2810	Numerical Aperture (Miscell)	—	—	—	—
	2811	Numerical Aperture 0.85 $\mu$ m	—	—	—	—
	2812	Numerical Aperture 1.30 $\mu$ m	—	—	—	—
	2813	Numerical Aperture X $\mu$ m	—	—	—	—
<b>[Transmission Band]</b>						

Category	ID	Property	Common	SI	CGS	PSI
	2820	Transmission Band (Miscell)	MHz•km	Hz•m	MHz•km	MHz•km
	2821	Transmission Band 0.85μm	MHz•km	Hz•m	MHz•km	MHz•km
	2822	Trancmission Band 1.30μm	MHz•km	Hz•m	MHz•km	MHz•km
	2823	Transmission Band Xμm	MHz•km	Hz•m	MHz•km	MHz•km
<b>[Mode Field Diameter]</b>						
	2830	Mode Field Dia (Miscell)	μm	m	μm	μm
	2831	Mode Field Dia 1.30μm	μm	m	μm	μm
	2832	Mode Field Dia 1.55μm	μm	m	μm	μm
	2833	Mode Field Dia Xμm	μm	m	μm	μm
<b>[Dispersion]</b>						
	2864	Dispersion 1.30μm	ps/(km•nm)	ps/(km•nm)	ps/(km•nm)	ps/(km•nm)
	2865	Dispersion 1.55μm	ps/(km•nm)	ps/(km•nm)	ps/(km•nm)	ps/(km•nm)
	2863	Dispersion (Miscell)	ps/(km•nm)	ps/(km•nm)	ps/(km•nm)	ps/(km•nm)
	2862	Zero Disp Wavelength	μm	m	μm	μm
<b>[Polarization Cross Talk]</b>						
	2840	Polari Cross Talk (Miscell)	dB	dB	dB	dB
	2841	Polari Cross Talk 0.63μm	dB	dB	dB	dB
	2842	Polari Cross Talk 0.85μm	dB	dB	dB	dB
	2843	Polari Cross Talk 1.30μm	dB	dB	dB	dB
	2844	Porari Cross Talk Xμm	dB	dB	dB	dB

### Non-linear Optics

	2161	Nonlinear Opt Property	#	#	#	#
	2162	Nonlinear Response Time	s	s	s	s
	2164	3rd Harmonic Generation (Miscell)	#	#	#	#
	2163	Nonlinear Susceptibility $\chi_3$	esu	$m^2/V^2$	esu	esu
	2165	2nd Harmonic Generation (Miscell)	#	#	#	#
	2160	Nonlinear Ref Index $n_2$	esu	$m^2/W$	esu	esu
	2167	Electrooptical Effect	#	#	#	#

## (4) Electrical, Magnetic

Category	ID	Property	Common	SI	CGS	PSI
<b>Electric Conductivity</b>						
	3305	Super Ionic Conduction	#	#	#	#
	3300	Super Conduction	—	—	—	—
	3117	Temp for 1E8 Ohm·cm	C	K	C	C
	3118	Surface Resistance	Ohm/sq	Ohm/sq	Ohm/sq	Ohm/sq
[Electric Conductivity (Miscell)]						
	3010	Electric Conduct (Miscell)	S/cm	S/m	S/cm	S/cm
<b>[Electric Conductivity (0-150C)]</b>						
	3011	Electric Conduct 0C	S/cm	S/m	S/cm	S/cm
	3012	Electric Conduct RT	S/cm	S/m	S/cm	S/cm
	3014	Electric Conduct 50C	S/cm	S/m	S/cm	S/cm
	3015	Electric Conduct 100C	S/cm	S/m	S/cm	S/cm
	3016	Electric Conduct 150C	S/cm	S/m	S/cm	S/cm
<b>[Electric Conductivity (200-900C)]</b>						
	3017	Electric Conduct 200C	S/cm	S/m	S/cm	S/cm
	3018	Electric Conduct 250C	S/cm	S/m	S/cm	S/cm
	3019	Electric Conduct 300C	S/cm	S/m	S/cm	S/cm
	3020	Electric Conduct 350C	S/cm	S/m	S/cm	S/cm
	3021	Electric Conduct 400C	S/cm	S/m	S/cm	S/cm
	3022	Electric Conduct 500C	S/cm	S/m	S/cm	S/cm
	3023	Electric Conduct 600C	S/cm	S/m	S/cm	S/cm
	3024	Electric Conduct 700C	S/cm	S/m	S/cm	S/cm
	3025	Electric Conduct 800C	S/cm	S/m	S/cm	S/cm
	3026	Electric Conduct 900C	S/cm	S/m	S/cm	S/cm
<b>[Electric Conductivity (1000-1900C)]</b>						
	3027	Electric Conduct 1000C	S/cm	S/m	S/cm	S/cm
	3028	Electric Conduct 1100C	S/cm	S/m	S/cm	S/cm
	3029	Electric Conduct 1200C	S/cm	S/m	S/cm	S/cm
	3030	Electric Conduct 1300C	S/cm	S/m	S/cm	S/cm
	3031	Electric Conduct 1400C	S/cm	S/m	S/cm	S/cm
	3032	Electric Conduct 1500C	S/cm	S/m	S/cm	S/cm
	3033	Electric Conduct 1600C	S/cm	S/m	S/cm	S/cm
	3034	Electric Conduct 1700C	S/cm	S/m	S/cm	S/cm
	3035	Electric Conduct 1800C	S/cm	S/m	S/cm	S/cm
	3036	Electric Conduct 1900C	S/cm	S/m	S/cm	S/cm
<b>[Coefficient <math>S_0</math>, <math>C_0</math> of Electric Conductivity Equation (FIG)]</b>						
	3041	$S_0$ of Electric Conductivity Eq A	S/cm	S/m	S/cm	S/cm
	3042	$S_0$ of Eq A (Low Temp)	S/cm	S/m	S/cm	S/cm
	3043	$S_0$ of Eq A (High Temp)	S/cm	S/m	S/cm	S/cm
	3044	$S_0$ of Eq A (Middle Temp)	S/cm	S/m	S/cm	S/cm
	3049	$C_0$ of Electric Conductivity Eq B	SK/cm	SK/m	SKcm	SK/cm
<b>[Activation Energy E of Electric Conductivity Equation (FIG)]</b>						
	3045	Activation Energy E of Electric Conductivity	eV	J/mol	kcal/mol	eV
	3046	Activation Energy E (Low Temp)	eV	J/mol	kcal/mol	eV
	3047	Activation Energy E (High Temp)	eV	J/mol	kcal/mol	eV
	3048	Activation Energy E (Middle Temp)	eV	J/mol	kcal/mol	eV
[DC Volume Resistivity (Miscell)]						
	3050	DC Vol Resistivity (Miscell)	Ohm·cm	Ohm·m	Ohm·cm	Ohm·cm
<b>[DC Volume Resistivity (0-150C)]</b>						
	3051	DC Vol Resistivity 0C	Ohm·cm	Ohm·m	Ohm·cm	Ohm·cm
	3052	DC Vol Resistivity RT	Ohm·cm	Ohm·m	Ohm·cm	Ohm·cm

Category	ID	Property	Common	SI	CGS	PSI
	3054	DC Vol Resistivity 50C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3055	DC Vol Resistivity 100C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3056	DC Vol Resistivity 150C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[DC Volume Resistivity (200-900C)]</b>						
	3057	DC Vol Resistivity 200C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3058	DC Vol Resistivity 250C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3059	DC Vol Resistivity 300C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3060	DC Vol Resistivity 350C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3061	DC Vol Resistivity 400C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3062	DC Vol Resistivity 500C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3063	DC Vol Resistivity 600C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3064	DC Vol Resistivity 700C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3065	DC Vol Resistivity 800C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3066	DC Vol Resistivity 900C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[DC Volume Resistivity (1000-1900C)]</b>						
	3067	DC Vol Resistivity 1000C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3068	DC Vol Resistivity 1100C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3069	DC Vol Resistivity 1200C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3070	DC Vol Resistivity 1300C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3071	DC Vol Resistivity 1400C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3072	DC Vol Resistivity 1500C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3073	DC Vol Resistivity 1600C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3074	DC Vol Resistivity 1700C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3075	DC Vol Resistivity 1800C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3076	DC Vol Resistivity 1900C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[DC Volume Resistivity Equation (FIG)]</b>						
	3077	Coeff R <sub>0</sub> of DC Vol Resist Eq	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3078	Activation Energy E of DC Vol Resistivity	eV	J/mol	kcal/mol	eV
<b>[AC Volume Resistivity (Miscell)]</b>						
	3090	AC Vol Resistivity (Miscell)	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[AC Volume Resistivity (0-150C)]</b>						
	3091	AC Vol Resistivity 0C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3092	AC Vol Resistivity RT	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3094	AC Vol Resistivity 50C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3095	AC Vol Resistivity 100C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3096	AC Vol Resistivity 150C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[AC Volume Resistivity (200-900C)]</b>						
	3097	AC Vol Resistivity 200C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3098	AC Vol Resistivity 250C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3099	AC Vol Resistivity 300C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3100	AC Vol Resistivity 350C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3101	AC Vol Resistivity 400C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3102	AC Vol Resistivity 500C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3103	AC Vol Resistivity 600C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3104	AC Vol Resistivity 700C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3105	AC Vol Resistivity 800C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3106	AC Vol Resistivity 900C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[AC Volume Resistivity (1000-1900C)]</b>						
	3107	AC Vol Resistivity 1000C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3108	AC Vol Resistivity 1100C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3109	AC Vol Resistivity 1200C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3110	AC Vol Resistivity 1300C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm

Category	ID	Property	Common	SI	CGS	PSI
	3111	AC Vol Resistivity 1400C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3112	AC Vol Resistivity 1500C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3113	AC Vol Resistivity 1600C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3114	AC Vol Resistivity 1700C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3115	AC Vol Resistivity 1800C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3116	AC Vol Resistivity 1900C	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
<b>[AC Volume Resistivity Equation (FIG)]</b>						
	3085	Coeff R <sub>0</sub> of AC Vol Resist Eq	Ohm•cm	Ohm•m	Ohm•cm	Ohm•cm
	3086	Activation Energy E of AC Vol Resistivity	eV	J/mol	kcal/mol	eV

## Dielectric

	3320	Electric Polarization	#	#	#	#
	3180	DC Breakdown Voltage (Miscell)	#	#	#	#
	3188	DC Breakdown Voltage	kV/mm	kV/m	kV/mm	kV/mm
<b>[Loss Tangent (Miscell)]</b>						
	3120	Loss Tangent (Miscell)	—	—	—	—
<b>[Loss Tangent 1kHz]</b>						
	3121	Loss Tangent 1kHz 0C	—	—	—	—
	3122	Loss Tangent 1kHz RT	—	—	—	—
	3124	Loss Tangent 1kHz 50C	—	—	—	—
	3125	Loss Tangent 1kHz 100C	—	—	—	—
	3126	Loss Tangent 1kHz 150C	—	—	—	—
	3127	Loss Tangent 1kHz 200C	—	—	—	—
	3128	Loss Tangent 1kHz 250C	—	—	—	—
	3129	Loss Tangent 1kHz 300C	—	—	—	—
	3152	Loss Tangent 1kHz 500C	—	—	—	—
	3130	Loss Tangent 1kHz XC	—	—	—	—
<b>[Loss Tangent 1MHz]</b>						
	3131	Loss Tangent 1MHz 0C	—	—	—	—
	3132	Loss Tangent 1MHz RT	—	—	—	—
	3134	Loss Tangent 1MHz 50C	—	—	—	—
	3135	Loss Tangent 1MHz 100C	—	—	—	—
	3136	Loss Tangent 1MHz 150C	—	—	—	—
	3137	Loss Tangent 1MHz 200C	—	—	—	—
	3138	Loss Tangent 1MHz 250C	—	—	—	—
	3139	Loss Tangent 1MHz 300C	—	—	—	—
	3140	Loss Tangent 1MHz XC	—	—	—	—
<b>[Loss Tangent 1GHz]</b>						
	3141	Loss Tangent 1GHz 0C	—	—	—	—
	3142	Loss Tangent 1GHz RT	—	—	—	—
	3144	Loss Tangent 1GHz 50C	—	—	—	—
	3145	Loss Tangent 1GHz 100C	—	—	—	—
	3146	Loss Tangent 1GHz 150C	—	—	—	—
	3147	Loss Tangent 1GHz 200C	—	—	—	—
	3148	Loss Tangent 1GHz 250C	—	—	—	—
	3149	Loss Tangent 1GHz 300C	—	—	—	—
	3150	Loss Tangent 1GHz XC	—	—	—	—
<b>[Loss Tangent YHz XC]</b>						
	3151	Loss Tangent YHz XC	—	—	—	—
<b>[Dielectric Constant]</b>						
	3174	Dielectric Const (Typical)	—	—	—	—

Category	ID	Property	Common	SI	CGS	PSI
	3175	Dielectric Const 60Hz	—	—	—	—
	3176	Dielectric Const 100Hz	—	—	—	—
	3170	Dielectric Const 1kHz	—	—	—	—
	3177	Dielectric Const 10kHz	—	—	—	—
	3178	Dielectric Const 100kHz	—	—	—	—
	3171	Dielectric Const 1MHz	—	—	—	—
	3172	Dielectric Const 1GHz	—	—	—	—
	3179	Dielectric Const 3GHz	—	—	—	—
	3181	Dielectric Const 10GHz	—	—	—	—
	3173	Dielectric Const Other Data	—	—	—	—
	3189	Dielectric Const (Miscell)	—	—	—	—

### Functional

	3190	Photoelectric Conversion	—	—	—	—
	3195	Thermoelectric Power	mV/K	mV/K	mV/K	mV/K
	3200	Piezo Electric Constant	—	—	—	—
	3201	Ferroelectric	—	—	—	—
	3310	Switching	—	—	—	—
	3400	Secondary Electron Emission	—	—	—	—

### Magnetic

	4000	Magnetism	—	—	—	—
	4001	Ferromagnetic	—	—	—	—
	4002	Ferrimagnetic	—	—	—	—
	4005	Curie Point	C	K	C	C
	4009	Magnetic Permeability	H/m	H/m	H/m	H/m
	4010	Specific Permeability	—	—	—	—
	4011	Magnetic Moment	#	#	#	#
	4030	Magnetic Susceptibility (Miscell)	#	#	#	#
	4031	Magnetic Susceptibility/vol $\chi$	emu/cm <sup>3</sup>	m <sup>3</sup> /m <sup>3</sup>	emu/cm <sup>3</sup>	emu/cm <sup>3</sup>
	4032	Magnetic Susceptibility/mass $\chi$	emu/g	m <sup>3</sup> /kg	emu/g	emu/g
	4033	Magnetic Susceptibility/mol $\chi$	emu/mol	m <sup>3</sup> /mol	emu/mol	emu/mol
	4034	Specific Susceptibility	—	—	—	—
	4040	Magnetic Coercive Force	A/m	A/m	Oe	Oe
	4050	Satur Mag Flux Density Bs	T	T	G	G
	4051	Residual Mag Flux Density Br	T	T	G	G
	4020	Magnetization/mass	A•m <sup>2</sup> /kg	A•m <sup>2</sup> /kg	emu/g	emu/g
	4052	Satur Magnetization Ms	A•m <sup>2</sup> /kg	A•m <sup>2</sup> /kg	emu/g	emu/g

## (5) Chemical, Biochemical

Category	ID	Property	Common	SI	CGS	PSI
<b>Chemical</b>						
<b>[Water Durability]</b>						
	5011	Water Durability ASTM	#	#	#	#
	5012	Water Durability DIN	#	#	#	#
	5013	Water Durability JIS	#	#	#	#
	5014	Water Durability JOGIS	#	#	#	#
	5015	Water Durability ISO	#	#	#	#
	5010	Water Durability Other	#	#	#	#
<b>[Acid Resistance]</b>						
	5021	Acid Resistance ASTM	#	#	#	#
	5022	Acid Resistance DIN	#	#	#	#
	5024	Acid Resistance JOGIS	#	#	#	#
	5025	Acid Resistance ISO	#	#	#	#
	5020	Acid Resistance Other	#	#	#	#
	5023	HF Resistance	#	#	#	#
<b>[Alkaline Resistance]</b>						
	5031	Alkaline Resistance ASTM	#	#	#	#
	5032	Alkaline Resistance DIN	#	#	#	#
	5033	Alkaline Resistance JOGIS	#	#	#	#
	5034	Alkaline Resistance ISO	#	#	#	#
	5030	Alkaline Resistance Other	#	#	#	#
<b>[Other Resistance]</b>						
	5040	Climate Resistance	#	#	#	#
	5050	Stain Resistance	#	#	#	#
	5060	Organic Solvent Resistance	#	#	#	#
	5070	Detergent Resistance	#	#	#	#
	5080	Salt Water Resistance	#	#	#	#
<b>[Reactive]</b>						
	1540	Hydration	—	—	—	—
	5150	Reaction with Gas	—	—	—	—
	5151	Reaction with Liquid	—	—	—	—
	5152	Reaction with Solid	—	—	—	—
	5153	Photocatalytic Ability	—	—	—	—
	5100	Ionic Selectivity	—	—	—	—
<b>Biochemical</b>						
	5200	Biocompatibility	—	—	—	—
	5201	Bioactive	—	—	—	—
	5210	Antithrombogenicity	—	—	—	—
	5220	Antibacterial	—	—	—	—

## (6) Characterization

Category	ID	Property	Common	SI	CGS	PSI
	7010	IR Spectrum	—	—	—	—
	7011	IR Reflection Spectrum	—	—	—	—
	7020	Raman Spectrum	—	—	—	—
	7030	UV / Visible Spectrum	—	—	—	—
	7035	UV / Visible Reflection Spectrum	—	—	—	—
	7040	Photo Acoustic Microscopy	—	—	—	—
	7050	SEM / EPMA	—	—	—	—
	7060	TEM	—	—	—	—
	7070	Tunnel SEM	—	—	—	—
	7080	Optical Microscope	—	—	—	—
	7081	AFM	—	—	—	—
	7090	Neutron Diffraction	—	—	—	—
	7091	SANS	—	—	—	—
	7100	X-Ray Diffraction	—	—	—	—
	7105	Fl X-Ray Spectrum	—	—	—	—
	7110	SAXS	—	—	—	—
	7120	EXAFS / XANES	—	—	—	—
	7130	NMR / NQR	—	—	—	—
	7140	ESR / EPR	—	—	—	—
	7150	Moessbauer	—	—	—	—
	7160	ESCA / Auger / SIMS / RBS / XPS	—	—	—	—
	7170	TG / DTA / DSC	—	—	—	—
	7180	TG-GS	—	—	—	—
	7200	Structure Model	—	—	—	—
	7210	Computer Simulation	—	—	—	—
	7212	Molecular Dynamics	—	—	—	—
	7220	Oxidation-Reduction	—	—	—	—
	7221	Oxidation	—	—	—	—
	7222	Reduction	—	—	—	—
	7225	Voltammetry	—	—	—	—
	7230	Structure Relaxation	—	—	—	—
	7240	Photo Acoustic Spectrum	—	—	—	—
	7242	Dielectric Relaxation	—	—	—	—
	7245	Electric Relaxation	—	—	—	—
	7250	Positron Annihilation	—	—	—	—
	7260	Ion beam Irradiation	—	—	—	—
	7021	Brillouin Scattering	—	—	—	—

## (7) Miscellaneous

8001～	Miscellaneous	#	#	#	#
8009					



## 2. ID List for Structure Database

### State

#### Glass General

Glass  
Glass-Ceramics  
Thin Film

#### Melt

#### Crystal

#### Others

#### Not Specified

### Structure

Category	ID	Structure	Shortened form in system	Unit
<b>Spectrum</b>				
	[Spectral Curve]			
	01101	IR-Visible (Figure)	IR-Visible (Fig)	–
	01102	Visible-UV (Figure)	Visible-UV (Fig)	–
	01114	Luminescence / IR-Visible (Figure)	Lumi / IR-Visible (Fig)	–
	01115	Luminescence / Visible-UV (Figure)	Lumi / Visible-UV (Fig)	–
	01103	Raman (Figure)	Raman (Fig)	–
	01104	NMR (Figure)	NMR (Fig)	–
	01105	Moessbauer (Figure)	Moessbauer (Fig)	–
	01106	ESR (Figure)	ESR (Fig)	–
	01107	XPS (Figure)	XPS (Fig)	–
	01108	XAFS, XANES, EXAFS (Figure)	XAFS (Fig)	–
	01109	X-Ray Diffraction (Figure)	X-Ray (Fig)	–
	01110	Neutron Diffraction (Figure)	Neutron (Fig)	–
	01111	Calculation (MD, MO) (Figure)	Calc (MD, MO) (Fig)	–
	01113	Others (Figure)	Others (Fig)	–
	[Peak or Valley]			
	01201	IR-Visible (Peak or Valley)	IR-Visible (Peak, Valley)	cm <sup>-1</sup>
	01202	Visible-UV (Peak or Valley)	Visible-UV (Peak, Valley)	nm
	01214	Luminescence / IR-Visible (Peak or Valley)	Lumi / IR-Visible (Peak, Valley)	cm <sup>-1</sup>
	01215	Luminescence / Visible-UV (Peak or Valley)	Lumi / Visible-UV (Peak, Valley)	nm
	01203	Raman (Peak or Valley)	Raman (Peak, Valley)	cm <sup>-1</sup>
	01204	NMR (Peak or Valley)	NMR (Peak, Valley)	kHz
	01205	Moessbauer (Peak or Valley)	Moessbauer (Peak, Valley)	kHz
	01206	ESR (Peak or Valley)	ESR (Peak, Valley)	mT
	01207	XPS (Peak or Valley)	XPS (Peak, Valley)	eV
	01208	XAFS, XANES, EXAFS (Peak or Valley)	XAFS (Peak, Valley)	eV
	01209	X-Ray Diffraction (Peak or Valley)	X-Ray (Peak, Valley)	deg
	01210	Neutron Diffraction (Peak or Valley)	Neutron (Peak, Valley)	deg
	01211	Calculation(MD, MO) (Peak or Valley)	Calc (MD, MO) (Peak, Valley)	–
	01213	Others (Peak or Valley)	Others (Peak, Valley)	–

Category	ID	Structure	Shortened form in system	Unit
<b>Interatomic Information</b>				
	02101	RDF etc (Figure) Radial Distribution Function $4\pi r^2 \rho(r)$ Pair Distribution Function $g(r)$ or $\rho(r)=\rho_0 g(r)$ Cumulative Pair Distribution Function Total Correlation Function $t(r)=4\pi r \rho(r)$ Differential Correlation Function $d(r)=4\pi r \{\rho(r) - \rho_0\}$ Others	RDF etc (Fig)	–
	02201	Interference Function (Figure)	Interference Function (Fig)	–
	02301	Structure Factor (Figure)	S(k) (Fig)	–
	02701	Ionic Radius	Ionic Radius	nm
	02802	Radius of Heterogeneities	Heterogeneity Radius	nm
[1st Interatomic Distance]				
	02401	1st Interatomic Distance (Typical)	1st Distance (Typical)	nm
	02402	1st Interatomic Distance (Average)	1st Distance (Ave)	nm
	02403	1st Interatomic Distance (Peak)	1st Distance (Peak)	nm
	02404	1st Distance Variance	1st Distance Variance	–
	02405	1st Asymmetric Parameter	1st Asymmetric Param	–
[2nd Interatomic Distance]				
	02501	2nd Interatomic Distance (Typical)	2nd Distance (Typical)	nm
	02502	2nd Interatomic Distance (Average)	2nd Distance (Ave)	nm
	02503	2nd Interatomic Distance (Peak)	2nd Distance (Peak)	nm
	02504	2nd Distance Variance	2nd Distance Variance	–
	02505	2nd Asymmetric Parameter	2nd Asymmetric Param	–
[n-th Interatomic Distance]				
	02901	n-th Interatomic Distance (Typical)	n-th Distance (Typical)	nm
	02902	n-th Interatomic Distance (Average)	n-th Distance (Ave)	nm
	02903	n-th Interatomic Distance (Peak)	n-th Distance (Peak)	nm
	02904	n-th Distance Variance	n-th Distance Variance	–
	02905	n-th Asymmetric Parameter	n-th Asymmetric Param	–
[Bond Angle]				
	02601	Bond Angle (Typical)	Bond Angle (Typical)	deg
	02602	1st Peak Bond Angle (Ave)	Bond Angle (1st Peak) (Ave)	deg
	02610	1st Peak Angle Variance (Ave)	Angle Variance (1st Peak) (Ave)	–
	02603	2nd Peak Bond Angle (Ave)	Bond Angle (2nd Peak) (Ave)	deg
	02604	2nd Peak Angle Variance (Ave)	Angle Variance (2nd Peak) (Ave)	–
	02605	1st Peak Bond Angle (Peak)	Bond Angle (1st Peak) (Peak)	deg
	02606	1st Peak Angle Variance (Peak)	Angle Variance (1st Peak) (Peak)	–
	02607	2nd Peak Bond Angle (Peak)	Bond Angle (2nd Peak) (Peak)	deg
	02608	2nd Peak Angle Variance (Peak)	Angle Variance (2nd Peak) (Peak)	–
	02609	Bond Angle Distribution (Figure)	Bond Angle Distribution (Fig)	–
<b>Ring Structure</b>				
	03001	Ring Size (Typical)	Ring Size (Typical)	–
	03002	Ring Size (Average)	Ring Size (Ave)	–
	03003	Ring Size (1st Peak)	Ring Size (1st Peak)	–
	03004	Ring Size (2nd Peak)	Ring Size (2nd Peak)	–
	03005	2-Membered Ring Proportion	2-Membered Ring	%
	03006	3-Membered Ring Proportion	3-Membered Ring	%

Category	ID	Structure	Shortened form in system	Unit
	03007	4-Membered Ring Proportion	4-Membered Ring	%
	03008	5-Membered Ring Proportion	5-Membered Ring	%
	03009	6-Membered Ring Proportion	6-Membered Ring	%
	03010	7-Membered Ring Proportion	7-Membered Ring	%
	03011	8-Membered Ring Proportion	8-Membered Ring	%
	03012	9-Membered Ring Proportion	9-Membered Ring	%
	03013	10-Membered Ring Proportion	10-Membered Ring	%
	03014	Distribution of Ring Structure (Figure)	Ring Structure Distribution (Fig)	–

### Coordination Number

04001	Coordination Number (Typical)	Coord No. (Typical)	–
04002	1st Neighbour Coordination Number	1st Neighbor Coord No.	–
04003	2nd Neighbour Coordination Number	2nd Neighbor Coord No.	–
04004	3rd Neighbour Coordination Number	3rd Neighbor Coord No.	–
04005	Coordination Number 1 Proportion	Coord No. 1	%
04006	Coordination Number 2 Proportion	Coord No. 2	%
04007	Coordination Number 3 Proportion	Coord No. 3	%
04008	Coordination Number 4 Proportion	Coord No. 4	%
04009	Coordination Number 5 Proportion	Coord No. 5	%
04010	Coordination Number 6 Proportion	Coord No. 6	%
04011	Coordination Number 7 Proportion	Coord No. 7	%
04012	Coordination Number 8 Proportion	Coord No. 8	%
04013	Coordination Number 9 Proportion	Coord No. 9	%
04014	Coordination Number 10 Proportion	Coord No. 10	%
04015	Coordination Number 11 Proportion	Coord No. 11	%
04016	Coordination Number 12 Proportion	Coord No. 12	%
04017	Distribution of Coordination Number (Figure)	Coord No. Distribution (Fig)	–

### Bridging Oxygen Information

[Bridging Oxygen]

05101	NBO / total O	NBO / total O	%
05102	NBO Number / Network Former X	NBO Number / X	–
05103	BO / total O	BO / total O	%
05104	BO Number / Network Former X	BO Number / X	–
05105	Isolated Oxygen O <sup>2-</sup> / total O	O <sup>2-</sup> / total O	%
05106	Isolated Oxygen O <sup>2-</sup> / Network Former X	O <sup>2-</sup> Number / X	–
05107	3 Coordinated Oxygen / total O	O(3) / total O	%
05108	3 Coordinated Oxygen / Network Former X	O(3) Number / X	–

[Q<sup>n</sup> Distribution]

05201	Q <sup>0</sup> / total X	Q <sup>0</sup> / total X	%
05202	Q <sup>1</sup> / total X	Q <sup>1</sup> / total X	%
05203	Q <sup>2</sup> / total X	Q <sup>2</sup> / total X	%
05204	Q <sup>3</sup> / total X	Q <sup>3</sup> / total X	%

Category	ID	Structure	Shortened form in system	Unit
	05205	Q <sup>4</sup> / total X	Q4 / total X	%

### Oxidation Number

06001	Valence Number (Average)	Valence No. (Ave)	–
06002	-6 Valence Proportion	-6 Valence	%
06003	-5 Valence Proportion	-5 Valence	%
06004	-4 Valence Proportion	-4 Valence	%
06005	-3 Valence Proportion	-3 Valence	%
06006	-2 Valence Proportion	-2 Valence	%
06007	-1 Valence Proportion	-1 Valence	%
06008	0 Valence Proportion	0 Valence	%
06009	+1 Valence Proportion	+1 Valence	%
06010	+2 Valence Proportion	+2 Valence	%
06011	+3 Valence Proportion	+3 Valence	%
06012	+4 Valence Proportion	+4 Valence	%
06013	+5 Valence Proportion	+5 Valence	%
06014	+6 Valence Proportion	+6 Valence	%

### Structure Model

08001	Structure Model	Structure Model	–
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### Basicity

09001	Optical Basicity	Optical Basicity	–
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### Induced Structure

10001	Induced Structure (by Femtosec Laser, etc.)	Induced Structure	–
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### Phase Separation

11001	Phase Separation	Phase Separation	–
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### FSDP and Boson Peak

07001	FSDP Q Value	FSDP Q Value	nm <sup>-1</sup>
07002	FSDP Quasi-Bragg Plane Spacing	FSDP Quasi-Bragg Plane Spacing	nm
07003	Boson Peak	Boson Peak	cm <sup>-1</sup>

### Raman Data

12001	Depolarization Ratio	Depolarization Ratio	–
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### ESR Data

16001	g Value	g Value	–
16002	g Value (perpendicular)	g Value (perp)	–
16003	g Value (parallel)	g Value (para)	–
16004	Hyperfine Coupling Constant (hfcc) (A)	Hyperfine Coupling Const	cm <sup>-1</sup>
16005	Hyperfine Coupling Constant (perpendicular)	perp Hyperfine Coupling Const	cm <sup>-1</sup>

Category	ID	Structure	Shortened form in system	Unit
	16006	Hyperfine Coupling Constant (parallel)	para Hyperfine Coupling Const	cm <sup>-1</sup>
	16007	Hyperfine Structure Spacing	Hyperfine Structure Spacing	cm <sup>-1</sup>
	16008	ESR / Peak-to-Peak Distance	ESR / Peak-to-Peak	G
	16009	Dipolar Hyperfine Coupling Parameter	Dipolar Hyperfine Coupling Param	cm <sup>-1</sup>
	16010	Fermi Contact Interaction Parameter	Fermi Contact Interaction Param	–

### XAFS Data

	13001	Absorption Edge Position	Absorption Edge Position	eV
	13002	Pre Edge Position	Pre Edge Position	eV

### NMR Data

	14001	Quadrupolar Coupling Constant	Quadrupolar Coupling Const	MHz
	14002	Asymmetry Parameter	Asymmetry Param	–
	14003	Proportions Present	Proportions Present	%
	14004	Chemical Shift (Average)	Chemical Shift (Ave)	ppm
	14025	Chemical Shift (Peak)	Chemical Shift (Peak)	ppm
	14005	Chemical Shift Anisotropy	Chemical Shift Anisotropy	ppm
	14006	Isotropic Chemical Shift	Isotropic Chemical Shift	ppm
	14022	Second-order Quadrupolar Shift	2nd-order Quadrupolar Shift	ppm
	14007	Quadrupolar Isotropic Chemical Shift <sup>17</sup> O	Quadrupolar Isotropic Chemical Shift 17O	ppm
	14008	Shielding Constant	Shielding Const	ppm
	14009	Spin Coupling Constant	Spin Coupling Const	Hz
	14010	Relaxation Time	Relaxation Time	s
	14011	Longitudinal Relaxation Time T <sub>1</sub>	Relaxation Time T1	s
	14012	Transverse Relaxation Time T <sub>2</sub>	Relaxation Time T2	s
	14013	Quadrupole Relaxation	Quadrupole Relaxation	s
	14021	Line Width (FWHM)	NMR-FWHM	ppm
	14015	Dipole Interaction	Dipole Interaction	Hz
	14016	Quadrupole Interaction	Quadrupole Interaction	Hz
	14017	Electric Field Gradient	Electric Field Gradient	–
	14019	Effect of Secondary Quadrupole	2nd Quadrupole Effect	ppm
	14020	Quadrupole Moment	Quadrupole Moment	m <sup>2</sup>
	14023	Quadrupolar Coupling Parameter	Quadrupolar Coupling Param	MHz
	14024	Isotropic Dimension	Isotropic Dimension	ppm

### Moessbauer Data

	15001	Isomer Shift	Isomer Shift	mm/s
	15002	Quadrupole Splitting	Quadrupole Splitting	mm/s
	15003	Line Width (FWHM)	Moessbauer-FWHM	mm/s
	15004	Asymmetric Parameter	Asymmetric Param	–

### Others

	99999	Others (O00001~)	Others	–
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## Measurement Method

Measurement method	Shortened form in system
IR-Visible Spectroscopy	IR-Visible
Visible-UV Spectroscopy	Visible-UV
Luminescence / IR-Visible	Lumines / IR-Visible
Luminescence / Visible-UV	Lumines / Visible-UV
Raman Spectroscopy	Raman
Nuclear Magnetic Resonance (NMR)	NMR
Moessbauer Spectroscopy	Moessbauer
X-ray Photoelectron Spectroscopy (XPS)	XPS
Electron Spin Resonance Spectroscopy (ESR)	ESR
Neutron Diffraction	Neutron
X-ray Diffraction	X-ray
X-ray Absorption Fine Structure (XAFS, XANES, EXAFS)	XAFS
Calculation (MO, MD, etc)	Calc (MO, MD, etc)
Others	Others

IDs of Glass System, Data Source (Book, Scientific Journal, Proceedings, etc.) and Composition in Structure Database are the same as those in Property Database.

(24 August, 2022)